

NFEnergía LLC
SAN JUAN MICRO-FUEL HANDLING FACILITY
RESOURCE REPORT 13—ENGINEERING AND DESIGN MATERIAL

C.2 REGULATORY AGENCY CORRESPONDENCE

Document Number	Document Title	Appendix Security
--	NFE - SJ MFH Permit & Filings & Communications Chart (11-13-2020)	Public

H.1 SAFETY DATA SHEETS

Document Number	Document Title	Appendix Security
--	SDS Index Updated 06-11-2021	Public
--3	634402 Rust Oleum High Gloss Protective Enamel.pdf	Public
--	7769730 Rust Oleum Rusty Metal Primer.pdf	Public
--	All Metal Aluminum Filled Automotive Compound.pdf	Public
--	Concrete-acrylic-fortifier.pdf	Public
--	CRC Thread Lubricant.pdf	Public
--	Desi Pak.pdf	Public
--	Diesel.pdf	Public
--	Doctor Mecanico.pdf	Public
--	E-Nox Clean.pdf	Public
--	gasoline-all-grades.pdf	Public
--	Heatless-Desiccant-Dryer-Safety-Data-Sheet.pdf	Public
--	Hydraulic fluid- for HPU Klaw.pdf	Public
--	Liquefied Natural Gas SDS.pdf	Public
--	Multipurpose Food Grade Grease.pdf	Public
--	Mystik Hi temp Grease.pdf	Public
--	Never-Seez Regular Grade Compound.pdf	Public
--	Polyvinil Chloride Solvent Cement.pdf	Public
--	propane.pdf	Public
--	Rust Tough Enamel.pdf	Public
--	Safety Data Sheet 11 Component Range P-18-13729.pdf	Public
--	Safety Data Sheet Helium Compressed P-4602.pdf	Public
--	SDS Heavy Duty Degreaser.pdf	Public
--	SDS Index Updated 06-11-2021.pdf	Public
--	SDS Nitrogen- Refrigerated Liquid.pdf	Public
--	SDS-100-RTV-Silicone Sealant Construction-Marine-SS887-EN.pdf	Public
--	SDS-Premium-Fast-Lacquer-Thinner-LT102-EN.pdf	Public
--	SDS-SHELL-GADUS-S2-V220-CA-EN-M0205 (1).pdf	Public
--	Shell Rotella 10w 40 Oil.PDF	Public
--	Shell Tellus S2 VX22.pdf	Public
--	Sherwin Williams Pro Industrial Urethane Enamel.pdf	Public
--	Sikaflex-Construction-Sealant-SDS-1856735.PDF	Public
--	Swak and Classic Swak.pdf	Public
--	Touch N Foam Max Fill 4701301english.pdf	Public
--	TRAC 100 SDS.pdf	Public
--	Ultra Low Sulfur Diesel.pdf	Public
--	Ultra-EL-Synthetic Rotary Coolant.pdf	Public
--	Uno SF.pdf	Public

Appendix C.2

**PERMIT APPLICATIONS, RELATED FILINGS, AND COMMUNICATIONS WITH FEDERAL, STATE STAFF
REGARDING THE PUERTO RICO MFH FACILITY**

No.	DATE (TIME)¹	FORM OF CONTACT	STAFF CONTACTED / PARTICIPATING	V&E / NFE MEMBERS INVOLVED	SUBJECT MATTER
1.	10-19-2017	Phone	Gordon Wagner (Senior Attorney in the Office of General Counsel)	Anita Wilson	<ul style="list-style-type: none"> Gordon called Anita to confirm his attendance at the upcoming October 26 meeting and to ask what the source of the LNG to the facility will be.
2.	10-25-2017 (9:17 AM)	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Provided Gordon with FERC cases regarding Section 3 jurisdiction over LNG facilities. Also noted that the gas will be non-U.S., likely from Trinidad.
3.	10-25-2017 11:07 AM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Response from Gordon stating the cases provided are logically related. Provided that P 14 of <i>The Gas Company LLC</i> is relevant and that although the LNG at issue was domestic, not foreign, this should not alter the conclusion that loading LNG containers at a multipurpose port does not convert the existing port infrastructure into natural gas facilities.
4.	10-26-2017	In-Person Meeting	<ul style="list-style-type: none"> Rich McGuire (Director of Gas Environment and Engineering within the Office of Energy Projects (“OEP”)) Hugh Thomas (Chief of LNG Branch 2 within Gas) 	<ul style="list-style-type: none"> Brannen McElmurray Britt Rogers Anita Wilson John Decker 	<ul style="list-style-type: none"> Discussed NFE’s proposed activities in Puerto Rico, including the proposed MFH Facility. Britt Rogers noted that NFE was working with the U.S. Coast Guard and local authorities in Puerto Rico on permitting for the project. Prior to the meeting, V&E provided Mr. Wagner with copies of the <i>Emera CNG, LLC</i> and <i>Shell U.S. Gas & Power, LLC</i> orders. Mr. Wagner agreed that the project, as described, would be non-jurisdictional under FERC’s

¹ As applicable and in Eastern Standard Time.

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			Environment and Engineering) <ul style="list-style-type: none"> • Richard Foley (Chief of Certificate Branch 1 within the Division of Pipeline Certificates) • Gordon Wagner • Cyrus Zarraby (Attorney Advisor in the Office of General Counsel) • Various staffers from the Office of Energy Market Regulation (“OEMR”) and OEP, including Keith Pierce (Energy Industry Analyst, OEMR) 		precedent in <i>Emera CNG, LLC</i> and <i>Shell U.S. Gas & Power, LLC</i> .
5.	12-12-2017	Letter of Intent	USCG	Capt. Mark Lane	<ul style="list-style-type: none"> • Application for LOR that references the truck loading and references possible regasification facilities if PREPA “chooses to pursue the regasification of Units 5 and 6.”
6.	2-6-2018	Letter	Lisa Burley (DHS)	John Michael	<ul style="list-style-type: none"> • Seeks confirmation that the planned use of the FSU will not trigger Jones Act and references possible supply to Palo Seco in addition to other industrial and power customers.

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7.	2-6-2018	Letter	John Wagner (CBP)	Casey Hopkins	<ul style="list-style-type: none"> Letter requesting grant of parole from 29-day rule and references possible supply to Palo Seco in addition to other industrial and power customers.
8.	2-7-2018 8:46 AM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Providing Gordon with advance notice that he will receive two phone calls to confirm meetings with FERC Staff – one from USCG regarding Puerto Rico and the other from NJDEP on the Repauno project.
9.	2-7-2018 9:21 AM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Gordon acknowledges receipt of advance notice from Anita of two incoming calls from the Coast Guard regarding the Puerto Rico facility.
10.	2-9-2018 12:26 PM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Anita provided that the proposal before the USCG is for the truck loading facilities only and not deliveries to the generating facility. Noted that the company had a meeting with Nick Smith and his boss, Commander Young, in Puerto Rico in which the company was clear that FERC would not confirm the non-jurisdictional status in writing. States that we hope Gordon can confirm with Nick Smith the tenor and substance of the October meeting and belief that the truck loading facilities before the USCG are consistent with other non-jurisdictional facilities.
11.	2-9-2018 2:39 PM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Message from Gordon stating that Nick Smith and his superior officer phone and discussed the project. States that Gordon sent an email to Nick confirming that FERC staff met with NFE representatives in October and his opinion that the

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					project, as represented, will not be subject to FERC jurisdiction.
12.	3-9-2018	Application	DOE	NFE	<ul style="list-style-type: none"> Filed an application with the Office of Fossil Energy (FE) of the DOE, under NGA Section 3, for blanket authorization to import LNG from various international sources by vessel, up to a total volume equivalent to 80 billion Bcf of natural gas for a 2-year term.
13.	3-26-2018	Order	DOE	NFE	<ul style="list-style-type: none"> DOE issues the Order granting blanket authorization to import LNG for a 2-year term ending March 25, 2020
14.	4-3-2018	Letter	USCBP	John Michael	<ul style="list-style-type: none"> Advising about practices that do not violate the Jones Act.
14A ²	5-2-2018	Application	From NFE to the Governor of Puerto Rico	NFE	<ul style="list-style-type: none"> Application to request a designation of the facility as a Strategic Project
14B	5-2-2018	Application	From NFE to the Governor of Puerto Rico	NFE	<ul style="list-style-type: none"> Evidence of payment for application submission
14C	5-4-2018	Designation	Governor of Puerto Rico	NFE	<ul style="list-style-type: none"> Notice of designation of the facility as a Strategic Project (Certification No. PE-2018-78-002)
15.	5-7-2018	Report 1	OGPE (Ian Carlos Sema)	Craig Wolfgang	<ul style="list-style-type: none"> Submission of Environmental Assessment for MGH (“transloading ... LNG for delivery by truck to end users”).
16.	5-22-2018	WSA	USCG (Lt. CDR Otani)	Capt. Mark Lane	<ul style="list-style-type: none"> Follow-on Waterway Suitability Assessment again mentions potential for PREPA 5/6 regasification project.³
17.	5-31-2018	Letter	CBP	Casey Hopkins	<ul style="list-style-type: none"> CBP’s grant of parole

² Note #14 and #14A-C are not related; this document was just added to the chart subsequently so we wanted to avoid re-numbering all documents in the VEB site.

³ Note this document contains Sensitive Security Information that should not be disclosed to persons without a “need to know”.

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18.	6-4-2018	Authorization	OGPe	NFE	<ul style="list-style-type: none"> • Issuance of Environmental Assessment Recommendation for the final environmental document for MFH facility.
19.	7-16-2018	Permit	EQB	NFE	<ul style="list-style-type: none"> • Permit authorizing the removal of asbestos containing materials before the demolition.
20.	7-20-2018	Authorization	OGPe	NFE	<ul style="list-style-type: none"> • Issuance of Environmental Assessment Approval for MFH facility.
21.	7-30-2018	RFP	PREPA	NFE	<ul style="list-style-type: none"> • PREPA issued a request for proposals for the supply of natural gas fuel and the conversion of San Juan Units 5 & 6 to dual fuel units.
22.	8-3-2018	Application	ACOE (Castillo, S)	Jaime Pabon (M&N)	<ul style="list-style-type: none"> • Application for Authorization to Use NWP 3 for repairs to dock
23.	8-16-2018	Phone	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> • In email to Brannen dated 8-16-2018 at 12:49 PM, Anita states that she spoke to Gordon about the San Juan project and explained the upcoming NFE-USCG meeting, and the expectation that USCG would follow up with FERC. • States that she told Gordon that the project involves offloading LNG directly into trucks for delivery for which the jurisdictional analysis should be straightforward. • States that she also told Gordon that NFE has been asked by PREPA to propose a gas supply option to their adjacent plant and will likely come back to FERC to discuss any plans once we have a better sense of what they are. • States that Gordon had questions about timing and how long it was taking to get LNG to the island. Also noted that PREPA had an RFP with responses

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					due in the fall and that we would get back with any updates on PREPA in the fall.
24.	8-18-2018	Application	DTOP	NFE	<ul style="list-style-type: none"> Filing the Franchise for Natural Gas Importation, Storage and Distribution.
25.	8-24-2018	Permit	Municipality of San Juan	NFE	<ul style="list-style-type: none"> Permit for the demolition of the warehouses located at the MFH property.
26.	9-13-2018	Phone	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Spoke in regard to the Repauno Project, but Gordon noted that he wished someone would submit a petition for declaratory order for one of the non-jurisdictional LNG projects, <i>i.e.</i>, potentially referring to the MFH Facility in San Juan or others.
27.	9-14-2018	Report 2	OGPe	Craig Wolfgang	<ul style="list-style-type: none"> Submission of Non-Substantial Variation to Environmental Assessment for work on dock.
28.	9-25-2018	Approval	USFWS	NFE	<ul style="list-style-type: none"> USFWS concurs that “project may effect, but is not likely to adversely affect” manatees.
29.	9-26-2018	Approval	USCG	BM/CML	<ul style="list-style-type: none"> USCG issues the LOR for the project.
30.	9-27-2018	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Non-Substantial Variation for the Pier repair work.
31.	9-28-2018 9:42 AM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Provided USCG Letter of Recommendation for NFE in Puerto Rico, as a follow up to a voicemail left for Gordon. Gordon responded that he received the email at 10:30 AM.
32.	9-28-2018 4:33 PM	Email	Gordon Wagner	Anita Wilson	<ul style="list-style-type: none"> Following up with Gordon thanking him for taking the Coast Guard’s call and the invitation to the Coast Guard to follow up if more clarification is necessary.

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33.	10-25-2018	RFP Evaluation	PREPA	NFE	<ul style="list-style-type: none"> PREPA issues Evaluation and Selection Report identifying NFE as its preferred bidder for the award of the San Juan 5 & 6 Fuel Sale and Purchase Agreement
34.	11-21-2018	Conference	SHPO	Lee Evans	<ul style="list-style-type: none"> Meeting to discuss architectural analysis of demolished warehouses.
35.	12-13-2018	Letter	NMFS (Davy, K)	ACOE (Castillo, S)	<ul style="list-style-type: none"> All potential effects on NMFS species “found to be discountable, insignificant or beneficial”.
36.	12-21-2018	Preliminary Agreement	PREPA	NFEnergía	<ul style="list-style-type: none"> PREPA and NFE reach agreement on contract terms for San Juan 5 & 6 Fuel Sale and Purchase Agreement for submission by PREPA for its internal and external approvals prior to formal execution
37.	1-10-2019	Authorization	Telecom Board	NFE	<ul style="list-style-type: none"> Endorsement for the construction of the telecommunication works at the MFH facility.
38.	1-11-2019	Report 4	OGPe	Carlos Lopez	<ul style="list-style-type: none"> Submission of Amended Non-Substantial Variation to EA for interconnect facility to PREPA 5/6.
39.	1-17-2019	Letter	ACOE (Castillo, S)	Casey Hopkins	<ul style="list-style-type: none"> Letter requesting ACOE to make determination that architectural property is not part of the area of concern and to issue authorization to proceed under NWP 3.
40.	2-4-2019	Application	EQB	NFE	<ul style="list-style-type: none"> Application for Construction Permit for MFH
41.	2-4-2019	Authorization	PREPA	NFE	<ul style="list-style-type: none"> Endorsement for the final electrical plans for the MFH facility.
42.	2-8-2019	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Construction Permit for Phase 1 of the MFH facility (foundations and civil works).

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43.	1-13-2019	Appeal	Puerto Rico Tribunal de Apelaciones Panel II	NFEnergía	<ul style="list-style-type: none"> PUMA submits appeal of PREPA's decision to award San Juan 5 & 6 Fuel Sale and Purchase Agreement to NFEnergía.
44.	2-25-2019	Permit	EQB	NFE	<ul style="list-style-type: none"> Issuance of Construction Permit for Air emissions of the MFH facility.
45.	2-25-2019	Authorization	PRASA	NFE	<ul style="list-style-type: none"> Endorsement for the construction of the potable water and sanitary works for the MFH facility.
46.	2-27-2019	Permit	EQB	NFE	<ul style="list-style-type: none"> Issuance of General Consolidated Permit for the MFH facility.
47.	3-5-2019	Contract	PREPA	NFEnergía	<ul style="list-style-type: none"> Execution of Fuel Sale and Purchase Agreement for San Juan Units 5 & 6
48.	3-6-2019	Permit	ACOE (Castillo, S)	BM	<ul style="list-style-type: none"> Authorization to proceed under NWP 3 with respect to project.
49.	3-8-2019	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Construction Permit for Phase 2 for the MFH facility.
50.	3-12-2019	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Construction Permit for Berth Repair work.
51.	3-19-2019	Authorization	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Pre-Consult certifying exemption from earth works permit and tree cutting mitigation.
52.	3-21-2019	Authorization	Planning Board	NFE	<ul style="list-style-type: none"> Issuance of Coastal Zone Consistency letter for the MFH facility.
53.	3-26-2019	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of General Consolidated Permit for the Pier Repair Works.
54.	4-16-2019	Letter	USEPA Region II	PREPA/BM/GCH	<ul style="list-style-type: none"> PREPA submitted request to R2 of USEPA for determination that the gasification of Units 5 and 6 will not trigger PSD.
55.	4-26-2019	Ruling	Puerto Rico Tribunal de Apelaciones Panel II	NFEnergía	<ul style="list-style-type: none"> Appeals court issues ruling confirming PREPA's decision to award the San Juan Units 5 & 6 Fuel Sale and Purchase Agreement to NFEnergía

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56.	5-31-2019	Permit	DTOP	NFE	<ul style="list-style-type: none"> • Issuance of the Franchise for Natural Gas Importation, Storage and Distribution.
57.	7-18-2019	Notice	USCG	NFE	<ul style="list-style-type: none"> • USCG publishes Notice of Public Hearings in San Juan regarding the revision of the safety zone to accommodate LNG traffic.
58.	7-19-2019	Letter	USEPA Region II	PREPA/BM/GCH	<ul style="list-style-type: none"> • R2 of USEPA determines that the project will not trigger PSD/NSR based on projections provided.
59.	7-26-2019	Hearings	USCG	BM	<ul style="list-style-type: none"> • USCG holds public hearings in San Juan for revision of Safety Zone.
60.	8-8-2019	Application	DTOP	NFE	<ul style="list-style-type: none"> • Filing of the Construction Endorsement for the natural gas pipeline to PREPA.
61.	8-16-2019	Letter	USCG	NFE	<ul style="list-style-type: none"> • Responding to Comments submitted concerning public notice for safety zone revisions.
62.	[8-17-2019]	Application	EQB	PREPA	<ul style="list-style-type: none"> • PREPA applies for construction permit for regasification of Units 5 and 6.
63.	10-3-2019	Permit	EQB	PREPA	<ul style="list-style-type: none"> • EQB issues Construction Permit for Units 5/6.
64.	11-6-2019	Application	EQB	NFE	<ul style="list-style-type: none"> • Filed the Operations Permit for Air Emissions to the MFH facility.
65.	11-15-2019	Permit	DTOP	NFE	<ul style="list-style-type: none"> • Issuance of the Construction Endorsement for the natural gas pipeline construction to PREPA.
66.	1-17-2020	Application	DOE	John Decker Andrew DeVore	<ul style="list-style-type: none"> • Filed an application with the Office of Fossil Energy (FE) of the DOE, under NGA Section 3, for blanket authorization to import LNG from various international sources by vessel, up to a total volume equivalent to 80 billion Bcf of natural gas for a 2-year term beginning March 26, 2020.
67.	1-22-2020	Amendment	DTOP	NFE	<ul style="list-style-type: none"> • Amendment to include the pipeline in the DTOP Franchise for Importing, Storing and Distributing Natural Gas.

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68.	2-13-2020	Order	DOE	John Decker	<ul style="list-style-type: none"> DOE issues the Order granting blanket authorization to import LNG for a 2-year term ending March 25, 2022.
69.	3-24-2020	Letter	EQB	NFE	<ul style="list-style-type: none"> NFE issues letter to EQB responding to their questions about the air permitting analysis (letter distinguishes tanks from drums and confirms “no tanks”).
70.	5-13-2020	Examination	USCG	Carlos Faris @ NFE	<ul style="list-style-type: none"> USCG confirmed its review of the MFH Operations Manual and approved the submitted Facility Security Plan.
71.	5-20-2020	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Unique Permit, which includes the Use Permit, Fire Department Endorsement and Sanitary License from the Health Department.
72.	6-4-2020	Application	EQB	NFE	<ul style="list-style-type: none"> Submission of Non-Substantial Variation for the approval of the electrical building, and equipment changes incorporated.
73.	6-18-2020	Permit	OGPe	NFE	<ul style="list-style-type: none"> Issuance of Non-Substantial Variation for the approval of the electrical building and equipment changes.
74.	8-10-2020	Notice	US Army Corps of Engineers	NFE	<ul style="list-style-type: none"> Submission of Self-Certification to the US Army Corps of Engineers under NWP 3
75.	10-30-2020	Permit	DNER	NFE	<ul style="list-style-type: none"> Issuance of the Air Emissions Construction Permit Modification

Appendix H.1

CHEMICAL NAME	CAS NUMBER (IF AVAILABLE)	CHEMICAL MANUFACTURER NAME	MANUFACTURER EMAIL ADDRESS	MANUFACTURER EMERGENCY NUMBER	OPERATION /AREA USED	DATE BROUGHT	DATE REMOVED FROM SITE
LIQUIFIED NATURAL GAS	68410-63-9	NEW FORTRESS ENERGY	bhutton@newfortressenergy.com	1-800-424-9300	Truck Loading and Regasification Process	Mar-20	
ULTRA LOW SULFUR DIESEL	68476-34-6	Maraton Petroleum Company LP		1-877-627-5463	Use for the Electric Generator	Jun-20	
PROPANE	74-98-6	MARKWEST ENERGY PARTNERS		1-800-730-8388	Gas Combustion Unit	Mar-20	
NITROGEN, REFRIGERATED LIQUID	7727-37-9	MESSER	Ask.messer@messer-us.com	1-800-232-4726	Purging Process/ Nitrogen Tank closed to Air Compressors Area	Mar-20	
HELIUM, COMPRESSED	7440-59-7	PRAXAIR	pdimsds@praxair.com	1-800-645-4633	Calibration Gas for the Chromatograph	Mar-20	
ME- BUTANE, CARBON DIOXIDE, ETHANE, HEXANE, ISOBUTANE, ISOPENTANE, NEOPENTANE, NITROGEN, PENTANE, PROPANE	74-82-8, 74-84-0, 7727-37-9, 74-98-6, 124-38-9, 106-97-8, 75-28-5, 463-82-1, 109-66-0, 78-78-4, 110-54-3	PRAXAIR	pdimsds@praxair.com	1-800-645-4633	Calibration Gas for the Chromatograph	Mar-20	
SHELL TELUS S2 VX22	001E-0122	SHELL CANADA PRODUCTS		1-800-661-1600	Hydraulic fluid for the KLAW Hydraulic Pump Units	3/31/2020	
TRASAR™ TRAC 100	7631-95-0, 6834-92-0, 1330-43-4	NALCO WATER an ECOLAB COMPANY		1-800-424-9300	Anticorrosive Additive injected to the Demin Water Tank	Aug-20	
RUST TOUGH® 250 ENAMEL	64742-47-8	KRYLON PRODUCTS	www.Krylon.com/ Contact us	1-800-424-9300	Maintenance tasks	Apr-20	
ALL METAL® ALUMINIUM FILLED AUTOMOTIVE COMPUND	100-42-5 14807-96-6 546-93-0 7429-90-5 1675-54-3 16-52-7 27253-31-2	U.S. CHEMICAL & PLASTICS	info@uschem.com	1-800-424-9300	Maintenance tasks	Apr-20	
UNO SF	28348-53-0 10213-79-3	WALTER SURFACE TECHNOLOGIES	info.us@walter.com	1-800-535-5053	Maintenance tasks	Apr-20	
SWAK AND CLASSIC SWAK	41637-38-1 25322-68-3 13463-67-7 9002-84-0 29408-67-1	SWAGELOK	www.swagelok.com/Contact-us	1-800-424-9300	Maintenance tasks	Apr-20	
MULTIPURPOSE FOOD GRADE GREASE 14	8042-47-5 54326-11-3 1317-13-2 14808-60-7 128-37-0	CRC INDUSTRIES	general@crcind.com	1-800-424-9300	Maintenance Tasks	Apr-20	
E-NOX CLEAN	7664-38-2 68411-30-3 68439-50-9	BIO-CIRCLE	Info.us@walter.com	1-800-535-5053	Maintenance tasks	Apr-20	

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Maintenance Warehouse SDS List							
CHEMICAL NAME	CAS NUMBER (IF AVAILABLE)	CHEMICAL MANUFACTURER NAME	MANUFACTURER EMAIL ADDRESS	MANUFACTURER EMERGENCY NUMBER	OPERATION /AREA USED	DATE BROUGHT	DATE REMOVED FROM SITE
DESI PAK		DESCO	service@desco.com	1-909-627-8178	Maintenance Tasks	Apr-20	
POLYVINYL CHLORIDE/ SOLVENT CEMENT MIXTURE	109-99-9 78-93-3 108-94-1 112945-52-5	E-Z WELD	www.e-zweld.com	1-800-424-9300	Maintenance Tasks	Apr-20	
CONCRETE ACRYLIC FORTIFIER	7732-18-5	QUIKRETE® COMPANIES	www.quikrete.com	1-800-535-5053	Maintenance Tasks	Apr-20	
ULTRA EL™ SYNTHETIC ROTARY COOLANT	25619-56-1 75-56-9	INGERSOLL RAND®	www.ingersollrand.com	1-800-424-9300	Maintenance Tasks	Jan-21	
TOUCH N FOAM MAX FILL TRIPLE EXPANDING SEALANT	9016-87-9 101-68-8 25322-69-4 13674-84-5 115-10-6 75-28-5 74-98-6	DAP PRODUCTS INC.	msds@dap.com	1-800-535-5053	Maintenance Tasks	Apr-20	
SIKAFLEX CONSTRUCTION SEALANT	14808-60-7 53317-61-6 101-68-8	SIKA CORPORATION	ehs@sika-corp.com	1-800-424-9300	Maintenance Tasks	Apr-20	
PRO INDUSTRIAL™ URETHANE ALKYD ENAMEL ULTRADEEP BASE	64742-47-8 14807-96-6 1330-20-7 96-29-7 64742-48-9 108-10-1 22464-99-9 100-41-4 64742-88-7 14808-60-7 136-51-6 111-77-3	THE SHERWIN-WILLIAMS COMPANY	www.sherwin-williams.com	1-800-424-9300	Maintenance Tasks	Apr-20	
SHELL GADUS S2 V220 00	1338-24-5	STRUERS LTD	struers@struers.dk	1-800-535-5053	Maintenance Tasks	Apr-20	
LACQUER THINNER	108-88-3 67-64-1 67-56-1 108-10-1 108-65-6	LANCO MFG.CORP.	store-pr.lancopaints.com	1-800-424-9300	Maintenance Tasks	Feb-21	
100% RTV SILICONE SEALANT CONSTRUCTION & MARINE GRADE SS-887	7631-86-9 13463-67-7 7429-90-5 1333-86-4	LANCO MFG.CORP.	store-pr.lancopaints.com	1-800-424-9300	Maintenance Tasks	Apr-20	
HEAVY DUTY DEGREASER	497-19-8 1300-72-7 64-02-8 68439-46-3 66455-15-0 1310-73-2	ECOLAB INC.	www.ecolab.com	1-866-897-8061	Maintenance Tasks	Jul-20	
SHELL ROTELLA T5 10W-40	68784-26-9 68649-42-3	SHELL CANADA PRODUCTS	www.shell.ca	1-703-527-3887 1-800-424-9300	Maintenance Tasks	Apr-20	
NEVER SEEZ REGULAR GRADE	7782-42-5 7440-50-8 1314-13-2 7429-90-5	BOSTIK INC	msds@bostik-us.com	1-800-227-0332	Maintenance Tasks	Apr-20	
MYSTIK® JT-6® HI-TEMP GREASE NLGI NO. 2	64742-52-5 64742-54-7 64742-62-7 68815-49-6 64741-88-4	CITGO PETROLEUM CORPORATION	sdsvend@citgo.com	1-832-486-4700 1-800-424-9300	Maintenance Tasks	Apr-20	
GASOLINE	86290-81-5	HESS Corporation	www.hess.com	1-800-424-9300	Maintenance Tasks	Feb-21	
DOCTOR MECANICO HOME CLEANER	127087-87-0	UNIVERSAL MANUFACTURING CORP.	beatriz@libertypr.net	1-787-270-1032	Maintenance Tasks	Jan-21	
DIESEL	68476-34-6	CITGO	sdsvend@citgo.com	1-800-424-9300	Maintenance Tasks	Feb-21	
THREAD LUBRICANT	64742-52-5	CRC	www.crcindustries.com	1-800-424-9300	Maintenance Tasks	Apr-20	
STRUST HP GPK FLAT RUSTY METAL PRIMER	64742-47-8 14807-96-6 7779-90-0 13983-17-0 14808-60-7 64742-95-6 96-29-7 34590-94-8	RUST OLEUM	www.rustoleum.com	1-800-387-3625	Maintenance Tasks	Oct-20	
RUST-OLEUM ENAMEL HIGH GLOSS BLACK	64742-47-8 1333-86-4 96-29-7 64742-48-9 100-41-4 136-52-7 64742-48-9	RUST OLEUM	www.rustoleum.com	1-800-387-3625	Maintenance Tasks	Feb-21	

P501	Dispose of contents/container in accordance with local, regional and national regulations.
P201	Obtain special instructions before use.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P321	For specific treatment see label.

GHS SDS PRECAUTIONARY STATEMENTS

P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P363	Wash contaminated clothing before reuse.

3. Composition / Information on Ingredients**HAZARDOUS SUBSTANCES**

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.%</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Hydrotreated Light Distillate	64742-47-8	47	GHS08	H304
Carbon Black	1333-86-4	2.3	Not Available	Not Available
Methyl Ethyl Ketoxime	96-29-7	0.4	GHS05-GHS06	H302-312-317-318-331
Naphtha, Hydrotreated Heavy	64742-48-9	0.3	GHS08	H304-340-350
Ethylbenzene	100-41-4	0.2	GHS02-GHS07-GHS08	H225-304-332-351-373
Cobalt 2-Ethylhexanoate	136-52-7	0.2	Not Available	Not Available
Naphtha, Hydrotreated Heavy	64742-48-9	0.1	GHS08	H304

4. First-Aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: If swallowed, get medical attention.

5. Fire-Fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: No unusual fire or explosion hazards noted. Closed containers may explode when exposed to extreme heat due to buildup of steam. Keep containers tightly closed. Combustible liquid and vapor.

SPECIAL FIREFIGHTING PROCEDURES: Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

Special Fire and Explosion Hazard (Combustible Dust): No Information

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only with adequate ventilation. Follow all SDS and label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Avoid excess heat.

Advice on Safe Handling of Combustible Dust: No Information

8. Exposure Controls / Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Hydrotreated Light Distillate	64742-47-8	50.0	N.E.	N.E.	N.E.	N.E.
Carbon Black	1333-86-4	5.0	3 mg/m ³	N.E.	3.5 mg/m ³	N.E.
Methyl Ethyl Ketoxime	96-29-7	1.0	10 ppm	N.E.	N.E.	N.E.
Naphtha, Hydrotreated Heavy	64742-48-9	1.0	N.E.	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	1.0	20 ppm	N.E.	100 ppm	N.E.
Cobalt 2-Ethylhexanoate	136-52-7	1.0	N.E.	N.E.	N.E.	N.E.
Naphtha, Hydrotreated Heavy	64742-48-9	1.0	N.E.	N.E.	N.E.	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

Engineering Measures for Combustible Dust: No Information

9. Physical and Chemical Properties

Appearance:	Liquid	Physical State:	Liquid
Odor:	Solvent Like	Odor Threshold:	N.E.
Specific Gravity:	0.912	pH:	N.A.
Freeze Point, °C:	N.D.	Viscosity:	N.D.
Solubility in Water:	Negligible	Partition Coefficient, n-octanol/ water:	N.D.
Decomposition Temp., °C:	N.D.	Explosive Limits, vol%:	0.5 - 6.6
Boiling Range, °C:	136 - 3,000	Flash Point, °C:	42
Flammability:	Supports Combustion	Auto-Ignition Temp., °C:	N.D.
Evaporation Rate:	Slower than Ether	Vapor Pressure:	N.D.
Vapor Density:	Heavier than Air		

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

Conditions to Avoid: No Information

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

11. Toxicological Information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Substance causes moderate eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Irritating to the nose, throat and respiratory tract. Harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5000 mg/L Rat
1333-86-4	Carbon Black	>15400 mg/kg Rat	N.E.	N.E.
96-29-7	Methyl Ethyl Ketoxime	930 mg/kg Rat	1100 mg/kg Rabbit	>4.83 mg/L Rat
64742-48-9	Naphtha, Hydrotreated Heavy	>6000 mg/kg Rat	>3160 mg/kg Rabbit	N.E.
100-41-4	Ethylbenzene	3500 mg/kg Rat	15400 mg/kg Rabbit	17.4 mg/L Rat
136-52-7	Cobalt 2-Ethylhexanoate	N.E.	>5000 mg/kg Rabbit	N.E.
64742-48-9	Naphtha, Hydrotreated Heavy	>6000 mg/kg Rat	>3160 mg/kg Rabbit	N.E.

N.E. - Not Established

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Do not incinerate closed containers. Dispose of material in accordance to local, state, and federal regulations and ordinances.

14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	1263	1263	N.A.
Proper Shipping Name:	Not Regulated	Paint	Paint	Not Regulated
Hazard Class:	N.A.	3	3	N.A.
Packing Group:	N.A.	III	III	N.A.
Limited Quantity:	No	Yes, >5L No	Yes, >5L No	No

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Flammable (gases, aerosols, liquids, or solids), Carcinogenicity, Respiratory or Skin Sensitization, Germ cell mutagenicity

SARA Section 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethylbenzene	100-41-4
Cobalt 2-Ethylhexanoate	136-52-7

Toxic Substances Control Act

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12(b) components exist in this product.

U.S. State Regulations:

California Proposition 65

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

16. Other Information

HMIS RATINGS

Health: 2* Flammability: 2 Physical Hazard: 0 Personal Protection: X

NFPA RATINGS

Health: 2 Flammability: 2 Instability: 0

Volatile Organic Compounds: 448 g/L

SDS REVISION DATE: 11/13/2020

REASON FOR REVISION:

Legend: N.A. - Not Applicable, N.D. - Not Determined, N.E. - Not Established

The manufacturer believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. The manufacturer makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Safety Data Sheet



1. Identification

Product Name:	STRUST HP 6PK FLAT RUSTY METAL PRIMER	Revision Date:	1/25/2018
Product Identifier:	7769730	Supersedes Date:	8/24/2016
Product Use/Class:	Primer/ Alkyd		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		
Emergency Telephone:	24 Hour Hotline: 847-367-7700		

2. Hazard Identification

Classification

Symbol(s) of Product



Signal Word

Danger

Possible Hazards

10% of the mixture consists of ingredient(s) of unknown acute toxicity.

GHS HAZARD STATEMENTS

Carcinogenicity, category 1B	H350	May cause cancer.
Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Germ Cell Mutagenicity, category 1B	H340	May cause genetic defects.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	For specific treatment see label
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P370+P378	In case of fire: Use alcohol film forming foam, carbon dioxide, dry chemical, dry sand to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local, regional and national regulations.

GHS SDS PRECAUTIONARY STATEMENTS

P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P363	Wash contaminated clothing before reuse.

3. Composition / Information On Ingredients

HAZARDOUS SUBSTANCES

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.% Range</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Hydrotreated Light Distillate	64742-47-8	25-50	GHS08	H304
Hydrous Magnesium Silicate	14807-96-6	2.5-10	Not Available	Not Available
Zinc Phosphate	7779-90-0	1.0-2.5	Not Available	Not Available
Wollastonite	13983-17-0	1.0-2.5	Not Available	Not Available

Crystalline Silica / Quartz	14808-60-7	1.0-2.5	Not Available	Not Available
Solvent Naphtha, Light Aromatic	64742-95-6	0.1-1.0	GHS07-GHS08	H304-332-340-350
Methyl Ethyl Ketoxime	96-29-7	0.1-1.0	GHS05-GHS06	H302-312-317-318-331
Dipropylene Glycol Monomethyl Ether	34590-94-8	<0.1	Not Available	Not Available

4. First-Aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention. If swallowed, get medical attention.

5. Fire-Fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may explode when exposed to extreme heat due to buildup of steam. Keep containers tightly closed. Combustible liquid and vapor. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

Special Fire and Explosion Hazard (Combustible Dust): No Information

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only with adequate ventilation. Follow all SDS and label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing. Avoid contact with eyes.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Keep away from heat, sparks, flame and sources of ignition. Keep container closed when not in use. Avoid excess heat.

Advice on Safe Handling of Combustible Dust: No Information

8. Exposure Controls / Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Hydrotreated Light Distillate	64742-47-8	30.0	N.E.	N.E.	N.E.	N.E.
Hydrous Magnesium Silicate	14807-96-6	10.0	2 mg/m3	N.E.	N.E.	N.E.
Zinc Phosphate	7779-90-0	5.0	N.E.	N.E.	N.E.	N.E.
Wollastonite	13983-17-0	5.0	1 mg/m3	N.E.	N.E.	N.E.
Crystalline Silica / Quartz	14808-60-7	5.0	0.025 mg/m3	N.E.	50 µg/m3	N.E.
Solvent Naphtha, Light Aromatic	64742-95-6	1.0	N.E.	N.E.	N.E.	N.E.
Methyl Ethyl Ketoxime	96-29-7	1.0	10 ppm	N.E.	N.E.	N.E.

Dipropylene Glycol Monomethyl Ether	34590-94-8	0.1	100 ppm	150 ppm	100 ppm	N.E.
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PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications. Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

Engineering Measures for Combustible Dust: No Information

9. Physical and Chemical Properties

Appearance:	Liquid	Physical State:	Liquid
Odor:	Solvent Like	Odor Threshold:	N.E.
Relative Density:	1.376	pH:	N.A.
Freeze Point, °C:	N.D.	Viscosity:	N.D.
Solubility in Water:	Slight	Partition Coefficient, n-octanol/water:	N.D.
Decomposition Temp., °C:	N.D.	Explosive Limits, vol%:	1.0 - 7.0
Boiling Range, °C:	100 - 537	Flash Point, °C:	38
Flammability:	Supports Combustion	Auto-ignition Temp., °C:	N.D.
Evaporation Rate:	Slower than Ether	Vapor Pressure:	N.D.
Vapor Density:	Heavier than Air		

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalis.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological Information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes eye irritation. Substance causes moderate eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation. May cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. May cause headaches and dizziness. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Irritating to the nose, throat and respiratory tract. Harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated repeated and prolonged occupational

overexposure to solvents with permanent brain and nervous system damage. Contains Calcium Silicate (Wollastonite), which is an IARC 3 Agent "unclassifiable as to carcinogenicity to humans" via inhalation. Inhalation exposure to Calcium Silicate is not anticipated through brush application nor normal use. Calcium Silicate is NOT classified as a carcinogen by NIOSH, ACGIH, NTP nor OSHA.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5000 mg/L Rat
14807-96-6	Hydrous Magnesium Silicate	6000	N.E.	30
7779-90-0	Zinc Phosphate	>5000 mg/kg Rat	N.E.	N.E.
14808-60-7	Crystalline Silica / Quartz	5500 mg/kg Rat	5500	100 mg/L
64742-95-6	Solvent Naphtha, Light Aromatic	8400 mg/kg Rat	>2000 mg/kg Rabbit	N.E.
96-29-7	Methyl Ethyl Ketoxime	930 mg/kg Rat	1100 mg/kg Rabbit	>4.8 mg/L Rat
34590-94-8	Dipropylene Glycol Monomethyl Ether	5350 mg/kg Rat	9500 mg/kg Rabbit	N.E.

N.E. - Not Established

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Do not incinerate closed containers. Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	1263	1263	N.A.
Proper Shipping Name:	Not Regulated	Paint	Paint	Not Regulated
Hazard Class:	N.A.	3	3	N.A.
Packing Group:	N.A.	III	III	N.A.
Limited Quantity:	No	Yes, >5L No	Yes, >5L No	No

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

No Information

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Zinc Phosphate	7779-90-0

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12(b) components exist in this product.

16. Other Information**HMIS RATINGS**

Health: 2* Flammability: 2 Physical Hazard: 0 Personal Protection: X

NFPA RATINGS

Health: 2 Flammability: 2 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 421

SDS REVISION DATE: 1/25/2018

REASON FOR REVISION: Product Composition Changed
Substance and/or Product Properties Changed in Section(s):
02 - Hazard Identification
15 - Regulatory Information
16 - Other Information
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

SAFETY DATA SHEET

14010

Section 1. Identification

Product name : ALL-METAL® ALUMINUM FILLED AUTOMOTIVE COMPOUND
Product code : 14010
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : U.S. CHEMICAL & PLASTICS
600 Nova Dr. S.E.
Massillon, OH 44646
USA

Emergency telephone number of the company : (888) 345-5732
Product Information Telephone Number : (800) 845-2000
Regulatory Information Telephone Number : (216) 566-2902
Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION (Fertility) - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs, lungs) - Category 1
ASPIRATION HAZARD - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 9.6%

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 29%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 9.6%

GHS label elements

Section 2. Hazards identification

Hazard pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Harmful if inhaled.

Causes serious eye irritation.
Causes skin irritation.

May cause an allergic skin reaction.

May cause cancer.

May damage fertility.

Suspected of damaging the unborn child.

May be fatal if swallowed and enters airways.

Causes damage to organs through prolonged or repeated exposure. (hearing organs, lungs)

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response

: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED:

Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR PROFESSIONAL USE ONLY. This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

Hazards not otherwise classified

: None known.

Public

Section 3. Composition/Information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Styrene	≥10 - <20	100-42-5
Talc	≥10 - ≤25	14807-96-6
Magnesium Carbonate	≤10	546-93-0
Aluminum	≤10	7429-90-5
Aluminum	≤3	7429-90-5
Epoxy Polymer	≤3	1675-54-3
Cobalt 2-Ethylhexanoate	≤0.3	136-52-7
Cobalt Neodecanoate	≤0.3	27253-31-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Harmful if inhaled.

Date of issue/Date of revision

: 3/5/2020

Date of previous issue

: 2/20/2020

Version : 3

3/16

14010

ALL-METAL® ALUMINUM FILLED AUTOMOTIVE COMPOUND

SHW-85-NA-GHS-US

Section 4. First aid measures

- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

- Specific treatments** : No specific treatment.

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.

- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical

- : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products

- : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

[Occupational exposure limits \(OSHA United States\)](#)

Ingredient name	CAS #	Exposure limits
Styrene	100-42-5	<p>ACGIH TLV (United States, 3/2019). TWA: 20 ppm 8 hours. STEL: 40 ppm 15 minutes.</p> <p>OSHA PEL Z2 (United States, 2/2013). TWA: 100 ppm 8 hours. CEIL: 200 ppm AMP: 600 ppm 5 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 50 ppm 10 hours. TWA: 215 mg/m³ 10 hours. STEL: 100 ppm 15 minutes. STEL: 425 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 2 mg/m³ 10 hours. Form: Respirable fraction</p> <p>ACGIH TLV (United States, 3/2019). TWA: 2 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 10/2016). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 10/2016). TWA: 15 mg/m³ 8 hours. Form: Total dust fraction</p> <p>NIOSH REL (United States, 10/2016). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction</p> <p>ACGIH TLV (United States, 3/2019). TWA: 10 mg/m³ 10 hours. Form: Total fraction</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 10/2016). TWA: 1 mg/m³ 8 hours. Form: Respirable fraction</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³, (as Al) 8 hours. Form: Respirable fraction</p>
Talc	14807-96-6	
Magnesium Carbonate	546-93-0	
Aluminum	7429-90-5	

Section 8. Exposure controls/personal protection

Aluminum	7429-90-5	TWA: 15 mg/m ³ , (as Al) 8 hours. Form: Total dust NIOSH REL (United States, 10/2016). TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ , (as Al) 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ , (as Al) 8 hours. Form: Total dust ACGIH TLV (United States, 3/2019). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction None. ACGIH TLV (United States, 3/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m ³ , (as Co) 8 hours. ACGIH TLV (United States, 3/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m ³ , (as Co) 8 hours.
bis-[4-(2,3-epoxypropoxy)phenyl]propane Cobalt 2-Ethylhexanoate	1675-54-3 136-52-7	
Cobalt Neodecanoate	27253-31-2	

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Vinyl benzene	100-42-5	CA Alberta Provincial (Canada, 6/2018). 15 min OEL: 40 ppm 15 minutes. 15 min OEL: 170 mg/m ³ 15 minutes. 8 hrs OEL: 85 mg/m ³ 8 hours. 8 hrs OEL: 20 ppm 8 hours. CA British Columbia Provincial (Canada, 5/2019). TWA: 50 ppm 8 hours. STEL: 75 ppm 15 minutes. CA Ontario Provincial (Canada, 1/2018). TWA: 35 ppm 8 hours. STEL: 100 ppm 15 minutes. CA Quebec Provincial (Canada, 1/2014). Absorbed through skin. TWA _{EV} : 50 ppm 8 hours. TWA _{EV} : 213 mg/m ³ 8 hours. STEV: 100 ppm 15 minutes. STEV: 426 mg/m ³ 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 40 ppm 15 minutes. TWA: 20 ppm 8 hours. CA British Columbia Provincial (Canada, 5/2019). TWA: 2 mg/m ³ 8 hours. Form: Respirable TWA: 0.1 f/cc 8 hours. CA Quebec Provincial (Canada, 1/2014). TWA _{EV} : 3 mg/m ³ 8 hours. Form: Respirable dust. CA Ontario Provincial (Canada, 1/2018). TWA: 2 mg/m ³ 8 hours. Form: Respirable fraction.
talco (none asbestiform)	14807-96-6	

Section 8. Exposure controls/personal protection

Cobalt 2-Ethylhexanoate	136-52-7	<p>TWA: 2 f/cc 8 hours. CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 2 mg/m³ 8 hours. Form: Respirable particulate CA Saskatchewan Provincial (Canada, 7/2013). TWA: 2 mg/m³ 8 hours. Form: respirable fraction CA Ontario Provincial (Canada, 1/2018). TWA: 0.02 mg/m³, (as Co) 8 hours. Form: Inorganic CA British Columbia Provincial (Canada, 5/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co, Total) 8 hours. CA Quebec Provincial (Canada, 1/2014). Skin sensitizer. TWAEV: 0.02 mg/m³, (as Co) 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 0.06 mg/m³, (measured as Co) 15 minutes. TWA: 0.02 mg/m³, (measured as Co) 8 hours. CA Ontario Provincial (Canada, 1/2018). TWA: 0.02 mg/m³, (as Co) 8 hours. Form: Inorganic CA British Columbia Provincial (Canada, 5/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co, Total) 8 hours. CA Quebec Provincial (Canada, 1/2014). Skin sensitizer. TWAEV: 0.02 mg/m³, (as Co) 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 0.06 mg/m³, (measured as Co) 15 minutes. TWA: 0.02 mg/m³, (measured as Co) 8 hours.</p>
Cobalt Neodecanoate	27253-31-2	<p>CA Ontario Provincial (Canada, 1/2018). TWA: 0.02 mg/m³, (as Co) 8 hours. Form: Inorganic CA British Columbia Provincial (Canada, 5/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co, Total) 8 hours. CA Quebec Provincial (Canada, 1/2014). Skin sensitizer. TWAEV: 0.02 mg/m³, (as Co) 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 0.06 mg/m³, (measured as Co) 15 minutes. TWA: 0.02 mg/m³, (measured as Co) 8 hours.</p>

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
Styrene	100-42-5	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 20 ppm 8 hours. STEL: 40 ppm 15 minutes.
N,N-dimethylaniline	121-69-7	NOM-010-STPS-2014 (Mexico, 4/2016). Absorbed through skin. TWA: 5 ppm 8 hours. STEL: 10 ppm 15 minutes.
Cobalt 2-Ethylhexanoate	136-52-7	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 0.02 mg/m ³ , (as Co) 8 hours.
Cobalt Neodecanoate	27253-31-2	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 0.02 mg/m ³ , (as Co) 8 hours.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

- Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point/boiling range** : 145°C (293°F)
- Flash point** : Closed cup: 29°C (84.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 0.49 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.

Section 9. Physical and chemical properties

- Lower and upper explosive (flammable) limits** : Lower: 1.1%
Upper: 6.1%
- Vapor pressure** : 0.57 kPa (4.3 mm Hg) [at 20°C]
- Vapor density** : 3.6 [Air = 1]
- Relative density** : 1.4
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)
- Molecular weight** : Not applicable.
- Aerosol product**
- Heat of combustion** : 9.736 kJ/g

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Styrene	LC50 Inhalation Gas. LC50 Inhalation Vapor	Rat Rat	2770 ppm 11800 mg/m ³	4 hours 4 hours
Magnesium Carbonate bis-[4-(2,3-epoxypropoxy)phenyl]propane	LD50 Oral	Rat	2650 mg/kg	-
	LD50 Oral	Rat	8000 mg/kg	-
	LD50 Dermal	Rabbit	20 g/kg	-
Cobalt 2-Ethylhexanoate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	1.22 g/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Styrene	Eyes - Mild irritant	Human	-	50 ppm	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
Talc	Eyes - Severe irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
bis-[4-(2,3-epoxipropoxy) phenyl]propane	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Styrene	-	2A	Reasonably anticipated to be a human carcinogen.
Talc	-	3	-
bis-[4-(2,3-epoxipropoxy) phenyl]propane	-	3	-
Cobalt 2-Ethylhexanoate	-	2B	Reasonably anticipated to be a human carcinogen.
Cobalt Neodecanoate	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Styrene	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Styrene Talc	Category 1 Category 1	Not determined Inhalation	hearing organs lungs

Aspiration hazard

Name	Result
Styrene	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral	13665.03 mg/kg
Inhalation (gases)	14283.82 ppm
Inhalation (vapors)	60.85 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Styrene	Acute EC50 1400 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 720 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 4700 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 52 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 4020 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Aluminum	Chronic NOEC 63 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 38000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 120 µg/l Fresh water	Fish - Oncorhynchus mykiss - Embryo	96 hours
Aluminum	Chronic NOEC 9 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Acute LC50 38000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 120 µg/l Fresh water	Fish - Oncorhynchus mykiss - Embryo	96 hours
	Chronic NOEC 9 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Styrene	-	13.49	low
Cobalt 2-Ethylhexanoate	-	15600	high
Cobalt Neodecanoate	-	15600	high

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1866	UN1866	UN1866	UN1866	UN1866
UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION
Transport hazard class(es)	3 	3 	3 	3 	3 
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).	-	-	<u>Emergency Schedules</u> F-E, S-E
	<u>ERG No.</u> 127	<u>ERG No.</u> 127	<u>ERG No.</u> 127		

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according : Not available.

to Annex II of MARPOL and the IBC Code

Section 16. Other information

Date of printing : 3/5/2020
Date of issue/Date of revision : 3/5/2020
Date of previous issue : 2/20/2020
Version : 3

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

[Notice to reader](#)

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

Public

Date of issue/Date of revision

: 3/5/2020

Date of previous issue

: 2/20/2020

Version : 3

16/16

14010

ALL-METAL® ALUMINUM FILLED AUTOMOTIVE
COMPOUND

SHW-85-NA-GHS-US

Section 14. Transport information

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists

: Australia inventory (AICS): Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	* 3
Flammability	3
Physical hazards	3

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs, lungs) - Category 1 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

History

Date of issue/Date of revision	: 3/5/2020	Date of previous issue	: 2/20/2020	Version	: 3	15/16
14010	ALL-METAL® ALUMINUM FILLED AUTOMOTIVE COMPOUND					SHW-85-NA-GHS-US



CEMENT & CONCRETE PRODUCTS™

A3: Water Based Products

SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
5 Concourse Parkway, Suite 1900
Atlanta, GA 30328

Emergency Telephone Number
INFOTRAC (800) 535-5053
Information Telephone Number
(800) 282-5828

SDS A3
Revision: Dec-19

QUIKRETE® Product Name	Code #
CONCRETE ACRYLIC FORTIFIER	8610
CONCRETE ACRYLIC FORTIFIER, CONCENTRATED	8611

PRODUCT USE: LATEX ADDITIVE FOR MODIFYING PORTLAND CEMENT-BASED PRODUCTS

SEE MOST CURRENT REVISION OF THIS DOCUMENT AT WWW.QUIKRETE.COM.

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Acrylic polymer

2.1 Classification of the substance or mixture

Eye Irritation – Category 2B

Skin Sensitization – Category 1B

Specific Target Organ Toxicity – Single Exposure- Category 3

Acute Oral Toxicity – Category 4

2.2a Signal word Warning

2.2b Hazard Statements

Causes eye irritation

May cause an allergic skin reaction

May cause respiratory, eye or gastrointestinal irritation.

Prolonged or repeated exposure may cause skin irritation

Harmful if swallowed.

SDS A3

QUIKRETE Companies, LLC

12/17/2019

QUIKRETE[®]**CEMENT & CONCRETE PRODUCTS™****2.2c Pictograms****2.2d Precautionary statements**

Do not handle until all safety precautions have been read and understood.
 Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.
 Do not eat, drink or smoke when using this product.
 Wash thoroughly after handling.
 Use only in a well-ventilated area.
 Do not breathe vapors.

If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 If swallowed: Rinse mouth, do NOT induce vomiting.
 If significant skin irritation or rash occurs: get medical advice or attention.

Immediately seek medical advice or attention if symptoms are significant or persist.

Store in a well-ventilated place. Keep container tightly closed.
 Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information

2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components**CAS No.****% by Weight**

SDS A3

QUIKRETE Companies, LLC

12/17/2019


CEMENT & CONCRETE PRODUCTS™

Polymeric Resin	Not Hazardous	30-60
Water	7732-18-5	40-70

Composition ranges are provided due to batch-to-batch variability.
None of the constituents of this product are of unknown toxicity.

SECTION IV – FIRST AID MEASURES

General information:

Immediately remove any clothing soiled by the product.

After inhalation: In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

easy to do. Continue rinsing.

After swallowing: Treat symptomatically and supportively. Get medical attention. Never give anything by mouth to an unconscious person.

Acute/Delayed Symptoms: Immediately seek medical advice or attention if symptoms are significant or persist.

SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: This is a water-based product and presents no particular fire or explosion hazard. Dry polymer film will burn. Product contains low levels of organic volatiles which may be emitted at elevated temperatures.

5.2 Suitable extinguishing agents: Treat for surrounding material

5.3 Special hazards arising from the substance or mixture: None

5.3a Products of Combustion: None

5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear protective equipment (See section VIII). Keep unprotected persons away.

Environmental precautions: Do not allow to enter sewers/ surface or ground water.



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Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Handling

Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace. Wear appropriate PPE (See section 8).

Information about protection against explosions and fires: No special measures required.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed.

Specific end use(s): No further relevant information available

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M ³	TLV (ACGIH) mg/M ³
None			

8.2 Exposure Controls

Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment



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Protection of hands:

Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact.

Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

Respiratory protection:

Not required under typical use

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance	Form: Liquid Color: White Odor: Slight Ammonia
pH-value at 20°C (68 °F):	9.5-10.0
Boiling point/Boiling range:	>212°F (>100°C)
Auto igniting:	Product is not self-igniting.
Vapor pressure at 21°C (70°F)	<1 (water)
Density at 25°C (77 °F):	1.0 to 1.2
Solubility in / Miscibility with Water:	Miscible
VOC content:	18 g/L VOC

SECTION X – STABILITY AND REACTIVITY

Thermal decomposition / conditions to be avoided: Strong oxidizers, materials that react with water

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: None

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Inhalation: May cause respiratory tract irritation.

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Skin contact: Causes skin irritation.

Eye Contact: Causes eye irritation.

Ingestion: May cause gastrointestinal irritation

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure**Short Term**

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Causes eye irritation.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.

Aspiration Hazard: Not available

Long Term

Carcinogenicity: Not available

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 2) Prolonged or repeated exposure may cause skin irritation.

Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential: No further relevant information available.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation:

Do not allow product to reach waterways or storm sewers. Disposal must be made in accordance with local, state and federal regulations.



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Uncleaned packaging

Recommendation: Disposal must be made in accordance with local, state and federal regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated
Packing Group (if applicable)	Not Regulated	Not Regulated

14.1 Environmental hazards:

Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code

Not available

14.3 Special precautions for user

Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical

Canada

WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information

SARA 302/311/312/313 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

RCRA: Not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

**CEMENT & CONCRETE PRODUCTS™**

Emergency Planning and Community Right to Know Act (SARA Title III): Not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

NTP: Not classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Not listed.

15.3 State Right to Know Laws**California Prop. 65 Components**

This product does not contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.

TSCA No.: All constituents are listed in the TSCA inventory.

SECTION XVI – OTHER INFORMATION

Last Updated: December 17, 2019

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by The QUIKRETE Companies, LLC

End of SDS



Public
SAFETY DATA SHEET

1. Identification

Product identifier	Thread Lubricant
Other means of identification	
Product code	SL35924, SL35925
Recommended use	General purpose thread lubricant
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	Not available.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated heavy naphthenic		64742-52-5	90 - 100

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Wash off with plenty of water. Get medical attention if irritation develops and persists.

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	None known.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Sweep up or vacuum up spillage and collect in suitable container for disposal. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewer, basements or confined areas.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Use care in handling/storage. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS). Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	PEL	5 mg/m ³	Mist.
		2000 mg/m ³ 500 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m ³	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	Ceiling	1800 mg/m ³	
	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Exposure guidelines	Occupational Exposure Limits are not relevant to the current physical form of the product.		
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.		
Individual protection measures, such as personal protective equipment			
Eye/face protection	Wear safety glasses with side shields (or goggles).		
Skin protection			
Hand protection	Wear protective gloves such as: Neoprene. Nitrile.		
Other	Wear suitable protective clothing.		
Respiratory protection	If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.		
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.		
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.		

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Grease.
Color	Amber.
Odor	Mild petroleum.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	680 °F (360 °C) estimated
Flash point	334 °F (167.8 °C) Cleveland Open Cup
Evaporation rate	Very slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	> 5 (air = 1)
Relative density	0.9
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	500 °F (260 °C) estimated
Decomposition temperature	Not available.

Viscosity (kinematic)	Not available.
Percent volatile	> 87 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Health injuries are not known or expected under normal use.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Prolonged or excessive inhalation may cause respiratory tract irritation.

Information on toxicological effects

Acute toxicity	Not available.
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Product	Species	Test Results
Thread Lubricant		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2150.5376 mg/kg estimated
<i>Oral</i>		
LD50	Rat	5376.3442 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not likely, due to the form of the product.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Product	Species		Test Results
Thread Lubricant			
Aquatic			
Crustacea	EC50	Daphnia	1075.2688 mg/l, 48 hours estimated
Fish	LC50	Fish	5376.3442 mg/l, 96 hours estimated
Components	Species		Test Results
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1000 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5000 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	Not readily biodegradable.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	This product is not a RCRA hazardous waste (See 40 CFR Part 261.20 – 261.33). Empty containers may be recycled. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.
Hazardous waste code	Not regulated.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
SARA 304 Emergency release notification	Not regulated.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
CERCLA Hazardous Substances: Reportable quantity	Not listed. Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Food and Drug Administration (FDA)** Not regulated.**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

Section 311/312 Hazard categories Immediate Hazard - No
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance No**US state regulations****US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Massachusetts RTK - Substance List

None.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

None.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations**EPA****VOC content (40 CFR 51.100(s))** 100 %**Consumer products (40 CFR 59, Subpt. C)** Not regulated**State****Consumer products** Not regulated**VOC content (CA)** < 0.1 %**VOC content (OTC)** < 0.1 %**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	01-14-2015
Prepared by	Allison Cho
Version #	01
Further information	Not available.
HMIS® ratings	Health: 1 Flammability: 1 Physical hazard: 0 Personal protection: B
NFPA ratings	Health: 1 Flammability: 1 Instability: 0

NFPA ratings**Disclaimer**

CRC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

Desiccant is a drying agent used to lower the moisture content of air inside a closed space, such as a Moisture Barrier Bag (ANSI/ESD S11.4 Level 1 and Level 2 Static Control Bags). Desiccant is packaged in fractional units in order to facilitate its usage with a variety of bag sizes. One full "unit" of packaged desiccant will absorb the following quantities of water at equilibrium with air at 77°F (25°C): 3.00 grams @ 20% rH and 6.00 grams @ 40% rH, when tested to MIL-D-3464.

In order to provide a complete moisture barrier packaging assembly, desiccant must be inserted into the bag, prior to having the bag vacuum sealed. The recommended amount of desiccant is dependent on the interior surface area of the bag to be used. The table is a reference indicating recommended minimum amounts of desiccant that should be used with [Moisture Barrier Bags](#).



13843 & 13844

13840 & 13850

"...it is important to take possible temperature exposure into account when shipping electronic parts. It is particularly important to consider what happens to the interior of a package if the environment has high humidity. If the temperature varies across the dew point of the established interior environment of the package, condensation may occur. The interior of a package should either contain desiccant or the air should be evacuated from the package during the sealing process. The package itself should have a low WVTR." (ESD Handbook ESD TR20.20 section 5.4.3.2.2)

INTERIOR BAG SURFACE AREA*	NUMBER OF DESICCANT UNITS		
	**MIH <20%	MIH <30%	MIH < 40%
100 sq. in.	1.5	1.0	1.0
130 sq. in.	2.0	1.5	1.0
160 sq. in.	2.0	1.5	1.5
200 sq. in.	2.5	2.0	1.5
240 sq. in.	3.0	2.0	1.5
290 sq. in.	4.0	2.5	2.0
340 sq. in.	4.5	3.0	2.5
390 sq. in.	5.0	3.5	2.5
450 sq. in.	5.5	4.0	3.0
510 sq. in.	6.5	4.5	3.5
580 sq. in.	7.5	5.0	4.0
650 sq. in.	8.0	5.5	4.0
720 sq. in.	9.0	6.0	4.5

Table for recommended desiccant usage. Information taken out of EIA-583, Table 1, Page 8.

*To measure interior bag surface area, multiply length x width x 2

**MIH = Maximum Interior Humidity (%)

Desiccant paks are available from Desco in the following unit sizes and standard packages:

Item #	Unit Size	Std. Package	Dimensions
13840	1/2 unit	Box of 700	1.5" x 3"
13843	1 unit	Box of 450	2" x 4"
13844	1 unit	Pail of 300	2" x 4"
13850	1/2 unit	Pail of 550	1.5" x 3"

As packaged Desco 13850 meets MIL-D-3464, Type II and is on the QPL (Qualified Product List). Click [here](#) to see Desi-Pak (supplier Cage Code 00334).

Fill Contents: Activated Clay
Paper: Tyvek
Warranty: 3 Years from date of manufacture



Made in the United States of America

Specifications and procedures subject to change without notice.

Desiccant Pak		
DESCO WEST: 3651 WALNUT AVE., CHINO, CA 91710 WEBSITE: Desco.com PHONE (909) 627-8178 DESCO EAST: ONE COLGATE WAY, CANTON, MA 02021-1407 PHONE (781) 821-8370	DRAWING NUMBER 13850	DATE: December 2013



DESCO SAFETY DATA SHEET

May be used to comply with ANSI Z400.1-2004, and Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012). Standards must be consulted for specific requirements.

Revision Date: 2018-02-27

SECTION 1 — IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifiers**

Product Name:	Desi Pak
EC No.:	None
REACH Registration No.:	None
CAS No.:	None

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use:	Desiccant
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1.3 Details of the supplier of the safety data sheet

Supplier:	Desco 3651 Walnut Ave Chino, CA 91710 (909) 627-8178
Email Address:	Service@Desco.com

1.4 Emergency telephone number

Emergency Number:	(909) 627-8178
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SECTION 2 — HAZARDS IDENTIFICATION**2.1 Classification of substance or mixture**

No reportable hazardous components as defined by the Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012).

2.2 Label elements

Not a dangerous substance according to GHS.

2.3 Other hazards

None known.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

No reportable hazardous components as defined by the Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012).

SECTION 4 — FIRST AID MEASURES**4.1 Description of first aid measures**

General advice	No known delayed effects. Consult a physician for all exposures except for minor instances.
If inhaled	INHALATION: If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention. Get medical attention if cough and other symptoms develop. If you feel unwell, seek medical advice (show the label where possible).
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available.
In case of eye contact	Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

If swallowed Normally not needed. If whole canisters or sachets are ingested, call a physician or your local Poison Control Center (1-800-222-1222 in the United States).

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

SECTION 5 — FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media The product itself does not burn.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray jet
Dry powder
Foam
Carbon dioxide (CO₂)

Unsuitable Extinguishing Media No restrictions

5.2 Special hazards arising from the substance or mixture

The product is not flammable.
Does not sustain combustion.
No hazardous decomposition products are known.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
Special sliding risk through leaking of spilled product in connection with water.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Avoid dust formation.
Evacuate personnel to safe areas.
Avoid contact with skin, eyes and clothing.
Wear personal protective equipment.
Avoid breathing dust.
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Special sliding risk through leaking of spilled product in connection with water.
Wearing appropriate personal protective equipment, contain spill and collect into a suitable container.
No special precautions required.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Pick up and transfer to properly labelled containers.
If product is released from trucks in roads, place signposts and remove the spill using vacuum cleaning systems.

6.4 Reference to other sections

See SECTION 8 and SECTION 13.

SECTION 7 — HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Use of proper hygiene practices in the workplace is recommended.
Hygiene measures Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Minimize airborne dust generation and prevent wind dispersal during loading and unloading. Keep containers closed and store packaged products so as to prevent accidental bursting.
Advice on storage compatibility	No conditions to be specially mentioned.
Storage stability	Store in a dry place.
7.3 Specific end uses	Not relevant

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION**8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Engineering measures	Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.
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8.2 Exposure controls**Personal protective equipment**

Respiratory protection	Use local exhaust if dusting occurs. Good general ventilation is adequate in the absence of dusts.
Hand protection	Wear protective gloves. Wash thoroughly after handling.
Eye protection	Safety glasses with side-shields.
Skin and Body protection	Wear suitable protective equipment.
Hygiene measures	Wash hands before breaks and at the end of workday.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance	lumpy, granular, powder
Color:	bright to earthy
Odor:	None
Odor Threshold:	Not determined
pH:	6.0 - 11.0 (20°C)
Melting point/range:	Method: aqueous suspension > 450°C Method: EU A.1
Boiling point/boiling range:	not applicable (solid with a melting point > 450°C)
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability (solid, gas):	Does not ignite Method: EU A.1
Self-ignition:	Method: 92/69/EEC, A.6. No relative self-ignition temperature below 400°C
Upper explosion limit:	Not applicable
Lower explosive limit:	Non explosive (void of any chemical structures commonly associated with explosive properties)
Vapor pressure:	not applicable (solid with a melting point > 450°C)
Vapor density relative to air:	Non applicable
Density:	2.6 g/cm ³
Bulk density:	500 - 1,100 kg/m ³
Solubility (Water):	< 0.9 g/l (20°C) Method: Tested according to Directive 92/69/EEC.
Partition coefficient (n-octanol/water):	No applicable inorganic
Auto-ignition temperature:	Not determined
Decomposition temperature:	No decomposition if used as directed.
Viscosity (dynamic):	Not applicable
Viscosity (kinematic):	Not applicable

Oxidizing properties:

No oxidizing properties (Based on the chemical structure, the substance does not contain a surplus of oxygen or any structural groups known to be correlated with a tendency to react exothermally with combustible material).

9.2 Other information

None known.

SECTION 10 — STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Forms slippery/greasy layers with water.

10.5 Incompatible materials

Inert, not reactive. Avoid storing together with materials that may be affected by dust.

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11 — TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure

Eye contact.

Ingestion

Acute toxicity

Acute oral toxicity

LD50 (Rat): > 2 g/kg
Method: OECD Test Guideline 420

Acute inhalation toxicity

No data available

Acute dermal toxicity

No data available
Bentonite is almost insoluble and has a low absorption through the skin.

Skin corrosion/irritation

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Species: Rabbit

Method: OECD Test Guideline 405

Result: No skin irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Genotoxicity in vitro

Test Type: In vitro gene mutation study in bacteria
 Method: OECD Test Guideline 471
 Result: negative

Test Type: Chromosome aberration test in vitro
 Method: OECD Test Guideline 473
 Result: negative

Test Type: In vitro gene mutation study in mammalian cells
 Method: OECD Test Guideline 476
 Result: negative

Carcinogenicity**IARC**

Not listed

OSHA

Not listed

NTP

Not listed

Reproductive toxicity

Effects on fertility

Based on available data, the classification criteria are not met.

STOT - Single exposure

No organ toxicity observed in acute tests.

Aspiration toxicity

No aspiration toxicity classification.

Experience with human exposure

General Information

The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12 — ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)): 16 g/l
 Exposure time: 96 h
 LC50 (Marine water fish): 2.8 - 3.2 g/l
 Exposure time: 24 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202
 EC50 (Metacarcinus magister): 81.6 mg/l
 Exposure time: 96 h
 EC50 (Pandalus danae): 24.8 mg/l
 Exposure time: 96 h

Toxicity to algae

EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 100 mg/l
 Exposure time: 72 h

Plant toxicity

(Phaseolus vulgaris): 84.4 mg/kg
 Remarks: No effect on the growth was observed.
 (Zea mays): 84.4 mg/kg
 Remarks: No effect on the growth was observed.

12.2 Persistence and degradability

Biodegradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation Not relevant for inorganic substances.

12.4 Mobility in soil

Distribution among environmental compartments Medium: Soil
Bentonite is almost insoluble and thus presents a low mobility in most soils.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Additional ecological information According to experience and to the information currently available, the product has no harmful effects on the environment if used correctly as intended.

SECTION 13 — DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

RCRA - Resource Conservation and Recovery Act No -- Not as sold.

Water Code NONE

Waste from residues This product, if discarded as sold, is not a Federal RCRA hazardous waste. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Contaminated packaging No specific requirements.

SECTION 14 — TRANSPORT INFORMATION

DOT Not restricted

IATA Not restricted

IMDG Not restricted

14.1 UN Number N/A

14.2 UN proper shipping name N/A

14.3 Transport hazard class(es) N/A

14.4 Packing group N/A

14.5 Environmental hazards N/A

14.6 Special precautions for user N/A

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code N/A

SECTION 15 — REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards No SARA Hazards

SARA 313 This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.

Clean Water Act

Contains no known priority pollutants at concentrations greater than 0.1%.

The components of this product are reported in the following inventories:

TSCA	All components of this product are listed or excluded from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.
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15.2 Chemical Safety Assessment Not relevant

SECTION 16 — OTHER INFORMATION

HMIS RATING	Health 0, Flammability 0, Reactivity 0, Personal Protection B
NFPA RATING	Special Hazard: N/A, Health: 0, Flammability: 0, Instability: 0
SDS Updated	2018-02-27

Disclaimer

OTHER INFORMATION: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

SAFETY DATA SHEET

CITGO No. 2 Diesel Fuel, All Grades, Low Sulfur



Section 1. Identification

GHS product identifier	: CITGO No. 2 Diesel Fuel, All Grades, Low Sulfur
Chemical name	: Fuels, diesel, No 2
Synonyms	: No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons
Material uses	: Fuel.
Code	: Various
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number (with hours of operation)	: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Flammable liquid and vapor.
Harmful if inhaled.
Causes skin and eye irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS))
Toxic to aquatic life with long lasting effects.

Precautionary statements

General

: Diesel engine exhaust can cause upper respiratory tract irritation and reversible pulmonary effects. Long-term exposure to diesel engine exhaust may cause cancer. Do not syphon by mouth.

Section 2. Hazards identification

Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.
Response	: Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Do not taste or swallow. Wash thoroughly after handling.
Hazards not otherwise classified	: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion. Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Chemical name	: Fuels, diesel, No 2
Other means of identification	: No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons

CAS number/other identifiers

CAS number : 68476-34-6

Ingredient name	%	CAS number
Benzene, trimethyl-	1 - 5	25551-13-7
Naphthalene	0.5 - 1.5	91-20-3
biphenyl	0.5 - 1.5	92-52-4
Cumene	0.5 - 1.5	98-82-8
Xylene	0.5 - 1.5	1330-20-7
Ethylbenzene	0.5 - 1.5	100-41-4

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
stomach pains
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- Specific treatments** : Treat symptomatically and supportively.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use caution when applying carbon dioxide in confined spaces.
SMALL FIRE: Steam, CO₂, dry chemical or inert gas (e.g., nitrogen). LARGE FIRE: Use foam, water fog or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, ignition or explosion.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
Diesel engine exhaust

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle.
- Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Head spaces in tanks and other containers may contain a mixture of air and vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, ("Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents").

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Fuels, diesel, No 2

**ACGIH TLV (United States, 2/2010).
Absorbed through skin.**

TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Form: Total hydrocarbons

Benzene, trimethyl-

ACGIH TLV (United States, 3/2017).

TWA: 25 ppm 8 hours.

TWA: 123 mg/m³ 8 hours.

Naphthalene

ACGIH TLV (United States). Absorbed through skin.

STEL: 15 ppm 15 minutes.

ACGIH TLV (United States, 3/2017).

Absorbed through skin.

TWA: 10 ppm 8 hours.

TWA: 52 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 10 ppm 10 hours.

TWA: 50 mg/m³ 10 hours.

STEL: 15 ppm 15 minutes.

STEL: 75 mg/m³ 15 minutes.

OSHA PEL (United States, 6/2016).

TWA: 10 ppm 8 hours.

TWA: 50 mg/m³ 8 hours.

biphenyl

OSHA PEL Z2 (United States).

TWA: 0.2 ppm 8 hours.

ACGIH TLV (United States, 3/2017).

TWA: 0.2 ppm 8 hours.

TWA: 1.3 mg/m³ 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 1 mg/m³ 10 hours.

TWA: 0.2 ppm 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 0.2 ppm 8 hours.

TWA: 1 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

Cumene

NIOSH REL (United States, 10/2016).**Absorbed through skin.**

TWA: 50 ppm 10 hours.

TWA: 245 mg/m³ 10 hours.**ACGIH TLV (United States, 3/2017).**

TWA: 50 ppm 8 hours.

OSHA PEL (United States, 6/2016).**Absorbed through skin.**

TWA: 50 ppm 8 hours.

TWA: 245 mg/m³ 8 hours.

Xylene

ACGIH TLV (United States, 3/2017).

TWA: 100 ppm 8 hours.

TWA: 434 mg/m³ 8 hours.

STEL: 150 ppm 15 minutes.

STEL: 651 mg/m³ 15 minutes.**OSHA PEL (United States, 6/2016).**

TWA: 100 ppm 8 hours.

TWA: 435 mg/m³ 8 hours.

Ethylbenzene

ACGIH TLV (United States, 3/2017).

TWA: 20 ppm 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 100 ppm 10 hours.

TWA: 435 mg/m³ 10 hours.

STEL: 125 ppm 15 minutes.

STEL: 545 mg/m³ 15 minutes.**OSHA PEL (United States, 6/2016).**

TWA: 100 ppm 8 hours.

TWA: 435 mg/m³ 8 hours.**Appropriate engineering controls**

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures**Hygiene measures**

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroelastomer rubber or polyvinyl chloride as approved by glove manufacturer. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.
- Body protection** : Avoid skin contact with liquid. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If an air purifying respirator is appropriate, use one equipped with cartridges rated for organic vapors.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Characteristic.
- pH** : Not available.
- Melting point** : -30 to -18°C (-22 to -0.4°F)
- Boiling point** : 282 to 338°C (539.6 to 640.4°F)
- Flash point** : Closed cup: ≥52°C (≥125.6°F) [Pensky-Martens.]
- Evaporation rate** : <1 (butyl acetate = 1)
- Lower and upper explosive (flammable) limits** : Lower: 0.6%
Upper: 6.5%
- Vapor pressure** : 0.27 kPa (2 mm Hg) [room temperature]
- Vapor density** : 5 [Air = 1]
- Relative density** : 0.84
- Density lbs/gal** : Estimated 7 lbs/gal
- Density gm/cm³** : 0.87 to 0.95 g/cm³
- Gravity, °API** : Estimated 37 @ 60 F
- Solubility** : Very slightly soluble in the following materials: cold water.
- Solubility in water** : 0.005 g/l
- Partition coefficient: n-octanol/water** : >3.3
- Auto-ignition temperature** : 254 to 285°C (489.2 to 545°F)
- Flow time (ISO 2431)** : Not available.
- Viscosity** : Kinematic (room temperature): 0.03 cm²/s (3 cSt)
- Conductivity** : <50 picosiemens/meter (unadditized)

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. Do not store with strong oxidizing agents.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene, trimethyl-	LD50 Oral	Rat	8970 mg/kg	-
	LD50 Oral	Rat	490 mg/kg	-
Naphthalene biphenyl	LD50 Dermal	Rabbit	>5010 mg/kg	-
	LD50 Oral	Rat	2140 mg/kg	-
Cumene	LC50 Inhalation Vapor	Mouse	10 g/m ³	7 hours
	LD50 Dermal	Rabbit	12300 uL/kg	-
	LD50 Oral	Rat	2.9 g/kg	-
Xylene	LD50 Oral	Rat	4000 mg/kg	-
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6700 ppm	4 hours
	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
Ethylbenzene	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Conclusion/Summary : No additional information.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Benzene, trimethyl-	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Naphthalene biphenyl	Skin - Mild irritant	Rabbit	-	495 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
Cumene	Skin - Severe irritant	Rabbit	-	24 hours 500 microliters	-
	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
Xylene	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
		Rat	-	8 hours 60 microliters	-

Section 11. Toxicological information

Ethylbenzene	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Conclusion/Summary : **Diesel exhaust particulate**: Lung tumor and lymphomas were identified in rats and mice exposed to unfiltered diesel fuel exhaust in chronic inhalation studies. Further, epidemiological studies have identified increase incidences of lung cancer in US railroad workers and bladder cancer in bus and truck drivers possibly associated with exposure to diesel engine exhaust. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen. In addition, NIOSH has identified complete diesel exhaust as a potential carcinogen.

Classification

Product/ingredient name	OSHA	IARC	NTP
Fuels, diesel, No 2	-	3	-
Diesel exhaust particulate	-	1	Reasonably anticipated to be a human carcinogen.
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Xylene	-	3	-
Ethylbenzene	-	2B	-

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Benzene, trimethyl-	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
biphenyl	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Benzene, trimethyl-	Category 2	Not determined	central nervous system (CNS)
Xylene	Category 2	Not determined	hearing organs

Aspiration hazard

Name	Result
Benzene, trimethyl- Cumene Ethylbenzene	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Corrosive to the digestive tract. Causes burns. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
stomach pains
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

- Teratogenicity** : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Benzene, trimethyl-	Acute LC50 5600 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Naphthalene	Acute EC50 1.6 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
biphenyl	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.5 mg/l Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/l Fresh water	Fish - Oreochromis mossambicus	60 days
	Acute LC50 360 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Cumene	Acute LC50 1450 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.17 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.229 mg/l Fresh water	Fish - Oncorhynchus mykiss	87 days
Xylene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Ethylbenzene	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Ethylbenzene	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6530 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
Ethylbenzene	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Not available.

Conclusion/Summary : Not available.

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Fuels, diesel, No 2	>3.3	-	low
Benzene, trimethyl-	3.4 to 3.8	-	low
Naphthalene	3.4	36.5 to 168	low
biphenyl	4.008	1900	high
Cumene	3.55	35.48	low
Xylene	3.12	8.1 to 25.9	low
Ethylbenzene	3.6	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.




Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	UN1202	UN1202
UN proper shipping name	Diesel Fuel	DIESEL FUEL	Diesel Fuel
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	No.	No.

Additional information

Section 14. Transport information

- DOT Classification** : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.
Reportable quantity 11223.3 lbs / 5095.4 kg [1479.2 gal / 5599.3 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 150. Non-bulk: 203. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 60 L. Cargo aircraft: 220 L.
Special provisions 144, B1, IB3, T4, TP1, TP29
Remarks 49 CFR 173.150 (f)(1) states that a flammable liquid with a flash point at or above 38°C (100°F) that does not meet the definition of any other hazard class may be reclassified as a combustible liquid. This provision does not apply to transportation by vessel or aircraft except where other means of transportation is impracticable.
- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).
- IMDG** : **Emergency schedules** F-E, S-E
Special provisions 363
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.
Special provisions A3
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

- U.S. Federal regulations** : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: naphthalene; ethylbenzene; toluene; benzene
Clean Water Act (CWA) 311: naphthalene; xylene; ethylbenzene; toluene; benzene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
 ACUTE TOXICITY (inhalation) - Category 4
 SKIN IRRITATION - Category 2
 EYE IRRITATION - Category 2B
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2
 ASPIRATION HAZARD - Category 1
 HNOC - Corrosive to digestive tract
 HNOC - Static-accumulating flammable liquid

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
Fuels, diesel, No 2	>99	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Corrosive to digestive tract HNOC - Static-accumulating flammable liquid
Diesel exhaust particulate	1 - 5	CARCINOGENICITY (inhalation) - Category 2
Benzene, trimethyl-	1 - 5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1
Naphthalene	0.5 - 1.5	FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2
biphenyl	0.5 - 1.5	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Cumene	0.5 - 1.5	FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
Xylene	0.5 - 1.5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2
Ethylbenzene	0.5 - 1.5	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY (inhalation) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	naphthalene	91-20-3	<1
	ethylbenzene	100-41-4	<1
Supplier notification	naphthalene	91-20-3	<1
	ethylbenzene	100-41-4	<1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: ethyltoluene; trimethylbenzene

Section 15. Regulatory information

- New York** : The following components are listed: Naphthalene; Cumene; Benzene, 1-methylethyl-; Ethylbenzene
- New Jersey** : The following components are listed: ETHYLTOLUENES; BENZENE, ETHYLMETHYL-; TRIMETHYL BENZENE (mixed isomers); BENZENE, TRIMETHYL-; NAPHTHALENE; MOTH FLAKES; cumene; ethylbenzene
- Pennsylvania** : The following components are listed: ethyltoluene; trimethylbenzene; NAPHTHALENE; cumene; ethylbenzene

California Prop. 65 Clear and Reasonable Warnings (2018)

⚠ WARNING: This product can expose you to Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Diesel exhaust particulate, Naphthalene, Cumene, Ethylbenzene, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Diesel exhaust particulate	<3	Yes.	No.	-	-
naphthalene	<1	Yes.	No.	Yes.	-
cumene	<1	Yes.	No.	-	-
ethylbenzene	<1	Yes.	No.	Yes.	-
toluene	<0.1	No.	Yes.	-	Yes.
benzene	<0.1	Yes.	Yes.	Yes.	Yes.

International regulations

Inventory list

- United States** : All components are listed or exempted.
- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS):** All components are listed or exempted.
Japan inventory (ISHL): Not determined.
- Malaysia** : Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : Not determined.
- Thailand** : Not determined.
- Turkey** : Not determined.
- Viet Nam** : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	Expert judgment
ACUTE TOXICITY (inhalation) - Category 4	Expert judgment
SKIN IRRITATION - Category 2	Expert judgment
EYE IRRITATION - Category 2B	Expert judgment
CARCINOGENICITY - Category 2	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment
AQUATIC HAZARD (LONG-TERM) - Category 2	Expert judgment

History

Date of printing : 7/31/2018

Date of issue/Date of revision : 7/31/2018

Date of previous issue : 4/16/2018

Version : 4

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : Not available.

☑ Indicates information that has changed from previously issued version.

Notice to reader

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SAFETY DATA SHEET

Issuing Date 16-Apr-2020

Revision Date 14-Apr-2020

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Doctor Mecanico Home Cleaner

Other means of identification

Synonyms NONE

Recommended use of the chemical and restrictions on use

Recommended Use General Purpose Cleaner - Non-aerosol

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name UNIVERSAL MANUFACTURING CORP.

Supplier Address P.O. BOX 11999
SAN JUAN
PR
00922
US

Supplier Phone Number Phone:787-270-1032
Fax:787-270-1015

Supplier Email beatriz@libertypr.net

Emergency telephone number

Company Emergency Phone Number 787-270-1032

2. HAZARDS IDENTIFICATION


Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2



GHS Label elements, including precautionary statements**Emergency Overview**

Signal word	Danger		
Hazard Statements Causes skin irritation Causes serious eye damage Suspected of causing cancer			
			
Appearance Clear to yellow	Physical state Liquid	Odor Characteristic	

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed
 Harmful to aquatic life
 Toxic to aquatic life with long lasting effects

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%	Trade Secret
Sodium xylene sulfonate	1300-72-7	10 - 30	*
Cocamide dea	68603-42-9	10 - 30	*
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-,branched	127087-87-0	7 - 13	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

Description of first aid measures

<u>General Advice</u>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<u>Eye contact</u>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Seek immediate medical attention/advice.
<u>Skin contact</u>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<u>Inhalation</u>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<u>Ingestion</u>	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
<u>Self-protection of the first aider</u>	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Uniform Fire Code

Irritant: Liquid

Explosion Data

Sensitivity to Mechanical Impact NONE.

Sensitivity to Static Discharge NONE.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

Other Information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible materials Strong acids. Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Characteristic
Appearance	Clear to yellow	Odor Threshold	Not applicable
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	7		



Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	1	
Water Solubility	Soluble in water	
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	0	
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Severely irritating to eyes. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium xylene sulfonate 1300-72-7	= 1000 mg/kg (Rat)	-	-
Cocamide dea 68603-42-9	= 12400 µL/kg (Rat) > 5000 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hyd roxy-, branched 127087-87-0	= 1310 mg/kg (Rat)	-	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Erythema (skin redness). May cause redness and tearing of the eyes. May cause blindness. Burning.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Cocamide dea 68603-42-9		Group 2B		X

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity Contains a known or suspected carcinogen. May cause adverse liver effects.

Target Organ Effects Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Endocrine system. Kidney. Liver. Thyroid.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
4,191.90 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Cocamide dea 68603-42-9		96h LC50: = 3.6 mg/L (Brachydanio rerio)	EC50 = 6000 mg/L 16 h	24h EC50: = 4.2 mg/L (Daphnia magna)

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Waste Codes

561

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name
Hazard Class

NOT REGULATED
NON-REGULATED
N/A

TDG

Not regulated



<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u>	Not regulated
Proper Shipping Name	NON REGULATED
Hazard Class	N/A
<u>IMDG/IMO</u>	Not regulated
Hazard Class	N/A
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Not determined
DSL	Not determined

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-,branched - 127087-87-0	127087-87-0	7 - 13	1.0

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.



Chemical name	California Proposition 65
Cocamide dea - 68603-42-9	Carcinogen

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Cocamide dea 68603-42-9					X
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-,branched 127087-87-0				X	

International Regulations**Canada****WHMIS Hazard Class**

Not determined

16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMS	Health Hazards 3*	Flammability 0	Physical Hazard 0	

Chronic Hazard Star Legend * = Chronic Health Hazard

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 16-Apr-2020
Revision Date 14-Apr-2020
Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet





A division of
Walter Surface Technologies

SAFETY DATA SHEET

E-NOX CLEAN

Section 1. Identification

- GHS product identifier** : E-NOX CLEAN
- Product code** : 53-G 303 (500 ml), 53-G 306 (5L), 53-G 307 (20L), 53-G 308 (208L)
- SDS no.** : L-59E
- Product type** : Liquid.

Identified uses

High strength stainless steel cleaner.

Manufacturer

- Manufacturer** : Walter Surface Technologies Inc.
Bio-Circle - A Division of Walter Surface Technologies Inc.
810 Day Hill Road
Windsor, CT 06095
United States
General Information: 18665925837
info.us@walter.com
www.walter.com

Emergency telephone number (with hours of operation)

- Emergency telephone number (with hours of operation)** : INFOTRAC® 1-800-535-5053, Outside U.S.A. call collect: 1-352-323-3500
24 hours/day, 7 days/week.

Section 2. Hazards identification

OSHA/HCS status

- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

- Classification of the substance or mixture** : SKIN CORROSION/IRRITATION - Category 1
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 3

GHS label elements

Hazard pictograms



Signal word

- Signal word** : Danger

Hazard statements

- Hazard statements** : H314 - Causes severe skin burns and eye damage.
H402 - Harmful to aquatic life.

Precautionary statements

Prevention

- Prevention** : P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P273 - Avoid release to the environment.
P264 - Wash hands thoroughly after handling.

Public



KMK Regulatory Services

Tel : +1-888-GHS-7769 (447-7769) / +1-450-GHS-7767 (447-7767)
www.kmkregservices.com www.askdriluc.com www.ghssmart.com

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Section 2. Hazards identification

- Response** :
- : P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
 - P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.
 - P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.
 - P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
 - : P405 - Store locked up.
 - : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
 - : None known.
- Storage**
- Disposal**
- Hazards not otherwise classified**

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Product code** : 53-G 303 (500 ml), 53-G 306 (5L), 53-G 307 (20L), 53-G 308 (208L)

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
Phosphoric acid	10 - 30	7664-38-2
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	1 - 5	68411-30-3
Alcohols, C12-14, ethoxylated	0,1 - 1	68439-50-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** :
- : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** :
- : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** :
- : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:

pain
watering
redness

- Inhalation** : No known significant effects or critical hazards.

Skin contact

- : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion

- : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments

- : No specific treatment.

Protection of first-aiders

- : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

- : None known.

Section 5. Fire-fighting measures

Specific hazards arising from the chemical : This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus oxides
metal oxide/oxides

Special protective actions for fire-fighters : No special measures are required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist.

Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe the vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Phosphoric acid	<p>ACGIH TLV (United States, 4/2014). STEL: 3 mg/m³ 15 minutes. TWA: 1 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 3 mg/m³ 15 minutes. TWA: 1 mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 1 mg/m³ 8 hours.</p>

Appropriate engineering controls

: No personal respiratory protective equipment normally required. Avoid breathing dust/fume/gas/mist/vapors/spray. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Section 8. Exposure controls/personal protection

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

- : Use a NIOSH/MSHA approved respirator if there is a risk of exposure at levels exceeding the exposure limits. Advice should be sought from respiratory protection specialists.

Section 9. Physical and chemical properties

Appearance

Physical state

- : Liquid. [Clear.]

Color

- : Yellow.

Odor

- : Characteristic.

Odor threshold

- : Not available.

pH

- : 0 to 1

Melting point

- : 0°C (32°F)

Boiling point

- : 98°C (208.4°F)

Flash point

- : Not applicable.

Evaporation rate

- : Not available.

Flammability (solid, gas)

- : Not applicable.

Lower and upper explosive (flammable) limits

- : Not applicable.

Vapor pressure

- : Not available.

Vapor density

- : Not available.

Density

- : 1.05 to 1.15 g/ml @ 20°C (68°F)

Solubility

- : Soluble in the following materials: cold water and hot water.

Partition coefficient: n-octanol/water

- : Not available.

Auto-ignition temperature

- : Not applicable.

Decomposition temperature

- : Not available.

Viscosity

- : Not available.

VOC content (g/L)

- : 0

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, metals and alkalis.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on [toxicological effects](#)

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phosphoric acid	LD50 Oral	Rat	1.25 g/kg	-
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	LD50 Oral	Rat	404 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	Skin - Moderate irritant	Rabbit	-	0.5 mL	-

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact

: Causes serious eye damage.

Inhalation

: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Skin contact

: Causes severe burns.

Section 11. Toxicological information

Ingestion

: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

pain
watering
redness

Inhalation : No known significant effects or critical hazards.

Skin contact : Adverse symptoms may include the following:

pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects

: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity

: No known significant effects or critical hazards.

Mutagenicity

: No known significant effects or critical hazards.

Teratogenicity

: No known significant effects or critical hazards.

Developmental effects

: No known significant effects or critical hazards.

Fertility effects

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	12511 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Phosphoric acid Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	Acute LC50 138 ppm Fresh water Acute LC50 7300 µg/L	Fish - Gambusia affinis - Adult Fish - Oryzias latipes	96 hours 96 hours

Section 12. Ecological information

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
E-NOX CLEAN	-	>80%; 28 to 100 day(s)	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	3.32	-	low
Alcohols, C12-14, ethoxylated	-	237	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.




Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN3264	UN3264	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid) RQ (Phosphoric acid)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)
Transport hazard class(es)	8 	8 	8 
Packing group	III	III	III
Environmental hazards	No.	No.	No.

Section 14. Transport information

<p>Additional information</p>	<p>Reportable quantity 33761 lbs / 15327.5 kg [3681 gal / 13934.1 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p>	<p>-</p>	<p>-</p>
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AERG : 154

DOT-RQ Details : Phosphoric acid 5000 lbs / 2270 kg [374.79 gal / 1418.7 L]

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. Protect from freezing. Freezing will damage product and render it unusable.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: Phosphoric acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

[Composition/information on ingredients](#)

No products were found.

SARA 304 RQ

: Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

[Composition/information on ingredients](#)

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Phosphoric acid	10 - 30	No.	No.	No.	Yes.	No.
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	1 - 5	No.	No.	No.	Yes.	No.
Alcohols, C12-14, ethoxylated	0.1 - 1	No.	No.	No.	Yes.	No.

SARA 313

No products were found.

State regulations

Massachusetts

New York

New Jersey

Pennsylvania

California Prop. 65

No products were found.

International lists

National inventory

Australia

Canada

China

Europe

Republic of Korea

- : The following components are listed: Phosphoric acid
- : The following components are listed: Phosphoric acid
- : The following components are listed: Phosphoric acid
- : The following components are listed: Phosphoric acid

- : All components are listed or exempted.
- : All components are listed or exempted.
- : All components are listed or exempted.
- : All components are listed or exempted.
- : All components are listed or exempted.

Section 16. Other information

History

Date of issue mm/dd/yyyy : 11/30/2015

Date of previous issue : 08/01/2015

Version : 1.2

Revised Section(s) : 2, 8, 16.

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950
US GHS

Synonyms: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquid - Category 2
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 1B
Carcinogenicity - Category 1B
Toxic to Reproduction - Category 1A
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment – Acute Hazard - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statements

Highly flammable liquid and vapour.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs (liver, kidneys, bladder, blood, bone marrow, nervous system) through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wash hands and forearms thoroughly after handling.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe mist/vapours/spray.
 Use only outdoors or in well-ventilated area.
 Do not eat, drink or smoke when using this product.
 Avoid release to the environment.

Response

In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.
 IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
 IF exposed or concerned: Get medical advice/attention.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
 Get medical advice/attention if you feel unwell.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.

Storage

Store in a well-ventilated place.
 Keep cool. Keep container tightly closed.
 Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
86290-81-5	Gasoline, motor fuel	100
108-88-3	Toluene	1-25
106-97-8	Butane	<10
1330-20-7	Xylenes (o-, m-, p- isomers)	1-15
95-63-6	Benzene, 1,2,4-trimethyl-	<6
64-17-5	Ethyl alcohol	0-10
100-41-4	Ethylbenzene	<3
71-43-2	Benzene	0.1-4.9

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

110-54-3	Hexane	0.5-4
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A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitroresols that can decompose violently.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration.

Unsuitable Extinguishing Media

None

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

USE ONLY AS A MOTOR FUEL.
DO NOT SIPHON BY MOUTH

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Gasoline, motor fuel (86290-81-5)

ACGIH: 300 ppm TWA
500 ppm STEL

Toluene (108-88-3)

ACGIH: 20 ppm TWA
OSHA: 200 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL
NIOSH: 100 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL

Butane (106-97-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
OSHA: 800 ppm TWA; 1900 mg/m³ TWA
NIOSH: 800 ppm TWA; 1900 mg/m³ TWA

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: 100 ppm TWA
150 ppm STEL
OSHA: 100 ppm TWA; 435 mg/m³ TWA
150 ppm STEL; 655 mg/m³ STEL

Benzene, 1,2,4-trimethyl- (95-63-6)

NIOSH: 25 ppm TWA; 125 mg/m³ TWA

Ethyl alcohol (64-17-5)

ACGIH: 1000 ppm STEL
OSHA: 1000 ppm TWA; 1900 mg/m³ TWA
NIOSH: 1000 ppm TWA; 1900 mg/m³ TWA

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Ethylbenzene (100-41-4)

ACGIH: 20 ppm TWA
OSHA: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL
NIOSH: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL

Benzene (71-43-2)

ACGIH: 0.5 ppm TWA
2.5 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA
NIOSH: 0.1 ppm TWA
1 ppm STEL

Hexane (110-54-3)

ACGIH: 50 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 500 ppm TWA; 1800 mg/m³ TWA
NIOSH: 50 ppm TWA; 180 mg/m³ TWA

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Translucent, straw-colored or light yellow	Odor:	Strong, characteristic aromatic hydrocarbon odor. Sweet-ether like
Physical State:	Liquid	pH:	ND
Vapor Pressure:	6.4 - 15 RVP @ 100 °F (38 °C) (275-475 mm Hg @ 68 °F (20 °C))	Vapor Density:	AP 3-4
Boiling Point:	85-437 °F (39-200 °C)	Melting Point:	ND
Solubility (H2O):	Negligible to Slight	Specific Gravity:	0.70-0.78
Evaporation Rate:	10-11	VOC:	ND
Percent Volatile:	100%	Octanol/H2O Coeff.:	ND
Flash Point:	-45 °F (-43 °C)	Flash Point Method:	PMCC
Upper Flammability Limit (UFL):	7.6%	Lower Flammability Limit (LFL):	1.4%
Burning Rate:	ND	Auto Ignition:	>530°F (>280°C)

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Gasoline, motor fuel (86290-81-5)

Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat 14000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Toluene (108-88-3)

Inhalation LC50 Rat 12.5 mg/L 4 h; Inhalation LC50 Rat >26700 ppm 1 h; Oral LD50 Rat 636 mg/kg; Dermal LD50 Rabbit 8390 mg/kg; Dermal LD50 Rat 12124 mg/kg

Butane (106-97-8)

Inhalation LC50 Rat 658 mg/L 4 h

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Material Name: Gasoline All Grades

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Xylenes (o-, m-, p- isomers) (1330-20-7)

Inhalation LC50 Rat 5000 ppm 4 h; Inhalation LC50 Rat 47635 mg/L 4 h; Oral LD50 Rat 4300 mg/kg; Dermal LD50 Rabbit >1700 mg/kg

Benzene, 1,2,4-trimethyl- (95-63-6)

Inhalation LC50 Rat 18 g/m³ 4 h; Oral LD50 Rat 3400 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Ethyl alcohol (64-17-5)

Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

Ethylbenzene (100-41-4)

Inhalation LC50 Rat 17.2 mg/L 4 h; Oral LD50 Rat 3500 mg/kg; Dermal LD50 Rabbit 15354 mg/kg

Benzene (71-43-2)

Inhalation LC50 Rat 13050-14380 ppm 4 h; Oral LD50 Rat 1800 mg/kg

Hexane (110-54-3)

Inhalation LC50 Rat 48000 ppm 4 h; Oral LD50 Rat 25 g/kg; Dermal LD50 Rabbit 3000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Moderate irritant. Contact with liquid or vapor may cause irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product may cause genetic defects.

Carcinogenicity

A: General Product Information

May cause cancer.

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Material Name: Gasoline All Grades

SDS No. 9950

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

B: Component Carcinogenicity

Gasoline, motor fuel (86290-81-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Toluene (108-88-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Ethyl alcohol (64-17-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [2010] (in alcoholic beverages) (Group 1 (carcinogenic to humans))

Ethylbenzene (100-41-4)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

Benzene (71-43-2)

ACGIH: A1 - Confirmed Human Carcinogen

OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA

NIOSH: potential occupational carcinogen

NTP: Known Human Carcinogen (Select Carcinogen)

IARC: Monograph 100F [in preparation]; Supplement 7 [1987]; Monograph 29 [1982] (Group 1 (carcinogenic to humans))

Reproductive Toxicity

This product is suspected of damaging fertility or the unborn child.

Specified Target Organ General Toxicity: Single Exposure

This product may cause drowsiness or dizziness.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Specified Target Organ General Toxicity: Repeated Exposure

This product causes damage to organs through prolonged or repeated exposure.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Gasoline, motor fuel (86290-81-5)

Test & Species	Conditions
96 Hr LC50 Alburnus alburnus	119 mg/L [static]
96 Hr LC50 Cyprinodon variegatus	82 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	56 mg/L
24 Hr EC50 Daphnia magna	170 mg/L

Toluene (108-88-3)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	15.22-19.05 mg/L [flow-through]
96 Hr LC50 Pimephales promelas	12.6 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	5.89-7.81 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	14.1-17.16 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	5.8 mg/L [semi-static]
96 Hr LC50 Lepomis macrochirus	11.0-15.0 mg/L [static]
96 Hr LC50 Oryzias latipes	54 mg/L [static]
96 Hr LC50 Poecilia reticulata	28.2 mg/L [semi-static]
96 Hr LC50 Poecilia reticulata	50.87-70.34 mg/L [static]
96 Hr EC50 Pseudokirchneriella subcapitata	>433 mg/L
72 Hr EC50 Pseudokirchneriella subcapitata	12.5 mg/L [static]
48 Hr EC50 Daphnia magna	5.46 - 9.83 mg/L [Static]
48 Hr EC50 Daphnia magna	11.5 mg/L

Xylenes (o-, m-, p- isomers) (1330-20-7)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	13.4 mg/L [flow-through]

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96 Hr LC50 Oncorhynchus mykiss	2.661-4.093 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	13.5-17.3 mg/L
96 Hr LC50 Lepomis macrochirus	13.1-16.5 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	19 mg/L
96 Hr LC50 Lepomis macrochirus	7.711-9.591 mg/L [static]
96 Hr LC50 Pimephales promelas	23.53-29.97 mg/L [static]
96 Hr LC50 Cyprinus carpio	780 mg/L [semi- static]
96 Hr LC50 Cyprinus carpio	>780 mg/L
96 Hr LC50 Poecilia reticulata	30.26-40.75 mg/L [static]
48 Hr EC50 water flea	3.82 mg/L
48 Hr LC50 Gammarus lacustris	0.6 mg/L

Benzene, 1,2,4-trimethyl- (95-63-6)**Test & Species**

96 Hr LC50 Pimephales promelas	7.19-8.28 mg/L [flow-through]
48 Hr EC50 Daphnia magna	6.14 mg/L

Conditions**Ethyl alcohol (64-17-5)****Test & Species**

96 Hr LC50 Oncorhynchus mykiss	12.0 - 16.0 mL/L [static]
96 Hr LC50 Pimephales promelas	>100 mg/L [static]
96 Hr LC50 Pimephales promelas	13400 - 15100 mg/L [flow-through]
48 Hr LC50 Daphnia magna	9268 - 14221 mg/L
24 Hr EC50 Daphnia magna	10800 mg/L
48 Hr EC50 Daphnia magna	2 mg/L [Static]

Conditions**Ethylbenzene (100-41-4)****Test & Species**

96 Hr LC50 Oncorhynchus mykiss	11.0-18.0 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	4.2 mg/L [semi- static]
96 Hr LC50 Pimephales promelas	7.55-11 mg/L [flow- through]
96 Hr LC50 Lepomis macrochirus	32 mg/L [static]
96 Hr LC50 Pimephales promelas	9.1-15.6 mg/L [static]
96 Hr LC50 Poecilia reticulata	9.6 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	4.6 mg/L
96 Hr EC50 Pseudokirchneriella subcapitata	>438 mg/L
72 Hr EC50 Pseudokirchneriella subcapitata	2.6 - 11.3 mg/L [static]

Conditions

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Material Name: Gasoline All Grades

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96 Hr EC50 Pseudokirchneriella subcapitata	1.7 - 7.6 mg/L [static]
48 Hr EC50 Daphnia magna	1.8 - 2.4 mg/L

Benzene (71-43-2)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	10.7-14.7 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	5.3 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	22.49 mg/L [static]
96 Hr LC50 Poecilia reticulata	28.6 mg/L [static]
96 Hr LC50 Pimephales promelas	22330-41160 µg/L [static]
96 Hr LC50 Lepomis macrochirus	70000-142000 µg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	29 mg/L
48 Hr EC50 Daphnia magna	8.76 - 15.6 mg/L [Static]
48 Hr EC50 Daphnia magna	10 mg/L

Hexane (110-54-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	2.1-2.98 mg/L [flow-through]
24 Hr EC50 Daphnia magna	>1000 mg/L

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

*** Section 14 - Transportation Information ***

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

DOT Information

Shipping Name: Gasoline

UN #: 1203 Hazard Class: 3 Packing Group: II

Placard:



*** Section 15 - Regulatory Information ***

Regulatory Information

A: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Toluene (108-88-3)

SARA 313: 1.0 % de minimis concentration
 CERCLA: 1000 lb final RQ; 454 kg final RQ

Xylenes (o-, m-, p- isomers) (1330-20-7)

SARA 313: 1.0 % de minimis concentration
 CERCLA: 100 lb final RQ; 45.4 kg final RQ

Benzene, 1,2,4-trimethyl- (95-63-6)

SARA 313: 1.0 % de minimis concentration

Ethylbenzene (100-41-4)

SARA 313: 0.1 % de minimis concentration
 CERCLA: 1000 lb final RQ; 454 kg final RQ

Benzene (71-43-2)

SARA 313: 0.1 % de minimis concentration
 CERCLA: 10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule)

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Hexane (110-54-3)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health

X

Chronic Health

X

Fire

X

Sudden Release of Pressure

--

Reactive

--

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Gasoline, motor fuel	86290-81-5	No	No	No	No	Yes	No
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes	No
Butane	106-97-8	Yes	Yes	Yes	Yes	Yes	No
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes	No
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes	No
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes	No
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes	No
Benzene	71-43-2	Yes	Yes	Yes	Yes	Yes	No
Hexane	110-54-3	No	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Safety Data Sheet

Material Name: Gasoline All Grades

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Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Toluene	108-88-3	1 %
Butane	106-97-8	1 %
Benzene, 1,2,4-trimethyl-	95-63-6	0.1 %
Ethyl alcohol	64-17-5	0.1 %
Ethylbenzene	100-41-4	0.1 %
Benzene	71-43-2	0.1 %
Hexane	110-54-3	1 %

Additional Regulatory Information

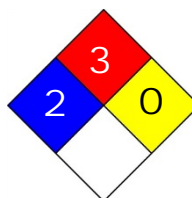
Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Gasoline, motor fuel	86290-81-5	No	DSL	EINECS
Toluene	108-88-3	Yes	DSL	EINECS
Butane	106-97-8	Yes	DSL	EINECS
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	DSL	EINECS
Benzene, 1,2,4-trimethyl-	95-63-6	Yes	DSL	EINECS
Ethyl alcohol	64-17-5	Yes	DSL	EINECS
Ethylbenzene	100-41-4	Yes	DSL	EINECS
Benzene	71-43-2	Yes	DSL	EINECS
Hexane	110-54-3	Yes	DSL	EINECS

*** Section 16 - Other Information ***

NFPA® Hazard Rating

Health	2
Fire	3
Reactivity	0



HMIS® Hazard Rating

Health	2	Moderate
Fire	3	Serious
Physical	0	Minimal
		*Chronic

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet



Safety Data Sheets (SDSs)

Section 1 - Identification

- (a) Product identifier: **ACTIVATED ALUMINA ,SIZE 1/8" ,3/16" ,1/4" ,**
- (b) Manufacturer name: Ingersoll Rand
800-D Beaty Street, Davidson, NC 28036
Telephone: +01 704-655-4000
- (c) Emergency phone number:
USA 24-Hour: 800-424-9300 | Outside of USA 24-Hour: +01 703-527-3887
- (d) Recommended use: Used for adsorption, separation, drying.
- (e) Restriction on use: No information available.

Section 2 – Hazard(s) identification

- (a) Classification of the chemical
This product is not classified as hazardous.
- (b) Label elements
This product is not classified as hazardous.
Pictogram(s): No pictogram.
Signal word: No signal word.
Hazard statements: No hazard statement.
Precautionary statements: No precautionary statement.
- (c) Description of any hazards not otherwise classified
No information available.
- (d) Ingredient with unknown acute toxicity
No information available.

Section 3 – Composition / information on ingredients

Chemical Name	Percent (by weight)	CAS No.
Aluminum Oxide	> 90%	1344-28-1

Section 4 – First-aid Measures



- (a) Most important symptoms/effects, acute and delayed
Inhalation: Cough.
If product gets in eyes contact: Redness. Pain.
If ingested: Abdominal pain.
- (b) Description of first aid measures
Eye contacts: Immediately flush eyes with plenty of water for at least 15 minutes.
Skin contact: Wash exposed skin with soap and water. If irritation develops, seek medical attention.
Ingestion: If the material is swallowed, get immediate medical attention or advice. Never give anything by mouth to an unconscious person. If conscious and alert, give several glasses of water or milk.
Inhalation: Remove from expose and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if necessary.
- (c) Immediate medical attention and special treatment
Attending physician should treat exposed patients symptomatically.

Section 5 – Fire-fighting Measures

- (a) Extinguishing media
Suitable extinguishing media: Use fire extinguishing methods suitable to surrounding conditions.
Unsuitable extinguishing media: Water with full jet.
- (b) Special hazards arising from the chemical
No particular hazards known.
- (c) Special protective equipment and precautions for fire-fighters
Firefighters must wear fire resistant protective equipment. Wear self-contained breathing apparatus.

Section 6 – Accidental release Measures

- (a) Personal precautions, protective equipment and emergency procedures
Refer to SECTION 8 for personal protective equipment. Prevention of skin and eye contact. Ensure adequate ventilation.
- (b) Methods and materials for containment and cleaning up
Sweep the spill area; avoid raising dust. Provide ventilation.

Section 7 – Handling and Storage



(a) Precautions for safe handling

Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work.

Dust and/or fine particles, minimize inhalation exposure.

Remove contaminated clothing and shoes. Wash clothing before re-using. Avoid dust production. Vacuum systems are provided if dust is formed. Any unavoidable deposit of dust must be regularly removed.

(b) Conditions for safe storage, including any incompatibilities

Keep packaging closed when not in use.

Store in dry protected location to prevent any moisture contact.

Incompatible materials: Strong acids, bases.

Section 8 – Exposure controls / Personal protection

(a) Permissible Exposure Limits (PELs):

CAS# 1344-28-1

- PEL-TWA 15mg/m³ (OSHA, total) 5mg/m³ (OSHA, resp)

(b) Monitoring Methods: No information found.

(c) Appropriate engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Equipped with safety shower and eyes bath.

(d) Personal Protective Equipment (PPE):

- Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.
- Skin: Wear appropriate protective gloves to prevent skin exposure.
- Clothing: Working clothing is suggested.
- Respirators: It is suggested to use an appropriate respirator if dust in the air or if irritation or other symptoms are experienced.

Section 9 – Physical and Chemical properties

Form:	Solid
Color:	White
Odor:	None
pH:	8~11 (AS)
Boiling Point/range:	N/A
Melting Point/range:	N/A
Decomposition Temperature:	N/A
Density:	0.5~0.8 g/mL
Ignition Temperature:	N/A



Solubility: Soluble in acid or soda, insoluble in water

Section 10 – Stability and Reactivity

- (a) Chemical Stability: Stable under normal condition.
- (b) Reactivity: Stable under recommended storage and handling conditions (see section 7, handling and storage).
- (c) Conditions to Avoid: The addition of the moisture (water) without flooding can cause rise in temperature from heat of adsorption, and contact with skin might result in burns.
- (d) Incompatibilities materials: Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc.

Section 11 – Toxicological information

- (a) Information on the likely routes of exposure
 - Inhalation: Cough.
 - Ingestion: Abdominal pain.
 - Eye contact: Redness. Pain.
- (b) Information on toxicological characteristics
 - CAS# 1344-28-1
 - LD50: >5000 mg/Kg (oral, rat)
 - Carcinogenicity: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 - Sensitization Rate: Not available.
 - Teratogenicity: Not available.

Section 12 – Ecological information

Ecological Toxicity: Not available.
 Ecological Degradation: Not available.
 Abiology Degradation: Not available.
 Aquatic Toxicity: Not available.

Section 13 – Disposal considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.



Section 14 – Transport information

Not regulated as a hazardous material for transportation. (D.O.T; TDG; IMDG; IATA; DGR)

UN: N/A
 Classification: N/A
 Packaging Sign: N/A
 Shipping Name: N/A
 Packaging Category: N/A
 Packaging Method: N/A
 Shipping Notice: N/A

Section 15 – Regulatory information

Regulatory Information:

Reference to the local, national and EU / international regulations.

(a) Safety, health and environmental regulations specific for the product in question

CAS No.	USA TSCA	EU EINECS	Korea ECL	China IECSC	Canada DSL
1344-28-1	Listed	Listed	Listed	Listed	Listed
Remark: The above-mentioned search results are based on the Non-Confidential Inventory.					

EU REACH: The substance has been registered under REACH Regulation.

Section 16 – Other information

(a) Preparation and revision information

Issue Time: 2015-6-4

Issue Department: Technical Department

Date review unit:

Modification record: Section 15 Ca-DSL Listed

(b) Abbreviations and acronyms

TSCA Toxic Substances Control Act, The American chemical inventory.

DSL Domestic Substances List

EINECS European Inventory of Existing Commercial chemical Substances

ECL Existing Chemicals List, the Korean chemical inventory.

IECSC Inventory of existing chemical substances in China.

(c) Disclaimer

The information in this SDS is provided all the relevant data fully and truly. However,



the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

----- End of the SDS -----

Material Safety Data Sheet

According to the Controlled Product Regulations

1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : Shell Tellus S2 VX 22
Uses : Hydraulic fluid.
Product Code : 001E0122

Manufacturer/Supplier : Shell Canada Products
 400 - 4th Avenue S.W.
 Calgary AB T2P 0J4
 Canada
Telephone : (+1) 8006611600
Fax : (+1) 4033848345

Emergency Telephone Number
 : CHEMTREC (24 hr): (+1) 800-424-9300
 CANUTEC (24 hr): (+1) 613-996-6666

2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture Description : Highly refined mineral oils and additives.

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Refer to Chapter 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

WHMIS Class/Description : THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
Routes of Exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
Health Hazards : Not expected to be a health hazard when used under normal conditions. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. High-pressure injection under the skin may cause serious damage including local necrosis. Used oil may contain harmful impurities.
Signs and Symptoms : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Ingestion may result in nausea, vomiting and/or diarrhoea.
Safety Hazards : Not classified as flammable but will burn.
Environmental Hazards : Not classified as dangerous for the environment.

Material Safety Data Sheet

According to the Controlled Product Regulations

4. FIRST AID MEASURES

General Information	: Not expected to be a health hazard when used under normal conditions.
Inhalation	: No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
Skin Contact	: Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
Eye Contact	: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Advice to Physician	: Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Flash point	: Typical 166 °C / 331 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V)(based on mineral oil)
Auto ignition temperature	: > 320 °C / 608 °F
Hazardous Combustion Products and Specific Hazards	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
Suitable Extinguishing Media	: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	: Do not use water in a jet.
Protective Equipment for Firefighters	: Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

Material Safety Data Sheet

According to the Controlled Product Regulations

6. ACCIDENTAL RELEASE MEASURES

- Protective Measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Slippery when spilled. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	

Material Safety Data Sheet

According to the Controlled Product Regulations

Consult local authorities for acceptable exposure limits within their jurisdiction.

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Material Safety Data Sheet

According to the Controlled Product Regulations

Appearance	: Clear. Liquid at room temperature.
Odour	: Slight hydrocarbon.
Odour threshold	: Data not available
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -51 °C / -60 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.859 at 15 °C / 59 °F
Density	: Typical 859 kg/m ³ at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 22 mm ² /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.
Hazardous Polymerisation	: No
Sensitivity to Mechanical Impact	: No
Sensitivity to Static Discharge	: No

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Routes of Exposure	: Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat.
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit.
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.

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- Carcinogenicity** : Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
- Reproductive and Developmental Toxicity** : Not expected to be a hazard.
- Additional Information** : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.
ALL used oil should be handled with caution and skin contact avoided as far as possible.
High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.
- Mobility** : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to

Material Safety Data Sheet

According to the Controlled Product Regulations

Local Legislation

a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
 : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION**Canadian Road and Rail Shipping Classification**

This product is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Class/Description : THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.

Inventory Status

EINECS : All components listed or polymer exempt.
TSCA : All components listed.
DSL : One or more of the components of this product are listed on the NDSL. All other components are on the DSL.

16. OTHER INFORMATION

MSDS Version Number : 1.2
MSDS Effective Date : 2015-01-12
MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.
MSDS Regulation : The content and format of this (M)SDS is in accordance with the Controlled Product Regulations.
MSDS Prepared By : Shell Product Stewardship; 1-800-661-1600
MSDS Distribution : The information in this document should be made available to

Material Safety Data Sheet

According to the Controlled Product Regulations

all who may handle the product.

Disclaimer

The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



Safety Data Sheet

Section 1: Identification of the substance or mixture and of the supplier

Product Name:	Liquefied Natural Gas
SDS Number:	0000000
Synonyms/Other Means of Identification:	LNG Liquid Methane
Intended Use:	Fuel
Manufacturer:	New Fortress Energy 8350 NW 52 nd Terr Suite 300 Doral, FL 33166
Emergency Health and Safety Number:	Chemtrec: 800-424-9300 (24 Hours)
Customer Service:	305-423-1526
Technical Information:	786-45384356 Email: bhutton@newfortressenergy.com
SDS Information:	

Section 2: Hazard(s) Identification

Classification

H220 -- Flammable gases -- Category 1

H281 -- Gases under pressure -- Refrigerated liquefied gas

Label Elements



DANGER

Extremely flammable gas. (H220)*

Contains refrigerated gas; may cause cryogenic burns or injury. (H281)*

Gas may reduce oxygen in confined spaces.

Precautionary Statement(s):

Do not handle until all safety precautions have been read and understood. (P202)*

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210)*

Take precautionary measures against static discharge. (P243)*

Wear cold insulating gloves/face shield/eye protection. (P282)*

Get immediate medical advice/attention. (P315)*

Thaw frosted parts with lukewarm water. Do not rub affected area. (P336)*

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. (P377)*

Eliminate all ignition sources if safe to do so. (P381)*

Protect from sunlight. Store in a well ventilated place. (P410+P403)*

Section 3: Composition / Information on Ingredients

Component	CASRN	Concentration ¹
Natural gas, dried	68410-63-9	100

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4: First Aid Measures

Eye Contact: For contact with the liquefied gas, remove contact lenses if present and easy to do, hold eyelids apart and gently flush the affected eye(s) with lukewarm water. Seek immediate medical attention.

Skin Contact: Liquefied gases may cause cryogenic burns or injury. Treat burned or frostbitten skin by flushing or immersing the affected area(s) in lukewarm water. Do not rub affected area. Do not remove clothing that adheres due to freezing. After sensation has returned to the frostbitten skin, keep skin warm, dry, and clean. If blistering occurs, apply a sterile dressing. Seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms and effects

Acute: Anesthetic effects at high concentrations.

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

Notes to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Section 5: Fire-Fighting Measures



NFPA 704 Hazard Class

Health: 3 **Flammability:** 4 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: Extremely flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Drains can be plugged and valves made inoperable by the formation of ice if rapid evaporation of large quantities of the liquefied gas occurs. Do not allow runoff from fire fighting to enter drains or water courses – may cause explosion hazard in drains and may reignite.

Extinguishing Media: Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

Section 6: Accidental Release Measures

Personal Precautions: Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Prevent from entering drains or any place where accumulation may occur. Ventilate area and allow to evaporate. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

Section 7: Handling and Storage

Precautions for safe handling: Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Gas can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Cold burns may occur during filling operations. Containers and delivery lines may become cold enough to present cold burn hazard.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, wellventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Avoid exposing any part of a compressed-gas

cylinder to temperatures above 125F(51.6C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

Section 8: Exposure Controls / Personal Protection

Component	ACGIH	OSHA	Other
Natural gas, dried	1000 ppm TWA as Aliphatic Hydrocarbons C1-4	---	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: Wear thermal insulating gloves and face shield or eye protection when working with materials that present thermal hazards (hot or cold).

Respiratory Protection: A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH).

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

Section 9: Physical and Chemical Properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Colorless; Water-white
Physical Form:	Refrigerated Gas
Odor:	No distinct odor
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	>1000 mm Hg @ 77°F / 25°C
Vapor Density (air=1):	0.5
Initial Boiling Point/Range:	-259 °F / -162 °C
Melting/Freezing Point:	No data
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity (water=1):	0.426 @ 60°F (15.6°C)
Percent Volatile:	100%
Evaporation Rate (nBuAc=1):	>1
Flash Point:	< -306 °F / < -188 °C
Lower Explosive Limits (vol % in air):	4.5
Upper Explosive Limits (vol % in air):	14.0
Auto-ignition Temperature:	999 °F / 537 °C

Section 10: Stability and Reactivity

Stability: Stable under normal ambient and anticipated conditions of use.

Conditions to Avoid: Avoid all possible sources of ignition. Heat will increase pressure in the storage tank.

Materials to Avoid (Incompatible Materials): Avoid contact with acids, aluminum chloride, chlorine, chlorine dioxide, halogens and oxidizing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

Section 11: Toxicological Information

Information on Toxicological Effects of Substance/Mixture

<u>Acute Toxicity</u>	<u>Hazard</u>	<u>Additional Information</u>	<u>LC50/LD50 Data</u>
Inhalation	Unlikely to be harmful	Asphyxiant. High concentrations in confined spaces may limit oxygen available for breathing. See Signs and Symptoms.	> 20,000 ppm (gas)
Skin Absorption	Skin absorption is not anticipated		Not Applicable
Ingestion (Swallowing)	Ingestion is not anticipated		Not Applicable

Aspiration Hazard: Not applicable.

Skin Corrosion/Irritation: Not expected to be irritating. Contact with the liquefied or pressurized gas may cause frostbite ("cold" burn).

Serious Eye Damage/Irritation: Not expected to be irritating. Contact with the liquefied or pressurized gas may cause momentary freezing followed by swelling and eye damage.

Signs and Symptoms: Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

Skin Sensitization: Skin contact is not anticipated.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure.

Carcinogenicity: Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

Section 12: Ecological Information

Toxicity: Petroleum gases will readily evaporate from the surface and would not be expected to have significant adverse effects in the aquatic environment. Classification: No classified hazards.

Persistence and Degradability: The hydrocarbons in this material are expected to be inherently biodegradable. In practice, hydrocarbon gases are not likely to remain in solution long enough for biodegradation to be a significant loss process.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon gases range from 2.3 for propane to 2.8 for butane and are not regarded as having the potential to bioaccumulate.

Mobility in Soil: Due to the extreme volatility of petroleum gases, air is the only environmental compartment in which these hydrocarbons will be found. In air, these hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half-lives ranging from 3.2 days for n-butane to 7 days for propane.

Other Adverse Effects: None anticipated.

Section 13: Disposal Considerations

This material is a gas and would not typically be managed as a waste.

Section 14: Transport Information

U.S. Department of Transportation (DOT)

Shipping Description: UN1972, Methane, refrigerated liquid, 2.1
Non-Bulk Package Marking: None [*Not authorized in nonbulk packages.*]
Non-Bulk Package Labeling: None [*Not authorized in nonbulk packages.*]
Bulk Package/Placard Marking: Flammable gas / 1972
 Methane, refrigerated liquid
Packaging - References: None; None; 173.318
(Exceptions; Non-bulk; Bulk)
Hazardous Substance: See Section 15 for RQ's
Emergency Response Guide: 115

Note: *Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable*

International Maritime Dangerous Goods (IMDG)

Shipping Description: UN1972, Methane, refrigerated liquid, 2.1
Non-Bulk Package Marking: Methane, refrigerated liquid, UN1972
Labels: Flammable gas
Placards/Marking (Bulk): Flammable / UN1972
Packaging - Non-Bulk: P203
EMS: F-D, S-U

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: *Forbidden*

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

Section 15: Regulatory Information**CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):**

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	Yes
Pressure Hazard:	Yes
Reactive Hazard:	No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:

This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Hazard Classification**Canada:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class: A

- Compressed Gas
B1 - Flammable Gases

National Chemical Inventories

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

Section 16: Other Information

Date of Issue:	31 Jan 2016
Revised Sections or Basis for Revision:	Identified Hazards (Section 2) Precautionary Statement(s) (Section 2) First Aid (Section 4) Shipping information (Section 14) Regulatory information (Section 15)
SDS Number:	000000

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

ITEM: 4JB56 - Multipurpose Food Grade Grease 14

PICK REQ: 1393107298

SAFETY DATA SHEET (SDS)

SDS: E9608

This SDS should be attached or kept with the respective product with which it is associated.

#####

Associated Items
4JB56
CRC (R*)

SAFETY DATA SHEET

1. IDENTIFICATION

PRODUCT IDENTIFIER: MULTI PURPOSE FOOD GRADE GREASE
OTHER MEANS OF IDENTIFICATION:
PRODUCT CODE NO.: SL35600 (ITEM# 1007924)
RECOMMENDED USE: LUBRICATING GREASE
RECOMMENDED RESTRICTIONS: NONE KNOWN.
MANUFACTURER/IMPORTER/SUPPLIER/DISTRIBUTOR INFORMATION:
MANUFACTURED OR SOLD BY:

COMPANY NAME: CRC INDUSTRIES, INC.
ADDRESS:
885 LOUIS DR.
WARMINSTER, PA 18974
US

TELEPHONE:
GENERAL INFORMATION: 215-674-4300
TECHNICAL ASSISTANCE: 800-521-3168
CUSTOMER SERVICE: 800-272-4620
24-HOUR EMERGENCY (CHEMREC): 800-424-9300 (US)
WEBSITE: WWW.CRCINDUSTRIES.COM

2. HAZARD (S) IDENTIFICATION

PHYSICAL HAZARDS: NOT CLASSIFIED.
HEALTH HAZARDS: NOT CLASSIFIED.
ENVIRONMENTAL HAZARDS: NOT CLASSIFIED.
OSHA DEFINED HAZARDS: NOT CLASSIFIED.
LABEL ELEMENTS:
Hazard Symbol: NONE.
Signal Word: NONE.
HAZARD STATEMENT:
THE MIXTURE DOES NOT MEET THE CRITERIA FOR CLASSIFICATION.
PRECAUTIONARY STATEMENT:

PREVENTION:
USE WITH ADEQUATE VENTILATION. OPEN DOORS AND WINDOWS OR USE OTHER MEANS TO ENSURE A FRESH AIR SUPPLY DURING USE. OBSERVE GOOD INDUSTRIAL HYGIENE PRACTICES.
RESPONSE: WASH HANDS AFTER HANDLING.
STORAGE: STORE AWAY FROM INCOMPATIBLE MATERIALS.

DISPOSAL:
DISPOSE OF WASTE AND RESIDUES IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS.

HAZARD(S) NOT OTHERWISE CLASSIFIED (HNOC): NONE KNOWN.

SUPPLEMENTAL INFORMATION: NONE.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	COMMON NAME AND SYNONYMS	CAS NUMBER	%
WHITE MINERAL OIL		8042-47-5	50 - 60
ALUMINUM HYDROXIDE BENZOATE STERATE		54326-11-3	10 - 20
CALCIUM CARBONATE		1317-65-3	10 - 20
ZINC OXIDE		1314-13-2	5 - 10
QUARTZ		14808-60-7	<1
2,6-DI-TERT-BUTYL-P-CRESOL		128-37-0	<0.2

SPECIFIC CHEMICAL IDENTITY AND/OR PERCENTAGE OF COMPOSITION HAS BEEN WITHHELD AS A TRADE SECRET.

4. FIRST-AID MEASURES

INHALATION:
REMOVE VICTIM TO FRESH AIR AND KEEP AT REST IN A POSITION COMFORTABLE FOR BREATHING. GET MEDICAL ATTENTION IF SYMPTOMS OCCUR. IF INHALATION OF A

SKIN CONTACT:
WASH OFF WITH PLENTY OF WATER. REMOVE AND ISOLATE CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS AND PERSISTS. WASH CONTAMINATED CLOTHING BEFORE REUSE.

EYE CONTACT:
RINSE IMMEDIATELY WITH PLENTY OF WATER. ALSO UNDER THE EYELIDS. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS AND PERSISTS.

INGESTION:
RINSE MOUTH. DRINK 1 OR 2 GLASSES OF WATER. DO NOT INDUCE VOMITING WITHOUT ADVICE FROM POISON CONTROL CENTER. NEVER GIVE ANYTHING BY MOUTH TO A VICTIM WHO IS UNCONSCIOUS OR IS HAVING CONVULSIONS. GET MEDICAL ATTENTION IF SYMPTOMS OCCUR. IF INGESTION OF A LARGE AMOUNT DOES OCCUR, CALL A POISON CONTROL CENTER IMMEDIATELY.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED:
DIRECT CONTACT WITH EYES MAY CAUSE TEMPORARY IRRITATION.
INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:
TREAT SYMPTOMATICALLY.

GENERAL INFORMATION:
ENSURE THAT MEDICAL PERSONNEL ARE AWARE OF THE MATERIAL(S) INVOLVED AND TAKE PRECAUTIONS TO PROTECT THEMSELVES.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:
USE FIRE-EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING MATERIALS.
UNUSABLE EXTINGUISHING MEDIA: NONE KNOWN.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:
DURING FIRE, GASES HAZARDOUS TO HEALTH MAY BE FORMED.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS:
FIRE-FIGHTERS MUST USE STANDARD PROTECTIVE EQUIPMENT INCLUDING FLAME RETARDANT COAT, HELMET WITH FACE SHIELD, GLOVES, RUBBER BOOTS, AND IN ENCLOSED SPACES, SCBA.

FIRE-FIGHTING EQUIPMENT/INSTRUCTIONS:
COOL CONTAINERS EXPOSED TO HEAT WITH WATER SPRAY AND REMOVE CONTAINER, IF NO RISK IS INVOLVED. USE WATER SPRAY TO COOL UNOPENED CONTAINERS.
GENERAL FIRE HAZARDS: NO UNUSUAL FIRE OR EXPLOSION HAZARDS NOTED.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
KEEP UNNECESSARY PERSONNEL AWAY. KEEP PEOPLE AWAY FROM AND UPWIND OF SPILL/LEAK. WEAR APPROPRIATE PROTECTIVE EQUIPMENT AND CLOTHING DURING CLEAN-UP. ENSURE ADEQUATE VENTILATION. LOCAL AUTHORITIES SHOULD BE ADVISED IF SIGNIFICANT SPILLAGES CANNOT BE CONTAINED.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:
PRESENT PRODUCT FROM ENTERING DRAINS. STOP THE FLOW OF MATERIAL. IF THIS IS WITHOUT RISK, SWEEP UP OR VACUUM UP SPILLAGE AND COLLECT IN SUITABLE CONTAINER FOR DISPOSAL. FOLLOWING PRODUCT RECOVERY, FLUSH AREA WITH WATER.

ENVIRONMENTAL PRECAUTIONS:
AVOID RELEASE TO THE ENVIRONMENT. INFORM APPROPRIATE MANAGERIAL OR SUPERVISORY PERSONNEL OF ALL ENVIRONMENTAL RELEASES. PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. AVOID DISCHARGE INTO DRAINS, WATER COURSES OR ONTO THE GROUND.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:
KEEP FORMATION OF AIRBORNE DUSTS TO A MINIMUM. PROVIDE APPROPRIATE ENOUGH VENTILATION AT PLACES WHERE DUST IS FORMED. DO NOT BREATHE DUST. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. USE GLOVES IN WELL-VENTILATED AREAS. FOR PRODUCT USAGE INSTRUCTIONS, SEE THE PRODUCT LABEL.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
KEEP AWAY FROM HEAT AND SOURCES OF IGNITION. STORE IN A COOL, DRY PLACE OUT OF DIRECT SUNLIGHT. KEEP CONTAINER TIGHTLY CLOSED. STORE AWAY FROM INCOMPATIBLE MATERIALS (SEE SECTION 10 OF THE SDS).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
THE FOLLOWING CONSTITUENTS ARE THE ONLY CONSTITUENTS OF THE PRODUCT WHICH HAVE A PEL, TLV OR OTHER RECOMMENDED EXPOSURE LIMIT. AT THIS TIME, THE OTHER CONSTITUENTS HAVE NO KNOWN EXPOSURE LIMITS.

US. OSHA TABLE Z-1 LIMITS FOR AIR CONTAMINANTS (29 CFR 1910.1000):

COMPONENTS	TYPE	VALUE	FORM
CALCIUM CARBONATE (CAS 1317-65-3)	PEL	5 MG/MG	RESPIRABLE FRACTION.
		15 MG/MG	TOTAL DUST.
QUARTZ (CAS 14808-60-7)	PEL	0.05 MG/M3	RESPIRABLE DUST.
WHITE MINERAL OIL (CAS 8042-47-5)	PEL	5 MG/M3	MIST.
ZINC OXIDE (CAS 1314-13-2)	PEL	5 MG/M3	RESPIRABLE FRACTION.
		5 MG/M3	FUME.
		15 MG/M3	TOTAL DUST.

US. OSHA TABLE Z-3 (29 CFR 1910.1000):

COMPONENTS TYPE VALUE FORM
 QUARTZ (CAS 14808-60-7) TWA 0.1 MG/M3 RESPIRABLE
 2.4 MPFC RESPIRABLE.
 US. ACGIH THRESHOLD LIMIT VALUES:
 COMPONENTS TYPE VALUE FORM
 2, 6-DI-*TERT*-BUTYL-P-CRESOL TWA 2 MG/M3 INHALE FRACTION
 (CAS 128-37-0) AND VAPOR.
 ALUMINUM HYDROXIDE TWA 1 MG/M3 RESPIRABLE FRACTION.
 BENZOATE SUCRATE (CAS 54326-11-3)

QUARTZ (CAS 14808-60-7) TWA 0.025 MG/M3 RESPIRABLE FRACTION.
 WHITE MINERAL OIL (CAS 8042-47-5) TWA 5 MG/M3 INHALE FRACTION.
 ZINC OXIDE (CAS 1314-13-2) STEEL 10 MG/M3 RESPIRABLE FRACTION.
 TWA 2 MG/M3 RESPIRABLE FRACTION.

US. NIOSH: POCKET GUIDE TO CHEMICAL HAZARDS

COMPONENTS TYPE VALUE FORM
 2, 6-DI-*TERT*-BUTYL-P-CRESOL TWA 10 MG/3M
 (CAS 128-37-0) REPARABLE.
 CALCIUM CARBONATE (CAS 1317-65-3) TWA 5 MG/3M REPARABLE.
 10 MG/3M TOTAL

QUARTZ (CAS 14808-60-7) TWA 0.05 MG/M3 RESPIRABLE DUST.
 WHITE MINERAL OIL (CAS 8042-47-5) STEEL 10 MG/M3 MLST.
 TWA 5 MG/M3 MLST.
 ZINC OXIDE (CAS 1314-13-2) CEILING 15 MG/M3 DUST.
 STEEL 10 MG/M3 FUME.
 TWA 5 MG/M3 DUST.
 5 MG/M3 FUME.

BIOLOGICAL LIMIT VALUES:
 NO BIOLOGICAL EXPOSURE LIMITS NOTED FOR THE INGREDIENT(S).
 APPROPRIATE ENGINEERING CONTROLS:
 GOOD GENERAL VENTILATION (SPECIFICALLY 10 AIR CHANGES PER HOUR) SHOULD BE USED. EXHAUST PATTERNS SHOULD BE MATCHED TO CONDITIONS. IF APPLICABLE USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO MAINTAIN AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. IF EXPOSURE LIMITS HAVE NOT BEEN ESTABLISHED, MAINTAIN AIRBORNE LEVELS TO AN ACCEPTABLE LEVEL.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:
 EYE/FACE PROTECTION: WEAR SAFETY GLASSES WITH SIDE SHIELDS (OR GOGGLES).
 SKIN PROTECTION:
 HAND PROTECTION:
 WEAR PROTECTIVE GLOVES SUCH AS: NITRILE, LATEX.
 OTHER: WEAR SUITABLE PROTECTIVE CLOTHING.

RESPIRATORY PROTECTION:
 IF ENGINEERING CONTROLS ARE NOT FEASIBLE OR IF EXPOSURE EXCEEDS THE APPLICABLE EXPOSURE LIMITS, USE A NIOSH-APPROVED CAPTIVE RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE. USE A SELF-CONTAINED BREATHING APPARATUS IN CONFINED SPACES AND FOR EMERGENCIES. AIR MONITORING IS NEEDED TO DETERMINE ACTUAL HAZARDOUS EXPOSURE LEVELS.

THERMAL HAZARDS:
 WEAR APPROPRIATE THERMAL PROTECTIVE CLOTHING, WHEN NECESSARY.
 GENERAL HYGIENE CONSIDERATIONS:
 ALWAYS OBSERVE GOOD PERSONAL HYGIENE MEASURES, SUCH AS WASHING AFTER HANDLING THE MATERIAL AND BEFORE EATING, DRINKING, AND/OR SMOKING. ROUTINELY WASH WORK CLOTHING AND PROTECTIVE EQUIPMENT TO REMOVE CONTAMINANTS.

9. PHYSICAL AND CHEMICAL PROPERTIES
 APPEARANCE:
 PHYSICAL STATE: SOLID.
 FORM: GRAISE.
 COLOR: WHITE.
 ODOR: MILD PETROLEUM.
 ODOR THRESHOLD: NOT AVAILABLE.
 PH: NOT AVAILABLE.
 MELTING POINT/FREEZING POINT: NOT AVAILABLE.
 INITIAL BOILING POINT AND BOILING RANGE:
 450 DEG. F (232.2 DEG. C) ESTIMATED
 FLASH POINT: > 430 DEG. F (> 221.1 DEG. C) CLEVELAND OPEN CUP
 EVAPORATION RATE: NOT AVAILABLE.
 FLAMMABILITY (SOLID, GAS): NOT AVAILABLE.
 UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:
 FLAMMABILITY LIMIT - LOWER (%): NOT AVAILABLE.
 FLAMMABILITY LIMIT - UPPER (%): NOT AVAILABLE.
 VAPOR PRESSURE: NOT AVAILABLE.
 VAPOR DENSITY: NOT AVAILABLE.

RELATIVE DENSITY: 0.89
 SOLUBILITY (IES):
 SOLUBILITY (WATER): NOT AVAILABLE.
 PARTITION COEFFICIENT (N-OCTANOL/WATER): NOT AVAILABLE.
 AUTO-IGNITION TEMPERATURE: 500 DEG. F (260 DEG. C) ESTIMATED
 DECOMPOSITION TEMPERATURE: NOT AVAILABLE.
 VISCOSITY: > 20.5 MM²/S (104 DEG. F (40 DEG. C))
 PERCENT VOLATILE: 55 % ESTIMATED

10. STABILITY AND REACTIVITY

REACTIVITY:
 THE PRODUCT IS STABLE AND NON-REACTIVE UNDER NORMAL CONDITIONS OF USE, STORAGE AND TRANSPORT.
 CHEMICAL STABILITY: MATERIAL IS STABLE UNDER NORMAL CONDITIONS.
 POSSIBILITY OF HAZARDOUS REACTIONS:
 NO DANGEROUS REACTION KNOWN UNDER CONDITIONS OF NORMAL USE.
 CONDITIONS TO AVOID: CONTACT WITH INCOMPATIBLE MATERIALS.
 INCOMPATIBLE MATERIALS: ACIDS, STRONG OXIDIZING AGENTS, FLUORINE.
 HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES, METAL OXIDES.

11. TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE:
 INHALATION:
 PROLONGED OR EXCESSIVE INHALATION MAY CAUSE RESPIRATORY TRACT IRRITATION.
 SKIN CONTACT:
 PROLONGED SKIN CONTACT MAY CAUSE TEMPORARY IRRITATION. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
 EYE CONTACT: DIRECT CONTACT WITH EYES MAY CAUSE TEMPORARY IRRITATION.
 INGESTION: CAN CAUSE STOMACH ACHE AND VOMITING.
 SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:
 DIRECT CONTACT WITH EYES MAY CAUSE TEMPORARY IRRITATION.
 INFORMATION ON TOXICOLOGICAL EFFECTS:

ACUTE TOXICITY: NOT KNOWN.
 COMPONENTS SPECIES TEST RESULTS
 2, 6-DI-*TERT*-BUTYL-P-CRESOL (CAS 128-37-0):
 ACUTE: RAT 890 MG/KG
 OPAL:
 LD50 RAT
 QUARTZ (CAS 14808-60-7):
 ACUTE: RAT 500 MG/KG
 OPAL:
 LD50 RAT
 WHITE MINERAL OIL (CAS 8042-47-5):
 ACUTE: RAT > 5 MG/L, 4 HOURS
 DERMAL:
 LD50 RABBIT > 2600 MG/KG
 INHALATION:
 LC50 RAT > 1.78 MG/L, 4 HOURS
 ZINC OXIDE (CAS 1314-13-2):
 ACUTE: RAT > 5000 MG/KG
 INHALATION:
 LC50 RAT > 1.78 MG/L, 4 HOURS
 OPAL:
 LD50 RAT > 5000 MG/KG

* ESTIMATES FOR PRODUCT MAY BE BASED ON ADDITIONAL COMPONENT DATA NOT SHOWN.

SKIN CORROSION/IRRITATION:
 PROLONGED SKIN CONTACT MAY CAUSE TEMPORARY IRRITATION.
 SERIOUS EYE DAMAGE/EYE IRRITATION:
 DIRECT CONTACT WITH EYES MAY CAUSE TEMPORARY IRRITATION.
 RESPIRATORY OR SKIN SENSITIZATION:
 RESPIRATORY SENSITIZATION: NOT A RESPIRATORY SENSITIZER.
 SKIN SENSITIZATION:
 THIS PRODUCT IS NOT EXPECTED TO CAUSE SKIN SENSITIZATION.
 GERM CELL MUTAGENICITY:
 NO DATA AVAILABLE TO INDICATE PRODUCT OR ANY COMPONENTS PRESENT AT GREATER

THAN 0.1% ARE MUTAGENIC OR GENOTOXIC.

CARCINOGENICITY:

THIS PRODUCT IS NOT CONSIDERED TO BE A CARCINOGEN BY IARC, ACGIH, NTP, OR OSHA.

IARC MONOGRAPHS. OVERALL EVALUATION OF CARCINOGENICITY:

2, 6-DI-*tert*-BUTYL-P-CRESOL (CAS 128-37-0):
3 NOT CLASSIFIABLE AS TO CARCINOGENICITY TO HUMANS.

WHITE MINERAL OIL (CAS 8042-47-5):

3 NOT CLASSIFIABLE AS TO CARCINOGENICITY TO HUMANS.

OSHA SPECIFICALLY REGULATED SUBSTANCES (29 CFR 1910.1001-1052):
NOT REGULATED.

US. NATIONAL TOXICOLOGY PROGRAM (NTP) REPORT ON CARCINOGENS:
NOT LISTED.

REPRODUCTIVE TOXICITY:
THIS PRODUCT IS NOT EXPECTED TO CAUSE REPRODUCTIVE OR DEVELOPMENTAL EFFECTS.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE: NOT CLASSIFIED.

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE: NOT CLASSIFIED.

ASPIRATION HAZARD: NOT LIKELY, DUE TO THE FORM OF THE PRODUCT.

CHRONIC EFFECTS: PROLONGED EXPOSURE MAY CAUSE CHRONIC EFFECTS.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:
THIS PRODUCT IS NOT CLASSIFIED AS ENVIRONMENTALLY HAZARDOUS. HOWEVER, THIS DOES NOT EXCLUDE THE POSSIBILITY THAT LARGE OR FREQUENT SPILLS CAN HAVE A HARMFUL OR DAMAGING EFFECT ON THE ENVIRONMENT.

COMPONENTS	SPECIES	TEST RESULTS
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ZINC OXIDE (CAS 1314-13-2):		
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AQUATIC:

ACUTE:

CRUSTACEA	EC50	WATER FLEA (DAPHNIA MAGNA)	0.098 MG/L, 48 HOURS
FISH	LC50	RAINBOW TROUT DONALDSON TROUT (ONCORHYNCHUS MYKISS)	1.1 MG/L, 96 HOURS

PERSISTENCE AND DEGRADABILITY:

NO DATA IS AVAILABLE ON THE DEGRADABILITY OF ANY INGREDIENTS IN THE MIXTURE.

BIOACCUMULATIVE POTENTIAL:

BIOCONCENTRATION FACTOR (BCF):

ZINC OXIDE: 60690

MOBILITY IN SOIL: NO DATA AVAILABLE.

OTHER ADVERSE EFFECTS:

NO OTHER ADVERSE ENVIRONMENTAL EFFECTS (E.G. OZONE DEPLETION, PHOTOCHEMICAL OZONE CREATION POTENTIAL, ENDOCRINE DISRUPTION, GLOBAL WARMING POTENTIAL) ARE EXPECTED FROM THIS COMPONENT.

13. DISPOSAL CONSIDERATIONS

HAZARDOUS WASTE CODE: NOT REGULATED.

CONTAMINATED PACKAGING:
SINCE EMPLOYED CONTAINERS MAY BE RECYCLED, COLLECT AND RECLAIM OR DISPOSE EVEN AFTER CONTAINER IS EMPTIED. EMPTY CONTAINERS SHOULD BE TAKEN TO AN APPROVED WASTE HANDLING SITE FOR RECYCLING OR DISPOSAL.

DISPOSAL INSTRUCTIONS:

THIS PRODUCT IS NOT A RCRA HAZARDOUS WASTE (SEE 40 CFR PART 261.20 - 261.33). EMPTY CONTAINERS MAY BE RECYCLED, COLLECT AND RECLAIM OR DISPOSE IN SEaled CONTAINERS AT LICENSED WASTE DISPOSAL SITE. DO NOT ALLOW THIS MATERIAL TO DRAIN INTO SEWERS/STREET SURFACES. DO NOT COMBUSTE PAILS, WATERWAYS OR BULK TANKS WITH CHEMICAL OR USED CONTAINER. DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

14. TRANSPORT INFORMATION

DOT: NOT REGULATED AS DANGEROUS GOODS.

IATA: NOT REGULATED AS DANGEROUS GOODS.

IMDG: NOT REGULATED AS DANGEROUS GOODS.

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

THIS PRODUCT IS NOT KNOWN TO BE A "HAZARDOUS CHEMICAL" AS DEFINED BY THE OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200.

TSCA SECTION 12(B) EXPORT NOTIFICATION (40 CFR 707, SUBPT. D):
NOT REGULATED.

SARA 304 EMERGENCY RELEASE NOTIFICATION: NOT REGULATED.

OSHA SPECIFICALLY REGULATED SUBSTANCES (29 CFR 1910.1001-1052):
NOT REGULATED.

US EPCRA (SARA TITLE III) SECTION 313 - TOXIC CHEMICAL: LISTED SUBSTANCE

ZINC OXIDE (CAS 1314-13-2)

CERCLA HAZARDOUS SUBSTANCE LIST (40 CFR 302.4):

ZINC OXIDE (CAS 1314-13-2): LISTED.

CERCLA HAZARDOUS SUBSTANCES:
REPORTABLE QUANTITY: NOT LISTED.

SPILLS OR RELEASES RESULTING IN THE LOSS OF ANY INGREDIENT AT OR ABOVE ITS RQ REQUIRE IMMEDIATE NOTIFICATION TO THE NATIONAL RESPONSE CENTER (800-424-8802) AND TO YOUR LOCAL EMERGENCY PLANNING COMMITTEE.

OTHER FEDERAL REGULATIONS:

CLEAN AIR ACT (CAA) SECTION 112 HAZARDOUS AIR POLLUTANTS (HAPS) LIST:
NOT REGULATED.

CLEAN AIR ACT (CAA) SECTION 112(R) ACCIDENTAL RELEASE PREVENTION (40 CFR 68.130):
NOT REGULATED.

SAFE DRINKING WATER ACT (SDWA): NOT REGULATED.

FOOD AND DRUG ADMINISTRATION (FDA): NOT REGULATED.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA):

CLASSIFIED HAZARD CATEGORIES: ACUTE TOXICITY (ANY ROUTE OF EXPOSURE)
SARA 302 EXTREMELY HAZARDOUS SUBSTANCE: NOT LISTED.

SARA 313 (TRI REPORTING):

CHEMICAL NAME	CAS NUMBER	% BY WT.
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ZINC OXIDE	1314-13-2	5 - 10
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US STATE REGULATIONS:

US. NEW JERSEY WORKER AND COMMUNITY RIGHT-TO-KNOW ACT:

2, 6-DI-*tert*-BUTYL-P-CRESOL (CAS 128-37-0)

CALCIUM CARBONATE (CAS 1317-65-3):

QUARTZ (CAS 14808-60-7)

ZINC OXIDE (CAS 1314-13-2)

US. MASSACHUSETTS RTK - SUBSTANCE LIST:

2, 6-DI-*tert*-BUTYL-P-CRESOL (CAS 128-37-0)

CALCIUM CARBONATE (CAS 1317-65-3)

QUARTZ (CAS 14808-60-7)

WHITE MINERAL OIL (CAS 8042-47-5)

ZINC OXIDE (CAS 1314-13-2)

US. PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW LAW:

2, 6-DI-*tert*-BUTYL-P-CRESOL (CAS 128-37-0)

CALCIUM CARBONATE (CAS 1317-65-3)

QUARTZ (CAS 14808-60-7)

WHITE MINERAL OIL (CAS 8042-47-5)

ZINC OXIDE (CAS 1314-13-2)

US. RHODE ISLAND RTK:

2, 6-DI-*tert*-BUTYL-P-CRESOL (CAS 128-37-0)

CALCIUM CARBONATE (CAS 1317-65-3)

QUARTZ (CAS 14808-60-7)

WHITE MINERAL OIL (CAS 8042-47-5)

CALIFORNIA PROPOSITION 65:

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 2016 (PROPOSITION 65):

WARNING:

THIS MATERIAL IS NOT KNOWN TO CONTAIN ANY CHEMICALS CURRENTLY LISTED AS CARCINOGENS OR REPRODUCTIVE TOXINS.

US. CALIFORNIA CANDIDATE CHEMICALS LIST SAFER CONSUMER PRODUCTS REGULATIONS (CAL. CODE REGS., TIT. 22, 63502.3, SUBP. (A)):

QUARTZ (CAS 14808-60-7)

VOLATILE ORGANIC COMPOUNDS (VOC) REGULATIONS:

EPA:

VOC CONTENT (40 CFR 51.100(S)): NOT DETERMINED

CONSUMER PRODUCTS (40 CFR 59, SUBPT. C): NOT REGULATED

STATE:

CONSUMER PRODUCTS: NOT REGULATED

VOC CONTENT (CA): 0.3 %

VOC CONTENT (CTC): 0.3 %

INTERNATIONAL INVENTORIES:

COUNTRY(S) OR REGION

INVENTORY NAME

(YES/NO)*

ON INVENTORY

YES

NO

YES

YES

NO

NO

NO

NO

NO

NO

NEW ZEALAND	NEW ZEALAND INVENTORY	YES
PHILIPPINES	PHILIPPINE INVENTORY OF CHEMICALS AND CHEMICAL SUBSTANCES (PICCS)	NO
TAIWAN	TAIWAN TOXIC CHEMICAL SUBSTANCES (TCS)	YES
UNITED STATES & PUERTO RICO	TOXIC SUBSTANCES CONTROL ACT (TSCA) INVENTORY	YES

*A "YES" INDICATES THAT ALL COMPONENTS OF THIS PRODUCT COMPLY WITH THE INVENTORY REQUIREMENTS ADMINISTERED BY THE GOVERNING COUNTRY(S)
A "NO" INDICATES THAT ONE OR MORE COMPONENTS OF THE PRODUCT ARE NOT LISTED OR EXEMPT FROM LISTING ON THE INVENTORY ADMINISTERED BY THE GOVERNING COUNTRY(S).

16. OTHER INFORMATION, INCLUDING DATE
OF PREPARATION OR LAST REVISION

ISSUE DATE: 08-03-2015
REVISION DATE: 07-10-2018
PREPARED BY: ALLISON YOON
VERSION #: 03

DISCLAIMER:
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REVISION INFORMATION:
THIS DOCUMENT HAS UNDERGONE SIGNIFICANT CHANGES AND SHOULD BE REVIEWED IN ITS ENTIRETY.

MATERIAL NAME: MULTI PURPOSE FOOD GRADE GREASE
SDS US

SAFETY DATA SHEET

Mystik® JT-6® Hi-Temp Grease NLGI No. 2



Section 1. Identification

GHS product identifier : Mystik® JT-6® Hi-Temp Grease NLGI No. 2
Synonyms : Lubricant Grease 665005002
Material uses : Lubricant Grease
Code : 665005002
MSDS # : 665005002

Supplier's details : CITGO Petroleum Corporation
 P.O. Box 4689
 Houston, TX 77210
 sdsvend@citgo.com

Emergency telephone number (with hours of operation) : Technical Contact: (800) 248-4684
 Medical Emergency: (832) 486-4700
 CHEMTREC Emergency: (800) 424-9300
 (United States Only)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : AQUATIC HAZARD (LONG-TERM) - Category 4

GHS label elements

Signal word : Warning
Hazard statements : Injection under the skin can cause severe injury.
 Most damage occurs in the first few hours.
 Initial symptoms may be minimal.

Precautionary statements

General : Avoid contact with eyes, skin and clothing. Thoroughly wash exposed areas and clothing with soap and water. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: Do not induce vomiting. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention : Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : Injection of petroleum hydrocarbons requires immediate medical attention.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Lubricant Grease 665005002

CAS number/other identifiers

CAS number : Not applicable.

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy naphthenic	≥25 - ≤50	64742-52-5
Distillates (petroleum), hydrotreated heavy paraffinic	≥10 - ≤25	64742-54-7
Residual oils (petroleum), solvent-dewaxed	≤10	64742-62-7
Lithium, 12-hydroxyoctadecanoate sebacate complexes	≤10	68815-49-6
Distillates (petroleum), solvent-refined heavy paraffinic	≤3	64741-88-4

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal.
- Specific treatments** : Treat symptomatically and supportively.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : This material may cause long lasting harmful effects to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Do not apply heat or flame to stockpiled material. Rotate stock to reduce the potential for hot spots. Do not store with oxidizers. Minimize dust creation by keeping material moist and/or covered.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy naphthenic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Distillates (petroleum), hydrotreated heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Residual oils (petroleum), solvent-dewaxed	<p>ACGIH TLV (United States, 6/2013). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 4/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p>
Lithium, 12-hydroxyoctadecanoate sebacate complexes	<p>ACGIH TLV (United States). TWA: 10 mg/m³ 8 hours.</p>
Distillates (petroleum), solvent-refined heavy paraffinic	<p>ACGIH TLV (United States, 3/2016). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours.</p>

Section 8. Exposure controls/personal protection

NIOSH REL (United States, 10/2013).

TWA: 5 mg/m³ 10 hours. Form: Mist
STEL: 10 mg/m³ 15 minutes. Form: Mist

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Smooth texture]
- Color** : Red.
- Odor** : Mild petroleum odor
- pH** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: >150°C (>302°F) [Estimated]
- Evaporation rate** : <1 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 7%
- Vapor pressure** : <0.0013 kPa (<0.01 mm Hg) [room temperature]
- Vapor density** : >10 [Air = 1]
- Relative density** : 0.93

Section 9. Physical and chemical properties

Density lbs/gal	: Estimated 7.75 lbs/gal
Density gm/cm ³	: Not available.
Gravity, °API	: Estimated 21 @ 60 F
Solubility	: Insoluble in the following materials: cold water.
Auto-ignition temperature	: 390.56°C (735°F)
Flow time (ISO 2431)	: Not available.
NLGI Grade	: 2

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), hydrotreated heavy paraffinic	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), solvent-refined heavy paraffinic	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Conclusion/Summary	: Distillates (petroleum), hydrotreated heavy naphthenic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipid granuloma formation and lipid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects Distillates (petroleum), hydrotreated heavy paraffinic: Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipid granuloma formation and lipid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. Distillates (petroleum), solvent-refined heavy paraffinic: Mineral oil mists obtained from highly refined oils have low acute and subacute toxicity in animals. The effects of single and short repeated exposure to high concentrations of mineral oil mists well
---------------------------	--

Section 11. Toxicological information

above applicable workplace exposure levels include pulmonary inflammatory reaction, lipid granulocyte formation and lipid pneumonia. In acute and subacute studies involving exposures to lower concentrations of mineral oil mists in workplaces or near the workplace, exposure levels did not produce significant toxicological effects

Irritation/Corrosion

Not available.

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Not available.

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Not available.

Conclusion/Summary : No additional information.

Carcinogenicity

Not available.

Conclusion/Summary : **Distillates (petroleum), solvent-refined heavy paraffinic**: In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

Classification

Product/ingredient name	OSHA	IARC	NTP
Distillates (petroleum), solvent-refined heavy paraffinic	-	4	-

Reproductive toxicity

Not available.

Conclusion/Summary : No additional information.

Teratogenicity

Not available.

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Dermal.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor.

Ingestion : No known significant effects or critical hazards.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy naphthenic	-	-	Inherent

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Distillates (petroleum), hydrotreated heavy naphthenic	>6	-	high
Distillates (petroleum), solvent-refined heavy paraffinic	3.9 to 6	-	high

Mobility in soil

Section 12. Ecological information

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: zinc bis(dipentyldithiocarbamate)
Clean Water Act (CWA) 311: xylene

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Section 15. Regulatory information

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65 Clear and Reasonable Warnings (2018)

⚠ WARNING: This product can expose you to Cumene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
cumene	<0.01	Yes.	No.	-	-

International regulations

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Inventory list

United States : All components are listed or exempted.

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (ENCS):** Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : Not determined.

Thailand : Not determined.

Turkey : Not determined.

Viet Nam : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
AQUATIC HAZARD (LONG-TERM) - Category 4	Calculation method

History

Date of printing : 4/17/2018

Date of issue/Date of revision : 4/10/2018

Date of previous issue : 9/26/2017

Version : 3

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

References : Not available.

☑ Indicates information that has changed from previously issued version.

Notice to reader

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Mystik is a registered trademark of CITGO Petroleum Corporation



Safety Data Sheet

NEVER SEEZ REGULAR GRADE
Revision Number 3

Revision Date 09-May-2018
Supersedes Date: 24-Oct-2017

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product Name NEVER SEEZ REGULAR GRADE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use lubricant.
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Responsible Party

Bostik Inc.
11320 W. Watertown Plank Road
Wauwatosa, Wisconsin 53226 USA
Phone: +1 (800) 843-0844 (Domestic Toll Free)
Phone: +1 (414) 774-2250 (International)
Fax: +1 (414) 774-8075

E-mail msds@bostik-us.com

1.4. Emergency telephone number

Telephone: 1-800-227-0332
(Outside U.S.) 1-703-527-3887

Section 2: HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

Not a dangerous substance or mixture according to OSHA 29 CFR 1910.1200.

2.2. Label Elements

EMERGENCY OVERVIEW

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Paste **Physical State** Liquid **Odor** Petroleum distillates

Precautionary Statements - Prevention

Not applicable

Precautionary Statements - Response

Not applicable

Precautionary Statements - Storage

Not applicable

Safety Data Sheet

NEVER SEEZ REGULAR GRADE
Revision Number 3

Revision Date 09-May-2018
Supersedes Date: 24-Oct-2017

Precautionary Statements - Disposal
Not applicable

Hazards Not Otherwise Classified (HNOC)
Not applicable

2.3. Other Information

No information available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Mixture

3.2 Mixtures

Chemical Name	CAS No	Weight-%
Graphite	7782-42-5	10 - 30
Copper	7440-50-8	5 - 10
Zinc oxide	1314-13-2	1 - 5
Aluminum	7429-90-5	1 - 5

The exact percentage (concentration) of composition has been withheld as a trade secret.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	If medical advice is needed, have product container or label at hand.
Eye contact	In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/ attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

4.4. Reference to Other Sections

Reference to other sections Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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Section 11: TOXICOLOGY INFORMATION

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Dry chemical, CO₂, water spray or regular foam. Dike fire-control water for later disposal.

Unsuitable Extinguishing Media

Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific Hazards Arising from the Chemical

Some may burn but none ignite readily.

Explosion Data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

5.3. Advice for firefighters

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions

Use personal protective equipment as required. Do not touch or walk through spilled material. Stop leak if you can do it without risk.

6.2. Environmental precautions

Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment

Cover with plastic sheet to prevent spreading.

Methods for cleaning up

Use personal protective equipment as required. Take up with sand or other non-combustible absorbent material and place into containers for later disposal. With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Clean contaminated surface thoroughly.

6.4. Reference to other sections

Reference to other sections

Section 7: HANDLING AND STORAGE
Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
Section 13: DISPOSAL CONSIDERATIONS

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Use personal protective equipment as required. Handle in accordance with good industrial

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hygiene and safety practice. Do not eat, drink or smoke when using this product. Ensure adequate ventilation, especially in confined areas. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials None known based on information supplied.

7.3. Specific end use(s)

Other Information No information available.

7.4. References to Other Sections

Reference to other sections Section 13: DISPOSAL CONSIDERATIONS
Section 10: STABILITY AND REACTIVITY

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Guidelines . This product contains substances which in their raw state are powder form, however in this product they are in a non-respirable form. Inhalation of powder/dust particles is unlikely to occur from exposure to this product.

Chemical Name	ACGIH TLV	NIOSH IDLH	OSHA PEL	Mexico
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ natural respirable dust	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	TWA: 2 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	IDLH: 100 mg/m ³ dust, fume and mist IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³
Zinc oxide 1314-13-2	STEL: 10 mg/m ³ respirable particulate matter TWA: 2 mg/m ³ respirable particulate matter	IDLH: 500 mg/m ³ Ceiling: 15 mg/m ³ dust TWA: 5 mg/m ³ dust and fume STEL: 10 mg/m ³ fume	TWA: 5 mg/m ³ fume TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction	TWA: 5 mg/m ³ TWA: 10 mg/m ³ STEL: 10 mg/m ³
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust TWA: 5 mg/m ³ Al	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ TWA: 5 mg/m ³

Chemical Name	Argentina	Brazil	Chile	Venezuela
Graphite 7782-42-5	TWA: 2 mg/m ³	-	TWA: 1.75 mg/m ³	TWA: 2 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	-	TWA: 0.18 mg/m ³ TWA: 0.88 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Zinc oxide 1314-13-2	TWA: 5 mg/m ³ TWA: 10 mg/m ³ STEL: 10 mg/m ³	-	TWA: 4.4 mg/m ³	STEL: 10 mg/m ³ TWA: 2 mg/m ³ TWA: 10 mg/m ³
Aluminum 7429-90-5	TWA: 10 mg/m ³ TWA: 5 mg/m ³	-	TWA: 8.75 mg/m ³ TWA: 4.5 mg/m ³ TWA: 4.4 mg/m ³	TWA: 10 mg/m ³

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8.2. Exposure controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Personal protective equipment [PPE]

Eye/Face Protection Wear safety glasses with side shields (or goggles).
Skin and Body Protection Wear suitable chemical resistant gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality and various manufacturers.
Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Wash hands thoroughly after handling. Take off all contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid
Appearance Paste
Color Gray
Odor Petroleum distillates
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash Point	246 °C / 475 °F	
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor Pressure	No information available	
Vapor Density	No information available	
Relative Density	No information available	
		Water Solubility No information available
		Solubility in Other Solvents
		Partition Coefficient No information available
		Autoignition Temperature No information available
		Decomposition Temperature No information available

Kinematic Viscosity No information available

Dynamic Viscosity No information available

Explosive Properties No information available
Oxidizing Properties No information available

9.2. Other information

Softening Point No information available
Molecular Weight No information available

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Solvent content (%)	No information available
Solid content (%)	No information available
Density	1.190 g/cm ³
VOC	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

None under normal use conditions.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

None known based on information supplied.

10.6. Hazardous decomposition products

None known based on information supplied.

Section 11: TOXICOLOGY INFORMATION

11.1. Information on toxicological effects

Product Information	No data available
Inhalation	Based on available data, the classification criteria are not met.
Eye contact	Based on available data, the classification criteria are not met.
Skin Contact	Based on available data, the classification criteria are not met.
Ingestion	Based on available data, the classification criteria are not met.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc oxide 1314-13-2	> 5000 mg/kg (Rat)	LD50 >2000 mg/Kg (Rat) (OECD 402)	LC50 (4h) >5.7 mg/l
Aluminum 7429-90-5	LD50 >10,000 mg/Kg (Rat)(OECD Guideline 401)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms	No information available.
Skin Corrosion/Irritation	No information available.
Serious Eye Damage/Eye Irritation	No information available.
Irritation	No information available.
Corrosivity	No information available.
Sensitization	No information available.
Germ Cell Mutagenicity	No information available.
Reproductive Toxicity	No information available.

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Developmental Toxicity	No information available.
Teratogenicity	No information available.
STOT - Single Exposure	No information available.
STOT - Repeated Exposure	No information available.
Chronic Toxicity	No information available.
Target Organ Effects	No information available.
Aspiration hazard	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by ACGIH, OSHA, IARC or NTP at or above 0.1 wt%.

Section 12: ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a severe marine pollutant according to DOT.

12.1. Toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Copper 7440-50-8	EC50 96 h 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) EC50 72 h 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h = 0.8 mg/L (Cyprinus carpio static)		EC50 48 h = 0.03 mg/L (Daphnia magna Static)
Zinc oxide 1314-13-2	LC 50 (72Hr) 0.136 mg/L	LC50 (96h) =0.7 mg/L Fish (Danio rerio)		LC 50 (48Hr) =0.5 mg/l (Ceriodaphnia dubia)

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

Other adverse effects

No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal of Wastes

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations

Contaminated Packaging

Dispose of in accordance with federal, state and local regulations

Section 14: TRANSPORTATION INFORMATION

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Note: The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments made in non-bulk packages (see regulatory definition) The information shown here, may not always agree with the bill of lading shipping description for the material 49 CFR 171.4(c) "Exceptions. Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft."

DOT

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Copper, Zinc oxide), Marine Pollutant
Hazard Class	9
Packing Group	III
Special Provisions	8, 146, 173, 335, IB3, T4, TP1, TP29
Marine Pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Copper, Zinc oxide), 9, III, Marine Pollutant
Emergency Response Guide Number	171

IATA

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Copper, Zinc oxide)
Transport hazard class(es)	9
Packing Group	III
ERG Code	9L
Special Provisions	A97, A158, A197
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Copper, Zinc oxide), 9, III

IMDG

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Copper,Zinc oxide), Marine Pollutant
Transport hazard class(es)	9
Packing Group	III
EmS-No	F-A, S-F
Special Provisions	274, 335, 969
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Copper,Zinc oxide), 9, III, Marine Pollutant

Section 15: REGULATORY INFORMATION

Global Inventories

TSCA	Listed
DSL	Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL - Canadian Domestic Substances List

Listed - The components of this product are either listed or exempt from listing on inventory.

Not Listed - One or more components of this product are not listed on inventory.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

United States of America

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SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No
Copper	7440-50-8
Zinc oxide	1314-13-2
Aluminum	7429-90-5

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Europe

Restrictions of Use of Hazardous Substances (RoHS) Directive 2011/65/EU

This product does not contain Lead (7439-92-1), Cadmium (7440-43-9), Mercury (7439-97-6), Hexavalent chromium (7440-47-3), Polybrominated biphenyls (PBB), and Polybrominated diphenyl ethers (PBDE) above the regulated limit mentioned in this regulation.

EU-REACH (1907/2006) - Candidate List of Substances of Very High Concern (SVHC) for Authorization in accordance with Article 59

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

No information available

Key Literature References and Sources for Data

No information available

Prepared By	Product Safety & Regulatory Affairs
Revision Date	09-May-2018
Revision Note	SDS sections updated, 1, 5, 6, 8, 9, 12, 14, 16.
Training Advice	No information available
Further information	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



SAFETY DATA SHEET

Prepared according to OSHA, GHS and ANSI Z400.1-2004 standards

1. PRODUCT AND COMPANY INFORMATION

Product/Chemical Name: Polyvinyl Chloride/ Solvent Cement Mixture

Trade Names: **LOW VOC PVC Cement Products** 201 ENT Medium Body/ Blue Low VOC PVC Cement, 202 EZ 1 Regular Body/ Clear Low VOC PVC Cement, 203 Pool Pro Combo Medium Body/ Blue Low VOC PVC Cement, 204 Medium Body/ Clear Low VOC PVC Cement, 205 Regular Body/ Clear Low VOC PVC Cement, 206 Medium Body/ Gray Low VOC PVC Cement, 209 Industrial Grade Medium Body/ Cloudy Low VOC PVC Cement, 215 All Temperature Medium Body/ Clear Low VOC PVC Cement, 216 Heavy Body/ Gray Low VOC PVC Cement, 218 Heavy Body/ Clear Low VOC PVC Cement, 220T Transition Medium Body/ Green Low VOC PVC Cement, 222 Wet Weld® Medium Body/ Blue Low VOC PVC Cement

Recommended Use: Solvent Cement for PVC Materials

Product Part Number(s): **201-** 20103, 20104, 20105; **202-** 20201, 20202, 20203, 20204, 20205; **203-** 20301, 20302, 20303, 20304, 20305; **204-** 20401, 20402, 20403, 20404, 20405; **205-** 20501 20502, 20503, 20504, 20505; **206-** 20601, 20602, 20603, 20604, 20605; **209-** 20903, 20904, 20905; **215-** 21503, 21504, 21505; **216-** 21603, 21604, 21605; **218-** 21803, 21804, 21805; **220-** 22003, 22004; **222-** 22201, 22202, 22203, 22204, 22205

Manufacturer: E-Z Weld Group, LLC 1661 Old Dixie Hwy, Riviera Beach, FL 33404

Phone (281) 351-9889 Fax (281) 351-9896

www.e-zweld.com

In case of Emergency: CHEMTREC 1-800-424-9300 (U.S. and Canada) 1-703-527-3887 (International)

Preparation/ Revision Date: April 7, 2015

2. HAZARDS IDENTIFICATION

Appearance: Product comes in a variety of colors.

Odor: Ether-like

GHS SYMBOLS:



SIGNAL WORD: DANGER

Hazard Statements:

Extremely Flammable liquid and vapors.

Toxic in case of inhalation or ingestion.

Harmful in contact with skin.

Keep out of reach of children.

Read label before use.

Keep away from heat/ sparks/ open flames/ hot surfaces- DO NOT SMOKE.

Keep container tightly closed.

Do not breathe vapors.

Use only in open air and well-ventilated places.

Principal Hazards:

Skin or Eyes: Contact with this product can be irritating to contaminated skin and eyes. Vapors of this product can redden and irritate the eyes. If the eyes are contaminated with splashes, sprays or mists of this product, reddening, tearing, and corneal opacity can occur. The liquid can be mildly to severely irritating to contaminated skin (depending on duration of exposure). Prolonged or repeated skin over-exposures can lead to dermatitis. Skin absorption is a potential route of overexposure for Cyclohexanone (a component of this product).



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Inhalation: : Inhalation of vapors, mists, or sprays of this product can be irritating to the nose, throat, mucous membranes, and other tissues of the respiratory system. Symptoms of overexposure can include coughing, sneezing, and shortness of breath. Additionally, the components of this product are central nervous system depressants. Symptoms of over-exposure can include drowsiness, dizziness, fatigue, headache, nausea, and general anesthetic effects. Inhalation of high concentrations of this product (as may occur in a poorly-ventilated area) may be fatal. Based on clinical studies involving test animals, Cyclohexanone and Tetrahydrofuran, components of this product, may cause liver and kidney damage after long-term inhalation overexposures.

This product must be used with adequate ventilation. Mechanical exhaust may be needed. Ensure exposure to vapors is minimized by use of appropriate engineering controls, work practices, and personal protective equipment, as described in the remainder of this document.

Ingestion: Ingestion is not anticipated to be a significant route of occupational overexposure for this product. If ingestion occurs, refer to Section 4 (First-Aid Measures) and get medical help immediately. If ingestion of this product does occur, symptoms of such over-exposure can include nausea, vomiting, and other symptoms described for "Inhalation". Ingestion can also lead to liver and kidney damage. Ingestion of this product may be fatal.

Injection: Injection is not anticipated to be a significant route of over-exposure for this product. If injection does occur (i.e. through a puncture by an object contaminated with the product), local irritation and swelling can occur. Additional symptoms may include those described for "Inhalation".

See section 11 for complete health hazard information

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Hazardous ingredients:

CAS NUMER	INGREDIENT/ CHEMICAL NAME	PERCENT BY WEIGHT
109-99-9	TETRAHYDROFURAN	10-60
78-93-3	METHYL ETHYL KETONE	0-25
67-64-1	ACETONE	10-30
108-94-1	CYCLOHEXANONE	5-30
9002-86-2	POLYVINYL CHLORIDE RESIN	<20
112945-52-5	SILICON DIOXIDE	Balance

4. FIRST AID MEASURES

Eye Contact

If this product's liquid or vapors enter the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. The contaminated individual must seek immediate medical attention.

Skin Contact

If this product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. The contaminated individual must seek medical attention if any adverse effect occurs.



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Inhalation

If vapors, mists, or sprays of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

Ingestion

If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. The contaminated individual should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

The contaminated individual must be taken for medical attention, especially if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.

5. FIRE FIGHTING MEASURES**Flash Point**

Methyl Ethyl Ketone: -9°C (15°F) Tetrahydrofuran: -15.5°C (4.1°F)

Extinguishing Media

Foam, CO₂ or Dry Chemical. Cool fire exposed container with water.

Fire-Fighting Instructions

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. If it is safe to do so, allow small fires involving this product to burn-out, while protecting exposures. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse contaminated equipment thoroughly before returning such equipment to service.

Unusual Fire or Explosion Hazards

This is a Class I-B Flammable Liquid. When involved in a fire, this material may ignite and produce irritating vapors and toxic gases (e.g., carbon monoxide, carbon dioxide). This material will readily ignite at room temperature. The vapors are heavier than air and may travel to a source of ignition, and flash back to a leak or open container. Tetrahydrofuran can form potentially explosive peroxides; closed containers contaminated with peroxides can rupture violently in the heat of a fire.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: The vapors of this product can be ignited by static electrical energy.

6. ACCIDENTAL RELEASE MEASURES**Spill /Leak Procedures**

In case of a spill, clear the affected area and protect people. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Small releases (e.g., 1-pint) must be cleaned-up by personnel wearing gloves, goggles, and appropriate eye protection. Face shields must be worn if splashes or sprays of this product may be generated. In the event of a non-incident release (e.g., five, 1-gallon containers leaking simultaneously in a poorly-ventilated area), the minimum Personal Protective Equipment should be Level B: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus. Level B should always be used during responses in which the oxygen level is below 19.5% or unknown.

Waste Disposal Method

Dispose of in accordance with U.S. Federal, State, or local procedures, the applicable standards of Canada and its Provinces, or the appropriate requirements of European Community member States (see Section 13, Disposal Considerations).

Cleanup:

Eliminate all sources of ignition before spill clean-up begins. Use non-sparking tools. Absorb spilled liquid with activated carbon, polypads or other suitable absorbent materials. Monitor the area for combustible vapors and the



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level of oxygen. Monitoring must indicate less than 10% of the LEL (see Section 5, Fire- Fighting Measures) and greater than 19.5 % Oxygen is in the atmosphere before personnel are permitted in the area without Level B Protection. Place all spill residues in an appropriate container and seal. Place the bulk of any spilled material into drums.

7. HANDLING AND STORAGE

Precautions to Be Taken in Handling and Storing

Keep away from heat, sparks and flame. Avoid breathing vapor.

Handling Precautions

All employees who handle this material should be trained to handle it safely. Containers of this product must be properly labeled. If this mixture is used in other types of containers, only use portable containers approved for flammable liquids. Post "NO SMOKING" signs, where appropriate in storage and use areas. Use non-sparking tools. Bond and ground during transfer of material. Empty containers may contain residual flammable liquid or vapors. Therefore, empty containers should be handled with care. Do not expose "empty" containers to welding touches, or any other source of ignition.

Storage Requirements

Store containers of the product in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers, or in a designated area, as appropriate. Storage areas should be made of fire-resistant materials. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Refer to NFPA 30, Flammable and Combustible Liquids Code for additional information on storage.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Component Exposure Limits:

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA; 100 ppm STEL

Skin - potential significant contribution to overall exposure by the cutaneous route

OSHA: 200 ppm TWA; 590 mg/m³ TWA

NIOSH: 200 ppm TWA; 590 mg/m³ TWA; 250 ppm STEL; 735 mg/m³ STEL

Methyl Ethyl Ketone (78-93-3)

ACGIH: 200 ppm TWA; 300 ppm STEL

OSHA: 200 ppm TWA; 590 mg/m³ TWA

NIOSH: 200 ppm TWA; 590 mg/m³ TWA; 300 ppm STEL; 885 mg/m³ STEL

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA; 50 ppm STEL

Skin - potential significant contribution to overall exposure by the cutaneous route

OSHA: 50 ppm TWA; 200 mg/m³ TWA

NIOSH: 25 ppm TWA; 100 mg/m³ TWA

Potential for dermal absorption

Acetone (67-64-1)

ACGIH: 500 ppm TWA; 750 ppm STEL

OSHA: 1000 ppm TWA; 2400 mg/m³ TWA

NIOSH: 250 ppm TWA; 590 mg/m³ TWA

Ventilation: Mechanical exhaust may be needed. If the product is used in a confined area, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). Explosion-proof equipment is required.

Respiratory Protection: Respiratory protection is not generally needed when using this product. Maintain airborne contaminant concentrations below guidelines listed in this section. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134 or applicable State regulations. Use supplied air respiration protection if



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oxygen levels are below 19.5% or are unknown. Respiratory protection guidelines for Tetrahydrofuran (a component of this product) are provided as follows.

NIOSH/OSHA RECOMMENDATIONS FOR TETRAHYDROFURAN CONCENTRATIONS IN AIR UP TO 2000 ppm:

Supplied Air Respirator (SAR) operated in a continuous-flow mode, full-facepiece chemical cartridge respirator with organic vapor cartridge(s), gas mask with organic vapor canister, powered air-purifying respirator with organic vapor cartridge(s), full-facepiece Self-Contained Breathing Apparatus (SCBA), or full-facepiece SAR.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS: Positive pressure, full-facepiece SCBA or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

ESCAPE: Gas mask with organic vapor canister or escape-type SCBA.

NOTE: The IDLH concentration for Tetrahydrofuran is 2000 ppm. This value is based on the lower explosive limit (LEL). Respiratory protection equipment may not be adequate for fire situations.

Protective Gloves: Wear gloves for routine industrial use to protect hands from contact. For long exposures, or unusual contact, such as spill cleanup, chemical resistant gloves may be required. See section 6.

Eye Protection: Splash goggles or safety glasses. Face shield should be worn when working in situations in which splashes or sprays can be generated. Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Other Protective Clothing or Equipment: Use body protection appropriate for task (e.g., Apron or Tyvek suit).

Other/Hygienic Practices: Wash with soap and water after use. Never eat or drink in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Product comes in a variety of colors.

Physical State: Liquid

Odor: Ether-like

Odor Threshold: 2.48–3.47 ppm (Tetrahydrofuran)

pH: Not determined

Freezing Point: Not determined

Melting Point: Not determined

Boiling Point and Boiling Range: Not determined

Flash Point: Not determined

Evaporation Rate: (n-Butyl acetate) >1

Flammability: NFPA Class IB

Vapor Pressure: Not determined

Specific Gravity (H₂O=1, at 4 °C): < 1.0

Water Solubility: Somewhat soluble.

Partition coefficient (n-octanol/ water): Not determined

Auto-ignition temperature: Methyl Ethyl Ketone: 404°C (759°F) Tetrahydrofuran: 321°C (610°F)

Decomposition temperature: Not determined

Viscosity: Not available

10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Note: Tetrahydrofuran, a component of this product, can form potentially explosive peroxide compounds when exposed to light or air. Though this product contains inhibitors to prevent peroxide formation, care should be used when storing this product, or handling old containers of this material.

Conditions to Avoid: Avoid exposure or contact to extreme temperatures, sources of ignition, incompatible chemicals.



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Incompatible Materials: This product will not be compatible with strong oxidizers, lithium aluminum hydride, and alkaline earth hydroxides.

Polymerization: Polymerization is not expected to present a significant hazard.

Hazardous Decomposition or byproducts: Carbon monoxide, carbon dioxide, silicon and chloride compounds.

11. TOXICOLOGICAL INFORMATION

ACUTE EXPOSURE

Component Analysis (LD50/ LC50)

Tetrahydrofuran (CAS# 109-99-9)

Inhalation-Rat LC50: 21,000 ppm/3H, Oral-Rat LD50: 1650 mg/kg.

Methyl Ethyl Ketone (CAS# 78-93-3)

Oral-Rat LD50: 2737 mg/kg, Inhalation-Rat LC50: 23,500 mg/m³/8hr, Inhalation-Mouse LC50: 40 g/m³/2hr

Cyclohexanone (CAS# 108-94-1)

Inhalation-Rat LC50: 8000 ppm/4 hours, Oral-Rat LD50: 1535 mg/kg, Oral-Mouse LD50: 1400 mg/kg

Silicon Dioxide (CAS# 112945-52-5)

Oral-Rat LD50: 3160 mg/kg

Eye Irritation: Can cause irritation, tearing and blurred vision.

Skin Irritation: Can cause irritation, redness and defatting (dryness).

Ingestion Health Risks: Causes nausea, headache, dizziness, stupor, and /or diarrhea. Ingestion of this product at high concentration may be fatal.

Respiratory Irritation: Can cause respiratory irritation and headache.

Dermal Toxicity: Severe irritation and defatting. Can cause a rash.

Inhalation Toxicity: Inhalation of product's vapors at high concentrations may be fatal

Target Organs: Skin, eyes, respiratory system, central nervous system.

CHRONIC EXPOSURE

Chronic Toxicity: Prolonged or repeated skin exposures can lead to dermatitis (dryness, reddening and irritation of the skin). Tetrahydrofuran, a component of this product, may cause liver and kidney damage after long-term inhalation overexposures. There is limited evidence from animal studies that Methyl Ethyl Ketone, a component of this product, is a reproductive toxin.

Target Organs: Liver, Kidneys.

Carcinogenicity:

Tetrahydrofuran (CAS# 109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Acetone (CAS# 67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Cyclohexanone (CAS# 108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Silicon Dioxide (CAS# 112945-52-5)

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

Mutagenicity: This product is not reported to produce mutagenic effects in humans. Human mutation data are available for Cyclohexanone (a component of this product); these data were obtained on specific human tissues exposed to relatively high doses. Animal mutation data are available for Methyl Ethyl Ketone, Silicon Dioxide, and Tetrahydrofuran (components of this product); these data were obtained during clinical studies on specific animal tissues or micro-organisms exposed to high doses of these compounds.



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Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. Reproductive toxicity data are available for Methyl Ethyl Ketone and Tetrahydrofuran (components of this product); these data were obtained from clinical studies on test animals exposed to relatively high doses.

Teratogenicity: This product is not reported to cause teratogenic effects in humans. Three animal studies involving Methyl Ethyl Ketone (a component of this product) have shown fetotoxicity (skeletal anomalies) at doses which did not produce significant maternal toxicity.

12. ECOLOGICAL INFORMATION**ENVIRONMENTAL TOXICITY**

Aquatic Life Toxicity: This product can be harmful or fatal to contaminated aquatic plant or animal life, especially if released in large quantity in a body of water. The following aquatic toxicity data are available for the components of this product:

CYCLOHEXANONE:

LC₅₀ (*Pimephales promelas* fathead minnow) 527 mg/L 96 hours
EC₀ (bacteria *Pseudomonas putida*) 16 hours = 180 mg/L
EC₀ (algae *Microcystis aeruginosa*) 8 days = 52 mg/L
EC₀ (green algae *Scenedesmus quadricauda*) 7 days = 370 mg/L
EC₀ (protozoa *Entosiphon sulcatum*) 72 hours = 545 mg/L
EC₀ (protozoa *Uronema parduczi* Chatton-Lwoff) = 280 mg/L
EC₀ (bacteria *Pseudomonas fluorescens*) 16 hours = 180 mg/L (pH = 7)
EC₀ (*Chilomonas paramecium* Ehrenberg) 48 hours = 573 mg/L
EC₀ (*Daphnia magna* Straus) 24 hours = 526 mg/L
EC₅₀ (*Daphnia magna* Straus) 24 hours = 820 mg/L
EC₁₀₀ (*Daphnia magna* Straus) 24 hours = 1,240 mg/L
EC₀ (*Daphnia magna*) 24 hours = 540 mg/L
EC₅₀ (*Daphnia magna*) 24 hours = 800 mg/L
EC₁₀₀ (*Daphnia magna*) 24 hours = 1,540 mg/L
LC₅₀ (fathead minnow) 96 hours = 526; 618; 630 mg/L
LC₅₀ (*Leuciscus idus*) 24 hours = 538 mg/L
LC₅₀ (*Leuciscus idus*) 96 hours = 536; 539; 752 mg/L

METHYL ETHYL KETONE:

EC₀ (*Scenedesmus quadricauda*, green algae) = 4300 mg/L/ 8 days
EC₀ (*Entosiphon sulcatum*, protozoa) = 190 mg/L/ 72 hours

METHYL ETHYL KETONE (continued):

EC₀ (*Uronema parduczi* Chatton-Lwoff, protozoa) = 2830 mg/L EC₀ (*Pseudomonas putida*, bacteria) = 1150 mg/L/ 16 hours
LC₅₀ (*Pimephales promelas*, fathead minnow) = 3200 mg/L/96 hour
LD₀ (*Pseudomonas*, bacteria) = 2,500 mg/L
LD₀ (*Scenedesmus*, algae) = 12,500 mg/L
LD₀ (*Colpoda*, protozoa) = 5,000 mg/L
LC₅₀ (mosquito fish) = 5,600 mg/L/ 24 96 hours
LC₅₀ (bluegill) = 5,640 1,690 mg/L/ 24 96 hours
LC₅₀ (goldfish) = 5,000 mg/L/ 24 hours

TETRAHYDROFURAN:

Growth Inhibition (*Microcystis*, blue algae) = 225 mg/L Toxicity Threshold (Cell Multiplication Inhibit System test): (*Uronema parduczi* Chatton-Lwoff, protozoa) = 858 mg/L (*Pseudomonas putida*, bacteria) = 580 mg/L (*Microcystis aeruginosa*, algae) = 225 mg/L
LC₅₀ (silver/golden orfe) = 2820-2930 mg/L LC₅₀ (fathead minnow) = 2160 mg/L/ 96 hours
LC₅₀ (carp) = 4400 mg/L/ 48 hours
LC₅₀ (goldfish) = 2400 mg/L/ 48 hour

ENVIRONMENTAL DATA

Biodegradation: The components of this product will biodegrade into other organic compounds.

Environmental data are available for components of this product, as follows:

ACETONE: Log K_{ow} = -0.24. Water Solubility= Miscible. Acetone is quite readily degraded in the environment. BO D = 122%; 5 day s. The potential for bioconcentration in fish is negligible. One experimental study of bioconcentration in adult haddock at 7-9°C (static test) resulted in a BCF of 0.69.

CYCLOHEXANONE: KOC - 0.81. Water Solubility 23,000 mg/L. Cyclohexanone is not rapidly volatilized from water, except for fast moving streams or very shallow ponds. Significant soil leaching occurs, contributing to ground water contamination. Biodegradation and photolysis occur in water. Rapid atmospheric degradation occurs via photolysis, with a half-life of about 1 to 5 days.

METHYL ETHYL KETONE: Log K_{ow} = 0.29. Water Solubility = 239,000 mg/L. Methyl Ethyl Ketone is rapidly volatilized from water and undergoes slow biodegradation. It undergoes moderate atmospheric photodegradation.

TETRAHYDROFURAN: Water Solubility = 30% (25°C). Tetrahydrofuran is significantly biodegraded in standard tests. This compound is not expected to bioconcentrate in fish significantly.

Bioaccumulation: Not determined.

Soil Mobility: Not determined



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VOC INFORMATION: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist. **Max. VOC Level for E-Z Weld 201, 202, 203, 204, 205, 206, 209, 215, 216, 218, 220 and 222: 510 g/l as per SCAQMD Test Method 1168/316A.**

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada and its Provinces, as well as those applicable to the EC Member States. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

U.S. EPA WASTE NUMBER: D001 (Characteristic/Ignitability)

14. TRANSPORT INFORMATION

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN Number: 1133

Transport Hazard Class/ Packing Group: Class 3 (Flammable Liquid), Group II DOT LABEL(S)

Required Labels: Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN Number: 1133

Transport Hazard Class/ Packing Group: Class 3 (Flammable Liquid), Group II DOT LABEL(S)

Required Labels: None (Limited Quantities are expected from labeling)

Marine Pollutant: N

IMDG Code: 3230

15. REGULATORY INFORMATION

U.S. Federal Regulations:

Component Analysis

The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, and are listed as follows:

CHEMICAL NAME	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Cyclohexanone (CAS# 108-94-1)	Yes	Yes
Methyl Ethyl Ketone (CAS# 78-93-3)	Yes	Yes
Tetrahydrofuran (CAS# 109-99-9)	Yes	No

U.S. CERCLA REPORTABLE QUANTITY (RQ): Cyclohexanone = 5000 lb; MEK: 5000 lb; Tetrahydrofuran = 1000 lb.

TSCA: All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

State Regulations

The following components appear on one or more of the following state hazardous substances list:

CHEMICAL NAME	CAS	AK	CA	FL	IL	KS	MA	MN	MO	NJ	ND	PA	RI	TX	WV	WI
Tetrahydrofuran	109-99-9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Methyl Ethyl Ketone	78-93-3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cyclohexanone	108-94-1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

CALIFORNIA, SAFE DRINKING WATER AND TO XIC ENFORCEMENT ACT (PROPOSITION 65): This product may contain trace constituents, such as vinyl chloride, present in one of the product's components. Under common usage, exposures to these trace constituents at levels exceeding the "no significant risk level" (NSRL) would not occur. Users

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are expected to follow normal PPE and ventilation guidelines such as those in section 8 and other portions of this MSDS.

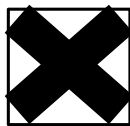
Canadian Federal Regulations:

The components of this product are on the DSL Inventory.

WHMIS Symbols: Class B2: Flammable Liquid Class D2A/B: Materials Causing Other Toxic Effects.

EINECS: All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS). Based on the information on the product's components and an assessment of the physical and health hazards associated with the material, the following assignments have been made (per council directive 67/548/EEC)

EC CLASSIFICATION: Highly Flammable; Carcinogenic Category 3; Harmful; Irritant. [F;Carc.Cat.3;Xn;Xi]

EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOLS:

EINECS Components: Primary components of this product under European Community Regulation are Tetrahydrofuran, Methyl Ethyl Ketone, Cyclohexanone and Acetone.

16. OTHER INFORMATION

Prepared by: Karla A. Torruellas, Technical Manager

Revision Summary: Revision # 2

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration.

Other Information**NFPA and HMIS:**

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G



Manufacturer Disclaimer: Information given herein is offered in good faith as accurate, but without guarantee.

Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.



Propane

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 05/12/2016 Date of issue: 05/12/2016

Version: 2.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Propane

Synonyms: Propane HD-5, Liquefied Petroleum Gas

1.2. Intended Use of the Product

Use of the substance/mixture: Hydrocarbon

1.3. Name, Address, and Telephone of the Responsible Party

Company

MarkWest Energy Partners, L.P.

1515 Arapahoe Street

Tower 1, Suite 1600

Denver, Colorado 80202-2126

800-730-8388

<http://www.markwest.com/>

1.4. Emergency Telephone Number

Emergency Number : 800-730-8388, 800-424-9300 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Simple Asphy

Flam. Gas 1 H220

Liquefied gas H280

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements (GHS-US)

: P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P403 - Store in a well-ventilated place.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. Asphyxiant gas, can be fatal. May cause damage to the blood, central nervous system, and cardiovascular system. High concentrations of gas can cause unconsciousness and death. Being under the influence of alcohol may enhance the effects of this product.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Propane	(CAS No) 74-98-6	98	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280

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Butane	(CAS No) 106-97-8	0 - 2	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280
Ethane	(CAS No) 74-84-0	0 - 2	Simple Asphy Flam. Gas 1, H220 Liquefied gas, H280

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists. Thaw frosted parts with lukewarm water. Do not rub affected area.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: May cause frostbite on contact with the liquid. This product is an asphyxiant. Lack of oxygen can be fatal.

Symptoms/Injuries After Inhalation: Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Asphyxia by lack of oxygen: risk of death. May cause drowsiness or dizziness.

Symptoms/Injuries After Skin Contact: Contact with the liquid may cause cold burns/frostbite.

Symptoms/Injuries After Eye Contact: This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Non-irritating, but solid and liquid forms of this material and pressurized gas may cause freeze burns.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Leaking gas fire, do not fight fire unless leak can be stopped safely. Foam, dry chemical, carbon dioxide, water spray, fog

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Extremely flammable gas.

Explosion Hazard: May form flammable/explosive vapor-air mixture. Heating may cause an explosion. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leaking gas fire, eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use special care to avoid static electric charges. Eliminate every possible source of ignition. Keep away from heat/sparks/open flames/hot surfaces - No smoking. Avoid breathing (gas, vapors, mist, spray). Use only outdoors or in a well-ventilated area. Ruptured cylinders may rocket. Do not allow product to spread into the environment.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

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6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Notify authorities if liquid enters sewers or public waters. Use only non-sparking tools.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Isolate area until gas has dispersed. Use water spray to disperse vapors. For water based spills contact appropriate authorities and abide by local regulations for hydrocarbon spills into waterways. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable. Extremely flammable gas. Do not pressurize, cut, or weld containers. Do not puncture or incinerate container. Liquid gas can cause frost-type burns.

Precautions for Safe Handling: Keep away from heat, sparks, open flames, hot surfaces. - No smoking. Avoid breathing gas, spray. Use only outdoors or in a well-ventilated area.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations. Use explosion proof equipment.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep in fireproof place. Store in a well-ventilated place. Keep container tightly closed. Keep/Store away from extremely high or low temperatures, ignition sources, direct sunlight, incompatible materials. Store in original container.

Incompatible Products: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Hydrocarbon.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Propane (74-98-6)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1800 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	2100 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Butane (106-97-8)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1900 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	800 ppm
Ethane (74-84-0)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm

8.2. Exposure Controls

Appropriate Engineering Controls

: Gas detectors should be used when flammable gases/vapors may be released. Ensure adequate ventilation, especially in confined areas. Proper grounding procedures to avoid static electricity should be followed. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use explosion-proof equipment.

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Personal Protective Equipment	: Protective goggles. Protective clothing. Respiratory protection of the dependent type. Insulated gloves.
	
Materials for Protective Clothing	: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.
Hand Protection	: Wear chemically resistant protective gloves. Insulated gloves.
Eye Protection	: Chemical goggles or face shield.
Respiratory Protection	: Use a NIOSH-approved self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.
Thermal Hazard Protection	: Wear suitable protective clothing.
Other Information	: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Colorless gas (Clear liquid under pressure)
Odor	: Rotten eggs
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: > 1
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: -42 °C (-43.6 °F)
Flash Point	: -106 °C (-158.8 °F)
Auto-ignition Temperature	: > 426 °C (798.8 °F)
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Extremely flammable gas
Vapor Pressure	: 37.8C
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Specific Gravity	: 0.52
Solubility	: Water: Moderate
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

9.2. Other Information No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Extremely flammable gas.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.
- 10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers, halogens, chlorine.
- 10.6. Hazardous Decomposition Products:** Carbon oxides (CO, CO₂), hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Propane (74-98-6)	
LC50 Inhalation Rat	658 mg/l/4h

Propane

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Butane (106-97-8)	
LC50 Inhalation Rat	30957 mg/m ³ (Exposure time: 4 h)
Ethane (74-84-0)	
LC50 Inhalation Rat	658 mg/l/4h

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Asphyxia by lack of oxygen: risk of death. May cause drowsiness or dizziness.

Symptoms/Injuries After Skin Contact: Contact with the liquid may cause cold burns/frostbite.

Symptoms/Injuries After Eye Contact: This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Non-irritating, but solid and liquid forms of this material and pressurized gas may cause freeze burns.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity No additional information available

12.2. Persistence and Degradability

Propane	
Persistence and Degradability	Product is biodegradable.

12.3. Bioaccumulative Potential

Propane	
Bioaccumulative Potential	Not expected to bioaccumulate.

Propane (74-98-6)	
Log Pow	2.3

Butane (106-97-8)	
Log Pow	2.89

Ethane (74-84-0)	
Log Pow	<= 2.8

12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Adverse Effects : Can cause frost damage to vegetation.

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED

Hazard Class : 2.1

Identification Number : UN1075

Label Codes : 2.1

ERG Number : 115

14.2. In Accordance with IMDG

Proper Shipping Name : PROPANE



Propane

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard Class : 2
Identification Number : UN1978
Label Codes : 2.1
EmS-No. (Fire) : F-D
EmS-No. (Spillage) : S-U



14.3. In Accordance with IATA

Proper Shipping Name : PROPANE
Identification Number : UN1978
Hazard Class : 2
Label Codes : 2.1
ERG Code (IATA) : 10L



SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Propane	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard
Propane (74-98-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Butane (106-97-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Ethane (74-84-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2 US State Regulations

Propane (74-98-6)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Idaho - Occupational Exposure Limits - TWAs
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities
U.S. - Oregon - Permissible Exposure Limits - TWAs
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

Propane

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Butane (106-97-8)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
 U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
 U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
 U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
 U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
 U.S. - Maine - Chemicals of High Concern
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
 RTK - U.S. - Massachusetts - Right To Know List
 U.S. - Michigan - Occupational Exposure Limits - TWAs
 U.S. - Minnesota - Chemicals of High Concern
 U.S. - Minnesota - Hazardous Substance List
 U.S. - Minnesota - Permissible Exposure Limits - TWAs
 U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
 U.S. - New Jersey - Environmental Hazardous Substances List
 RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - New Jersey - Special Health Hazards Substances List
 U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)
 U.S. - New York - Occupational Exposure Limits - TWAs
 U.S. - Ohio - Accidental Release Prevention - Threshold Quantities
 U.S. - Oregon - Permissible Exposure Limits - TWAs
 RTK - U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - Tennessee - Occupational Exposure Limits - TWAs
 U.S. - Texas - Effects Screening Levels - Long Term
 U.S. - Texas - Effects Screening Levels - Short Term
 U.S. - Vermont - Permissible Exposure Limits - TWAs
 U.S. - Washington - Permissible Exposure Limits - STELS
 U.S. - Washington - Permissible Exposure Limits - TWAs

Ethane (74-84-0)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
 U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
 U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
 U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
 U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
 U.S. - Delaware - Volatile Organic Compounds Exempt from Requirements
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
 RTK - U.S. - Massachusetts - Right To Know List
 U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements
 U.S. - Minnesota - Hazardous Substance List
 U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
 U.S. - New Jersey - Environmental Hazardous Substances List
 U.S. - New Jersey - Excluded Volatile Organic Compounds
 RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - New Jersey - Special Health Hazards Substances List
 U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)
 U.S. - Ohio - Accidental Release Prevention - Threshold Quantities
 U.S. - Oregon - Permissible Exposure Limits - TWAs
 RTK - U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - Texas - Effects Screening Levels - Long Term

Propane

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

U.S. - Texas - Effects Screening Levels - Short Term

U.S. - Washington - Permissible Exposure Limits - Simple Asphyxiants

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/12/2016
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

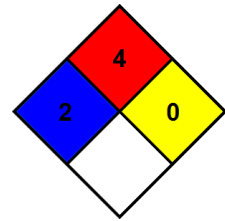
GHS Full Text Phrases:

Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

NFPA Health Hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA Fire Hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA Reactivity Hazard : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)

SAFETY DATA SHEET

K00111800

Section 1. Identification

Product name : RUST TOUGH® 250 Enamel Safety Blue
Product code : K00111800
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : Krylon Products Group
101 Prospect Avenue NW
Cleveland, OH 44115

Emergency telephone number of the company : US/Canada: (800) 424-9300
Mexico: CHEMTREC Mexico 01-800-681-9531. Available 24 hours and 365 days per year

Product Information Telephone Number : US/Canada: (800) 247-3266
Mexico: Not Available

Regulatory Information Telephone Number : US/Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US/Canada: (800) 424-9300
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Fertility) - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 14.4%

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 28.4%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 28.4%

GHS label elements

Section 2. Hazards identification

Hazard pictograms



- Signal word** : Danger
- Hazard statements** :
: Flammable liquid and vapor.
: Causes serious eye irritation.
: Causes skin irritation.
: May cause an allergic skin reaction.
: May cause cancer.
: May damage fertility or the unborn child.
: May be fatal if swallowed and enters airways.
: May cause respiratory irritation.
: May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

- Prevention** :
: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection.
: Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.
: Contaminated work clothing must not be allowed out of the workplace.

- Response** :
: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED:

Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

- Storage** :
: Store locked up. Store in a well-ventilated place. Keep cool.

- Disposal** :
: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **FOR INDUSTRIAL USE ONLY.** Adequate ventilation required when sanding or abrading the dried film. If Adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release Crystalline Silica which has been shown to cause lung damage and cancer under long term exposure.

Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.

- Hazards not otherwise classified** :
: **DANGER:** Rags, steel wool, other waste soaked with this product, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled, metal container. Dispose of in accordance with local fire regulations.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Light Aliphatic Hydrocarbon	≥10 - ≤17	64742-47-8
p-Chlorobenzotrifluoride	≥10 - ≤25	98-56-6
Titanium Dioxide	≤10	13463-67-7
2-methoxy-1-methylethyl acetate	≤2	108-65-6
Hydrotreated Heavy Petroleum Naphtha	<1	64742-48-9
Crystalline Silica, respirable powder	<1	14808-60-7
Lt. Aliphatic Hydrocarbon Solvent	<1	64742-89-8
Xylene, mixed isomers	<1	1330-20-7
1-Methyl-2-Pyrrolidone	<1	872-50-4
Methyl Ethyl Ketoxime	≤0.3	96-29-7
Calcium 2-Ethylhexanoate	≤0.3	136-51-6
2-(2-Methoxyethoxy)-ethanol	≤0.3	111-77-3
Cobalt 2-Ethylhexanoate	≤0.3	136-52-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- : Causes serious eye irritation.
- : May cause respiratory irritation.
- : Causes skin irritation. May cause an allergic skin reaction.
- : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- : Adverse symptoms may include the following:
pain or irritation
watering
redness

- : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

- : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

- : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

- : No specific treatment.

- : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- : Use dry chemical, CO₂, water spray (fog) or foam.

media

- : Do not use water jet.

media

Section 5. Fire-fighting measures

Specific hazards arising from the chemical

: Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
carbonyl halides
metal oxide/oxides

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 3/2019). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours. None.
p-Chlorobenzotrifluoride Titanium Dioxide	98-56-6 13463-67-7	ACGIH TLV (United States, 3/2019). TWA: 10 mg/m ³ 8 hours. OSHA PEL (United States, 5/2018). TWA: 15 mg/m ³ 8 hours. Form: Total dust AIHA WEEL (United States, 7/2018). TWA: 50 ppm 8 hours.
2-methoxy-1-methylethyl acetate	108-65-6	None.
Hydrotreated Heavy Petroleum Naphtha Crystalline Silica, respirable powder	64742-48-9 14808-60-7	OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 5/2018). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2019). TWA: 0.025 mg/m ³ 8 hours. Form:

Section 8. Exposure controls/personal protection

<p>Lt. Aliphatic Hydrocarbon Solvent Xylene, mixed isomers</p>	<p>64742-89-8 1330-20-7</p>	<p>Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m³ 10 hours. Form: respirable dust None. ACGIH TLV (United States, 3/2019). TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours. AIHA WEEL (United States, 7/2018). Absorbed through skin. TWA: 10 ppm 8 hours. AIHA WEEL (United States, 7/2018). Skin sensitizer. TWA: 10 ppm 8 hours. None. None. ACGIH TLV (United States, 3/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co) 8 hours.</p>
<p>1-Methyl-2-Pyrrolidone</p>	<p>872-50-4</p>	
<p>Methyl Ethyl Ketoxime</p>	<p>96-29-7</p>	
<p>Calcium 2-Ethylhexanoate 2-(2-Methoxyethoxy)-ethanol Cobalt 2-Ethylhexanoate</p>	<p>136-51-6 111-77-3 136-52-7</p>	

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
<p>Petroleum refining, hydrotreated light distillate</p>	<p>64742-47-8</p>	<p>CA British Columbia Provincial (Canada, 5/2019). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapour) 8 hours. CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 200 mg/m³, (as total hydrocarbon vapour) 8 hours. CA Ontario Provincial (Canada, 1/2018). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapour) 8 hours. CA British Columbia Provincial (Canada, 5/2019). TWA: 3 mg/m³ 8 hours. Form: Respirable dust TWA: 10 mg/m³ 8 hours. Form: Total dust CA Quebec Provincial (Canada, 1/2014). TWA: 10 mg/m³ 8 hours. Form: Total dust. CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m³ 8 hours. CA Ontario Provincial (Canada, 1/2018). TWA: 10 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m³ 15 minutes. TWA: 10 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 5/2019).</p>
<p>Titanium dioxide</p>	<p>13463-67-7</p>	
<p>Quartz</p>	<p>14808-60-7</p>	

Section 8. Exposure controls/personal protection

		<p>TWA: 0.025 mg/m³ 8 hours. Form: Respirable CA Quebec Provincial (Canada, 1/2014). TWA: 0.1 mg/m³ 8 hours. Form: Respirable dust. CA Ontario Provincial (Canada, 1/2018). TWA: 0.1 mg/m³ 8 hours. Form: Respirable fraction. CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.025 mg/m³ 8 hours. Form: Respirable particulate CA Saskatchewan Provincial (Canada, 7/2013). TWA: 0.05 mg/m³ 8 hours. Form: respirable fraction CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 100 ppm 8 hours. 15 min OEL: 651 mg/m³ 15 minutes. 15 min OEL: 150 ppm 15 minutes. 8 hrs OEL: 434 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 5/2019). TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes. CA Quebec Provincial (Canada, 1/2014). TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEV: 150 ppm 15 minutes. STEV: 651 mg/m³ 15 minutes. CA Ontario Provincial (Canada, 1/2018). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours. CA Ontario Provincial (Canada, 1/2018). TWA: 400 mg/m³ 8 hours. AIHA WEEL (United States, 7/2018). Skin sensitizer. TWA: 10 ppm 8 hours. CA Ontario Provincial (Canada, 1/2018). TWA: 0.02 mg/m³, (as Co) 8 hours. Form: Inorganic CA British Columbia Provincial (Canada, 5/2019). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co, Total) 8 hours. CA Quebec Provincial (Canada, 1/2014). Skin sensitizer. TWA: 0.02 mg/m³, (as Co) 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 0.06 mg/m³, (measured as Co) 15 minutes. TWA: 0.02 mg/m³, (measured as Co) 8 hours.</p>
Xylene	1330-20-7	
N-Methyl pyrrolidone	872-50-4	
Methyl Ethyl Ketoxime	96-29-7	
Cobalt 2-Ethylhexanoate	136-52-7	

Section 8. Exposure controls/personal protection

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 3/2019). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Cobalt 2-Ethylhexanoate	136-52-7	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 0.02 mg/m ³ , (as Co) 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Public

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point/freezing point	: Not available.
Boiling point/boiling range	: 138°C (280.4°F)
Flash point	: Closed cup: 38°C (100.4°F) [Tagliabue Closed Cup]
Evaporation rate	: 0.35 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 0.9% Upper: 13.1%
Vapor pressure	: 0.71 kPa (5.3 mm Hg) [at 20°C]
Vapor density	: 4.6 [Air = 1]
Relative density	: 1.1
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): <0.205 cm ² /s (<20.5 cSt)
Molecular weight	: Not applicable.
Aerosol product	
Heat of combustion	: 14.167 kJ/g

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
p-Chlorobenzotrifluoride 2-methoxy-1-methylethyl acetate	LD50 Oral	Rat	13 g/kg	-
	LD50 Dermal	Rabbit	>5 g/kg	-
Hydrotreated Heavy Petroleum Naphtha	LD50 Oral	Rat	8532 mg/kg	-
	LC50 Inhalation Vapor	Rat	8500 mg/m ³	4 hours
Xylene, mixed isomers	LD50 Oral	Rat	>6 g/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
1-Methyl-2-Pyrrolidone	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Dermal	Rabbit	8 g/kg	-
Methyl Ethyl Ketoxime	LD50 Oral	Rat	3914 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
Cobalt 2-Ethylhexanoate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	1.22 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium Dioxide	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
Xylene, mixed isomers	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
1-Methyl-2-Pyrrolidone	Skin - Mild irritant	Rat	-	8 hours 60 UI	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Methyl Ethyl Ketoxime	Skin - Moderate irritant	Rabbit	-	100 %	-
	Eyes - Moderate irritant	Rabbit	-	100 mg	-
2-(2-Methoxyethoxy)-ethanol	Eyes - Severe irritant	Rabbit	-	100 UI	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
Eyes - Moderate irritant	Rabbit	-	500 mg	-	

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Titanium Dioxide	-	2B	-
Crystalline Silica, respirable powder	-	1	Known to be a human carcinogen.
Xylene, mixed isomers	-	3	-
Cobalt 2-Ethylhexanoate	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Light Aliphatic Hydrocarbon	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation
p-Chlorobenzotrifluoride	Category 3	Not applicable.	Respiratory tract irritation
2-methoxy-1-methylethyl acetate	Category 3	Not applicable.	Narcotic effects
Hydrotreated Heavy Petroleum Naphtha	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation
Lt. Aliphatic Hydrocarbon Solvent	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation
Xylene, mixed isomers	Category 3	Not applicable.	Respiratory tract irritation
1-Methyl-2-Pyrrolidone	Category 3	Not applicable.	Respiratory tract irritation
2-(2-Methoxyethoxy)-ethanol	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Light Aliphatic Hydrocarbon	Category 2	Not determined	Not determined
Hydrotreated Heavy Petroleum Naphtha	Category 2	Not determined	Not determined
Crystalline Silica, respirable powder	Category 1	Inhalation	Not determined
Lt. Aliphatic Hydrocarbon Solvent	Category 2	Not determined	Not determined
Xylene, mixed isomers	Category 2	Not determined	Not determined
2-(2-Methoxyethoxy)-ethanol	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Light Aliphatic Hydrocarbon	ASPIRATION HAZARD - Category 1
Hydrotreated Heavy Petroleum Naphtha	ASPIRATION HAZARD - Category 1
Lt. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1
Xylene, mixed isomers	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : May cause respiratory irritation.
Skin contact : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General

: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity

: May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity

: No known significant effects or critical hazards.

Teratogenicity

: May damage the unborn child.

Developmental effects

: No known significant effects or critical hazards.

Fertility effects

: May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Light Aliphatic Hydrocarbon	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days
Titanium Dioxide	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
Lt. Aliphatic Hydrocarbon	Acute LC50 >100000 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
Solvent			
Xylene, mixed isomers	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
1-Methyl-2-Pyrrolidone	Acute LC50 1.23 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 832 ppm Fresh water	Fish - Lepomis macrochirus	96 hours
Methyl Ethyl Ketoxime	Acute LC50 843000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
2-(2-Methoxyethoxy)-ethanol	Acute EC50 >930 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 7500000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Xylene, mixed isomers	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Hydrotreated Heavy Petroleum Naphtha	-	10 to 2500	high
Lt. Aliphatic Hydrocarbon	-	10 to 2500	high
Solvent			
Xylene, mixed isomers	-	8.1 to 25.9	low
Methyl Ethyl Ketoxime	-	2.5 to 5.8	low
Calcium 2-Ethylhexanoate	-	2.96	low
Cobalt 2-Ethylhexanoate	-	15600	high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects







: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT. Marine pollutant (Light Aliphatic Hydrocarbon, p-Chlorobenzotrifluoride)
Transport hazard class(es)	3 	3 	3 	3 	3  
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	Yes. The environmentally hazardous substance mark is not required.	Yes.
Additional information	This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. <u>ERG No.</u> 128	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).	-	The environmentally hazardous substance mark may appear if required by other transportation regulations.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Emergency Schedules</u> F-E, S-E
	<u>ERG No.</u> 128	<u>ERG No.</u> 128	<u>ERG No.</u> 128		

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according : Not available.

to Annex II of MARPOL and the IBC Code

Section 14. Transport information

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

TSCA 5(a)2 proposed significant new use rules: 1-Methyl-2-Pyrrolidone

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists

: **Australia inventory (AICS):** Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	* 3
Flammability	2
Physical hazards	0

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.
Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.
[Procedure used to derive the classification](#)

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Date of issue/Date of revision

K00111800

: 2/7/2020

Date of previous issue

: 11/27/2019

Version : 24

16/17

SHW-85-NA-GHS-US

Section 16. Other information

History

Date of printing : 2/7/2020
Date of issue/Date of revision : 2/7/2020
Date of previous issue : 11/27/2019
Version : 24

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

▀ Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

Public



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

Safety Data Sheet P-18-13729

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 07/22/2016

SECTION 1: Product and company identification

1.1. Product identifier

Product form	: Mixture
Name	: ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)
Other means of identification	: Mixture of Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane and Methane

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Industrial use. Use as directed.
------------------------------	------------------------------------

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number	: Onsite Emergency: 1-800-645-4633
	: CHEMTREC, 24 hr/day 7 days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Gas 1	H220
Compressed gas	H280
Aquatic Acute 3	H402

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS02

GHS04

Signal word (GHS-US)	: DANGER
Hazard statements (GHS-US)	: H220 - EXTREMELY FLAMMABLE GAS H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED H402 - HARMFUL TO AQUATIC LIFE CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
Precautionary statements (GHS-US)	: P210 - Keep away from Heat/Open flames/Sparks/Hot surfaces. - No smoking P273 - Avoid release to the environment P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely P381 - Eliminate all ignition sources if safe to do so P501 - Dispose of contents/container in accordance with container Supplier/owner instructions CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

Safety Data Sheet P-18-13729

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 07/22/2016

P271+P403 - Use and store only outdoors or in a well-ventilated place

2.3. Other hazards

Other hazards not contributing to the classification : Asphyxiant in high concentrations.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Methane	(CAS No) 74-82-8	88.1 - 99.9999
Ethane	(CAS No) 74-84-0	0.00001 - 5.5
Nitrogen	(CAS No) 7727-37-9	0.00001 - 2.7
Propane	(CAS No) 74-98-6	0.00001 - 1.1
Carbon dioxide	(CAS No) 124-38-9	0.00001 - 1.1
Butane	(CAS No) 106-97-8	0.00001 - 0.4
Isobutane	(CAS No) 75-28-5	0.00001 - 0.4
2,2-Dimethylpropane	(CAS No) 463-82-1	0.00001 - 0.2
n-Pentane	(CAS No) 109-66-0	0.00001 - 0.2
Isopentane	(CAS No) 78-78-4	0.00001 - 0.2
n-Hexane	(CAS No) 110-54-3	0.00001 - 0.1

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog. Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : **EXTREMELY FLAMMABLE GAS.**

Explosion hazard : **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

Safety Data Sheet P-18-13729

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 07/22/2016

5.3. Advice for firefighters

Firefighting instructions	: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
Protection during firefighting	: Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen. DANGER! FLAMMABLE, HIGH PRESSURE GAS.
Special protective equipment for fire fighters	: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Other information	: Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.)

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.
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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment
	Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking" or "Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

n-Hexane (110-54-3)		
ACGIH	ACGIH TLV-TWA (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
2,2-Dimethylpropane (463-82-1)		
ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
n-Pentane (109-66-0)		
ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2950 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Isopentane (78-78-4)		
ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
USA OSHA	Not established	
Butane (106-97-8)		
ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm
USA OSHA	Not established	
Isobutane (75-28-5)		
ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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Isobutane (75-28-5)		
USA OSHA	Not established	
Propane (74-98-6)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
ACGIH	Not established	
Carbon dioxide (124-38-9)		
ACGIH	ACGIH TLV-TWA (ppm)	5000 ppm
ACGIH	ACGIH TLV-STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
Nitrogen (7727-37-9)		
ACGIH	Not established	
USA OSHA	Not established	
Ethane (74-84-0)		
ACGIH	Not established	
USA OSHA	Not established	
Methane (74-82-8)		
ACGIH	Not established	
USA OSHA	Not established	

8.2. Exposure controls

Appropriate engineering controls	: Use an explosion-proof local exhaust system. Local exhaust and general ventilation must be adequate to meet exposure standards. MECHANICAL (GENERAL): Inadequate - Use only in a closed system. Use explosion proof equipment and lighting. Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).
Eye protection	: Wear safety glasses with side shields.
Skin and body protection	: Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible.
Respiratory protection	: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Thermal hazard protection	: Wear cold insulating gloves when transfilling or breaking transfer connections.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Colour	: Colourless
Odour	: No data available
Odour threshold	: No data available
pH	: Not applicable.



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: Not applicable.
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Water: No data available
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

n-Hexane (110-54-3)	
LD50 oral rat	25 g/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE US (oral)	25000.000 mg/kg bodyweight



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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n-Hexane (110-54-3)	
ATE US (dermal)	3000.000 mg/kg bodyweight
ATE US (gases)	48000.000 ppmv/4h
2,2-Dimethylpropane (463-82-1)	
LC50 inhalation rat (ppm)	178109 ppm/1h
ATE US (gases)	89054.500 ppmv/4h
n-Pentane (109-66-0)	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	364 g/m ³ (Exposure time: 4 h)
LC50 inhalation rat (ppm)	246702 ppm/1h
ATE US (dermal)	3000.000 mg/kg bodyweight
ATE US (gases)	123351.000 ppmv/4h
ATE US (vapours)	364.000 mg/l/4h
ATE US (dust,mist)	364.000 mg/l/4h
Butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 g/m ³ (Exposure time: 4 h)
ATE US (vapours)	658.000 mg/l/4h
ATE US (dust,mist)	658.000 mg/l/4h
Isobutane (75-28-5)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	285000 ppm/1h
ATE US (gases)	142500.000 ppmv/4h
ATE US (vapours)	658.000 mg/l/4h
ATE US (dust,mist)	658.000 mg/l/4h
Propane (74-98-6)	
Ethane (74-84-0)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
ATE US (vapours)	658.000 mg/l/4h
ATE US (dust,mist)	658.000 mg/l/4h

Skin corrosion/irritation	: Not classified
	pH: Not applicable.
Serious eye damage/irritation	: Not classified
	pH: Not applicable.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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n-Hexane (110-54-3)	
LC50 fish 1	2.54 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
n-Pentane (109-66-0)	
LC50 fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
Isopentane (78-78-4)	
EC50 Daphnia 1	2.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. Persistence and degradability

ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)	
Persistence and degradability	No ecological damage caused by this product.
2,2-Dimethylpropane (463-82-1)	
Persistence and degradability	No data available.
Isopentane (78-78-4)	
Persistence and degradability	Not established.
Butane (106-97-8)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
Isobutane (75-28-5)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
Propane (74-98-6)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
Carbon dioxide (124-38-9)	
Persistence and degradability	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Persistence and degradability	No ecological damage caused by this product.
Ethane (74-84-0)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
Methane (74-82-8)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

12.3. Bioaccumulative potential

ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
2,2-Dimethylpropane (463-82-1)	
Log Pow	3.11
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
n-Pentane (109-66-0)	
Log Pow	3.39
Isopentane (78-78-4)	
Log Pow	3.2 - 3.3
Bioaccumulative potential	Not established.
Butane (106-97-8)	
Log Pow	2.89
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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Isobutane (75-28-5)	
BCF fish 1	1.57 - 1.97
Log Pow	2.76
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
Propane (74-98-6)	
Log Pow	2.36
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
Carbon dioxide (124-38-9)	
BCF fish 1	(no bioaccumulation)
Log Pow	0.83
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Ethane (74-84-0)	
Log Pow	1.81
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
Methane (74-82-8)	
Log Pow	1.09
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
12.4. Mobility in soil	
ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)	
Mobility in soil	No data available.
2,2-Dimethylpropane (463-82-1)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Butane (106-97-8)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Isobutane (75-28-5)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Propane (74-98-6)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Carbon dioxide (124-38-9)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Ethane (74-84-0)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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Methane (74-82-8)

Ecology - soil

Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on the ozone layer : None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1954 Compressed gas, flammable, n.o.s., 2.1

UN-No.(DOT) : UN1954

Proper Shipping Name (DOT) : Compressed gas, flammable, n.o.s.

Hazard labels (DOT) : 2.1 - Flammable gas



DOT Symbols : G - Identifies proper shipping name (PSN) requiring the addition of technical name(s) in parentheses following the PSN

Additional information

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1954

Proper Shipping Name (IMDG) : COMPRESSED GAS, FLAMMABLE, N.O.S.

Class (IMDG) : 2.1 - Flammable gases

Air transport

UN-No. (IATA) : 1954

Proper Shipping Name (IATA) : COMPRESSED GAS, FLAMMABLE, N.O.S.

Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

n-Hexane (110-54-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting : 1.0 %

n-Pentane (109-66-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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n-Pentane (109-66-0)

EPA TSCA Regulatory Flag

T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA

15.2. International regulations

CANADA

n-Hexane (110-54-3)

Listed on the Canadian DSL (Domestic Substances List)

2,2-Dimethylpropane (463-82-1)

Listed on the Canadian DSL (Domestic Substances List)

n-Pentane (109-66-0)

Listed on the Canadian DSL (Domestic Substances List)

Isopentane (78-78-4)

Listed on the Canadian DSL (Domestic Substances List)

Butane (106-97-8)

Listed on the Canadian DSL (Domestic Substances List)

Isobutane (75-28-5)

Listed on the Canadian DSL (Domestic Substances List)

Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

Carbon dioxide (124-38-9)

Listed on the Canadian DSL (Domestic Substances List)

Nitrogen (7727-37-9)

Listed on the Canadian DSL (Domestic Substances List)

Ethane (74-84-0)

Listed on the Canadian DSL (Domestic Substances List)

Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

n-Hexane (110-54-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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n-Hexane (110-54-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Japanese Pollutant Release and Transfer Register Law (PRTR Law)
 Listed on the Canadian IDL (Ingredient Disclosure List)
 Listed on INSQ (Mexican national Inventory of Chemical Substances)
 Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)()

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

n-Hexane (110-54-3)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

2,2-Dimethylpropane (463-82-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

n-Pentane (109-66-0)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Isopentane (78-78-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Butane (106-97-8)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

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Isobutane (75-28-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
Propane (74-98-6)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
Carbon dioxide (124-38-9)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
Nitrogen (7727-37-9)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
Ethane (74-84-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
Methane (74-82-8)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	
n-Hexane (110-54-3)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List				
2,2-Dimethylpropane (463-82-1)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List				
n-Pentane (109-66-0)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List				
Isopentane (78-78-4)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List				



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

Safety Data Sheet P-18-13729

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 07/22/2016

Isopentane (78-78-4)

U.S. - Pennsylvania - RTK (Right to Know) List

Butane (106-97-8)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Isobutane (75-28-5)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Propane (74-98-6)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Carbon dioxide (124-38-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Nitrogen (7727-37-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Ethane (74-84-0)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Methane (74-82-8)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List



ME - Butane, Carbon dioxide, Ethane, Hexane, Isobutane, Isopentane, Neopentane, Nitrogen, Pentane, Propane (11 Component Range)

Safety Data Sheet P-18-13729

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 07/22/2016

SECTION 16: Other information

Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc, P.O. Box 44, Tonawanda, NY 14151-0044)

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SDS US (GHS HazCom 2012) - PDI

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Helium, compressed

Safety Data Sheet P-4602

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

SECTION 1: Product and company identification

1.1. Product identifier

Product form	: Substance
Name	: Helium, compressed
CAS No	: 7440-59-7
Formula	: He
Other means of identification	: Helium-4, refrigerant gas R-704, LaserStar Helium, Medipure Helium, UltraLift Helium, Helium - Diving Grade

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Industrial use Medical applications Diving Gas (Underwater Breathing)
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1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
10 Riverview Drive
Danbury, CT 06810-6268 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number	: Onsite Emergency: 1-800-645-4633
	: CHEMTREC, 24hr/day 7days/week — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)

SECTION 2: Hazard identification


2.1. Classification of the substance or mixture

GHS-US classification

Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)	: 
	: GHS04
Signal word (GHS-US)	: WARNING
Hazard statements (GHS-US)	: H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
Precautionary statements (GHS-US)	: P202 - Do not handle until all safety precautions have been read and understood P271 - Use and store only outdoors or in a well-ventilated area P403 - Use and store only outdoors or in a well-ventilated place CGA-PG05 - Use a back flow preventive device in the piping CGA-PG10 - Use only with equipment rated for cylinder pressure CGA-PG06 - Close valve after each use and when empty CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

2.3. Other hazards

Other hazards not contributing to the	: Asphyxiant in high concentrations.
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Helium, compressed

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Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

classification

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Name : Helium, compressed
CAS No : 7440-59-7

Name	Product identifier	%
Helium	(CAS No) 7440-59-7	99.5 - 100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Adverse effects not expected from this product. In case of eye irritation: Rinse immediately with plenty of water. Consult an ophthalmologist if irritation persists.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.

Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen.

Special protective equipment for fire fighters : Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems

Stop flow of product if safe to do so

Use water spray or fog to knock down fire fumes if possible.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do so.



Making our planet more productive™

Helium, compressed

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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

Safe use of the product

: **The suitability of this product as a component in underwater breathing gas mixtures** is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Helium, compressed (7440-59-7)	
ACGIH	Not established
USA OSHA	Not established
Helium (7440-59-7)	
ACGIH	Not established
USA OSHA	Not established



Helium, compressed

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Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

8.2. Exposure controls

Appropriate engineering controls	: Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.
Eye protection	: Wear safety glasses with side shields.
Skin and body protection	: Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138.
Respiratory protection	: When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 4 g/mol
Color	: Colorless.
Odor	: Odorless.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -272 °C
Freezing point	: No data available
Boiling point	: -268.93 °C
Flash point	: No data available
Critical temperature	: -268 °C
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable.
Critical pressure	: 230 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.166 kg/m ³
Relative gas density	: 0.14
Solubility	: Water: 1.5 mg/l
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available

9.2. Other information

Gas group	: Compressed gas
Additional information	: None



Helium, compressed

Safety Data Sheet P-4602

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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

None.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

12.2. Persistence and degradability

Helium, compressed (7440-59-7)

Persistence and degradability	No ecological damage caused by this product.
-------------------------------	--

Helium (7440-59-7)

Persistence and degradability	No ecological damage caused by this product.
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12.3. Bioaccumulative potential

Helium, compressed (7440-59-7)

Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.

Helium (7440-59-7)

Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.

Helium, compressed

Safety Data Sheet P-4602

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Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

Helium (7440-59-7)	
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Helium, compressed (7440-59-7)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

Helium (7440-59-7)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer : None

Effect on the global warming : None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1046 Helium, compressed, 2.2
 UN-No.(DOT) : UN1046
 Proper Shipping Name (DOT) : Helium, compressed
 Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
 Hazard labels (DOT) : 2.2 - Non-flammable gas



Additional information

Emergency Response Guide (ERG) Number : 120 (UN1963);121 (UN1046)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
 - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1046
 Proper Shipping Name (IMDG) : HELIUM, COMPRESSED
 Class (IMDG) : 2 - Gases
 MFAG-No : 121

Air transport

UN-No. (IATA) : 1046
 Proper Shipping Name (IATA) : Helium, compressed
 Class (IATA) : 2
 Civil Aeronautics Law : Gases under pressure/Gases nonflammable nontoxic under pressure



Helium, compressed

Safety Data Sheet P-4602

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Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

SECTION 15: Regulatory information

15.1. US Federal regulations

Helium, compressed (7440-59-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard
-------------------------------------	-----------------------------------

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Helium, compressed (7440-59-7)

Listed on the Canadian DSL (Domestic Substances List)

Helium (7440-59-7)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Helium, compressed (7440-59-7)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Helium, compressed (7440-59-7)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

Helium, compressed(7440-59-7)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Helium (7440-59-7)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
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Helium, compressed

Safety Data Sheet P-4602

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

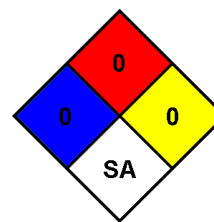
Date of issue: 01/01/1979 Revision date: 10/17/2016 Supersedes: 06/23/2015

Helium (7440-59-7)				
No	No	No	No	
Helium (7440-59-7)				
U.S. - Massachusetts - Right To Know List				
U.S. - New Jersey - Right to Know Hazardous Substance List				
U.S. - Pennsylvania - RTK (Right to Know) List				

SECTION 16: Other information

- Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product
- Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information
- The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product
- Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc, P.O. Box 44, Tonawanda, NY 14151-0044)
- PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

- NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
- NFPA fire hazard : 0 - Materials that will not burn.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
- NFPA specific hazard : SA - This denotes gases which are simple asphyxiants.



HMIS III Rating

- Health : 0 Minimal Hazard - No significant risk to health
- Flammability : 0 Minimal Hazard
- Physical : 3 Serious Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



SAFETY DATA SHEET

HEAVY DUTY DEGREASER

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : HEAVY DUTY DEGREASER

Other means of identification : Not applicable

Recommended use : Degreaser

Restrictions on use : Reserved for industrial and professional use.

Product dilution information : 1.6 % - 50.0 %

Company : Ecolab Inc.
4050 Corporate Dr., #100
Grapevine, Texas USA 76051-2326
1-866-999-7484

Emergency health information : 1-866-897-8061 (US/Canada), 952-852-4656 (outside US)

Issuing date : 10/25/2016

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Product AS SOLD

Eye irritation : Category 2B

Product AT USE DILUTION

Eye irritation : Category 2B

GHS label elements

Product AS SOLD

Signal Word : Warning

Hazard Statements : Causes eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Product AT USE DILUTION

Signal Word : Warning

Hazard Statements : Causes eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

SAFETY DATA SHEET

HEAVY DUTY DEGREASER

Product AS SOLD

Other hazards : None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Product AS SOLD

Pure substance/mixture : Mixture

Chemical name	CAS-No.	Concentration (%)
Sodium Carbonate(soda)	497-19-8	5 - 10
Sodium Xylenesulfonate	1300-72-7	5 - 10
ethylenediamine tetraacetate	64-02-8	1 - 5
Alcohols, C9-11, ethoxylated	68439-46-3	1 - 5
alcohols, c10-14, ethoxylated	66455-15-0	1 - 5
Sodium hydroxide	1310-73-2	0.1 - 1

Product AT USE DILUTION

Chemical name	CAS-No.	Concentration (%)
Sodium Carbonate(soda)	497-19-8	1 - 5
Sodium Xylenesulfonate	1300-72-7	1 - 5
ethylenediamine tetraacetate	64-02-8	1 - 5

SECTION 4. FIRST AID MEASURES

Product AS SOLD

In case of eye contact : Rinse with plenty of water.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Product AT USE DILUTION

In case of eye contact : Rinse with plenty of water.

In case of skin contact : Rinse with plenty of water.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

SECTION 5. FIRE-FIGHTING MEASURES

Product AS SOLD

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

SAFETY DATA SHEET

HEAVY DUTY DEGREASER

- Specific hazards during fire fighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides
Nitrogen oxides (NO_x)
Sulfur oxides
Oxides of phosphorus
- Special protective equipment for fire-fighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Product AS SOLD

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Product AT USE DILUTION

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

SECTION 7. HANDLING AND STORAGE

Product AS SOLD

- Advice on safe handling : Wash hands thoroughly after handling.
- Conditions for safe storage : Do not store near acids. Keep out of reach of children. Store in suitable labeled containers.
- Storage temperature : -5 °C to 50 °C

Product AT USE DILUTION

SAFETY DATA SHEET

HEAVY DUTY DEGREASER

Advice on safe handling : Wash hands thoroughly after handling.

Conditions for safe storage : Do not store near acids. Keep out of reach of children. Store in suitable labeled containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Product AS SOLD

Ingredients with workplace control parameters

Ingredients	CAS-No.	Form of exposure	Permissible concentration	Basis
sodium hydroxide	1310-73-2	Ceiling	2 mg/m ³	ACGIH
		Ceiling	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z1

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

Product AT USE DILUTION

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Product AS SOLD	Product AT USE DILUTION
Appearance	: liquid	liquid
Color	: clear, purple	purple
Odor	: citrus	citrus
pH	: 12.4 - 13.2, 100 %	12.2 - 13.0
Flash point	: Not applicable, Does not sustain combustion.	
Odor Threshold	: No data available	

SAFETY DATA SHEET**HEAVY DUTY DEGREASER**

Melting point/freezing point	: No data available
Initial boiling point and boiling range	: 100 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1.12 - 1.14
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: No data available
VOC	: No data available

SECTION 10. STABILITY AND REACTIVITY**Product AS SOLD**

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Acids
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides Nitrogen oxides (NO _x) Sulfur oxides Oxides of phosphorus

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects**Product AS SOLD**

Eyes : Causes eye irritation.

SAFETY DATA SHEET

HEAVY DUTY DEGREASER

Skin : Health injuries are not known or expected under normal use.
 Ingestion : Health injuries are not known or expected under normal use.
 Inhalation : Health injuries are not known or expected under normal use.
 Chronic Exposure : Health injuries are not known or expected under normal use.

Product AT USE DILUTION

Eyes : Causes eye irritation.
 Skin : Health injuries are not known or expected under normal use.
 Ingestion : Health injuries are not known or expected under normal use.
 Inhalation : Health injuries are not known or expected under normal use.
 Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure**Product AS SOLD**

Eye contact : Redness, Irritation
 Skin contact : No symptoms known or expected.
 Ingestion : No symptoms known or expected.
 Inhalation : No symptoms known or expected.

Product AT USE DILUTION

Eye contact : Redness, Irritation
 Skin contact : No symptoms known or expected.
 Ingestion : No symptoms known or expected.
 Inhalation : No symptoms known or expected.

Toxicity**Product AS SOLD****Product**

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
 Acute inhalation toxicity : No data available
 Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg
 Skin corrosion/irritation : Mild skin irritation
 Serious eye damage/eye irritation : Mild eye irritation
 Respiratory or skin sensitization : No data available
 Carcinogenicity : No data available
 Reproductive effects : No data available
 Germ cell mutagenicity : No data available
 Teratogenicity : No data available

SAFETY DATA SHEET**HEAVY DUTY DEGREASER**

STOT-single exposure : No data available
 STOT-repeated exposure : No data available
 Aspiration toxicity : No data available

SECTION 12. ECOLOGICAL INFORMATION**Product AS SOLD
Ecotoxicity**

Environmental Effects : Harmful to aquatic life.

Product

Toxicity to fish : No data available
 Toxicity to daphnia and other aquatic invertebrates : No data available
 Toxicity to algae : No data available

Ingredients

Toxicity to fish : Sodium Carbonate(soda)
 96 h LC50 Lepomis macrochirus (Bluegill sunfish): 300 mg/l

ethylenediamine tetraacetate
 96 h LC50 Fish: 121 mg/l

Alcohols, C9-11, ethoxylated
 96 h LC50 Fish: 8.5 mg/l

alcohols, c10-14, ethoxylated
 96 h LC50 Fish: 1.125 mg/l

Ingredients

Toxicity to daphnia and other aquatic invertebrates : Sodium Carbonate(soda)
 48 h EC50 Ceriodaphnia (water flea): 213.5 mg/l

Alcohols, C9-11, ethoxylated
 48 h EC50 Daphnia magna (Water flea): 5.3 mg/l

Sodium hydroxide
 48 h EC50: 40 mg/l

Ingredients

Toxicity to algae : Sodium Xylenesulfonate
 96 h EC50: 230 mg/l

Persistence and degradability

Product AS SOLD
 Poorly biodegradable

Product AT USE DILUTION
 Poorly biodegradable

Bioaccumulative potential

No data available

Mobility in soil

SAFETY DATA SHEET**HEAVY DUTY DEGREASER**

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Product AS SOLD**

Disposal methods : Do not contaminate ponds, waterways or ditches with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.

RCRA - Resource Conservation and Recovery Authorization Act Hazardous waste : D002 (Corrosive)

Product AT USE DILUTION

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Diluted product can be flushed to sanitary sewer.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.

SECTION 14. TRANSPORT INFORMATION**Product AS SOLD**

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Not dangerous goods

Sea transport (IMDG/IMO)

Not dangerous goods

SECTION 15. REGULATORY INFORMATION**Product AS SOLD****EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ
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SAFETY DATA SHEET

HEAVY DUTY DEGREASER

			(lbs)
Sodium hydroxide	1310-73-2	1000	147493

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

Switzerland. New notified substances and declared preparations :
not determined

United States TSCA Inventory :
On TSCA Inventory

Canadian Domestic Substances List (DSL) :
This product contains one or several components listed in the Canadian NDSL.

Australia Inventory of Chemical Substances (AICS) :
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemical Substances :
On the inventory, or in compliance with the inventory

Japan. ENCS - Existing and New Chemical Substances Inventory :
not determined

Japan. ISHL - Inventory of Chemical Substances (METI) :
not determined

Korea. Korean Existing Chemicals Inventory (KECI) :
not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS) :
not determined

China. Inventory of Existing Chemical Substances in China (IECSC) :
not determined

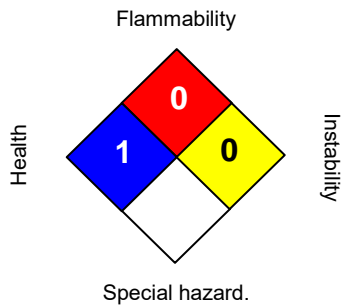
SECTION 16. OTHER INFORMATION

Product AS SOLD

SAFETY DATA SHEET

HEAVY DUTY DEGREASER

NFPA:



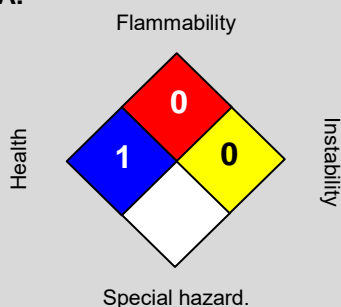
HMIS III:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Product AT USE DILUTION

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Issuing date : 10/25/2016
Version : 1.2
Prepared by : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NITROGEN, REFRIGERATED LIQUID

Safety Data Sheet



1. IDENTIFICATION

Product identifier**Product Name** NITROGEN, REFRIGERATED LIQUID**Other means of identification****Safety data sheet number** LIND-P087
UN/ID no. UN1977**Recommended use of the chemical and restrictions on use****Recommended Use** Industrial and professional use.
Uses advised against Consumer use**Details of the supplier of the safety data sheet**

Messer North America, Inc. - Messer LLC - Messer Merchant Production LLC
(formerly known as Linde North America, Inc., Linde LLC and Linde Merchant Production, Inc.)
200 Somerset Corporate Blvd, Suite 7000
Bridgewater, NJ 08807
Phone: 908-464-8100
www.messer-us.com

Messer Gas Puerto Rico, Inc.
(formerly known as Linde Gas Puerto Rico, Inc.)
Road 869, Km 1.8
Barrio Palmas, Catano, PR 00962
Phone: 787-641-7445

* May include subsidiaries or affiliate companies/divisions.

For additional product information contact your local customer service.

Emergency telephone number**Company Phone Number** +1 800-232-4726 (Messer National Operations Center, US)

CHEMTREC: 1-800-424-9300 (North America) +1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Gases under pressure	Refrigerated liquefied gas
Simple asphyxiants	Yes

Label elements



Signal word

Warning

Hazard Statements

Contains refrigerated gas; may cause cryogenic burns or injury
May displace oxygen and cause rapid suffocation

Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood
Use and store only outdoors or in a well ventilated place
Wear cold insulating gloves, face shield, and eye protection
Use a backflow preventive device in piping
Do NOT change or force fit connections
Close valve after each use and when empty
Always keep container in upright position

Precautionary Statements - Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical attention/advice.
IF ON SKIN: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Hazards not otherwise classified (HNOC)

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Volume %	Chemical Formula
NITROGEN	7727-37-9	>99	N ₂

4. FIRST AID MEASURES

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
Skin contact	For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.
Eye contact	If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
Ingestion	Not an expected route of exposure.
Self-protection of the first aider	RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Most important symptoms and effects, both acute and delayed

Symptoms	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death. Contact with evaporating liquid may cause cold burns/frostbite.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media None.

Specific extinguishing methods

Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.

Specific hazards arising from the chemical

Non-flammable gas. Cylinders may rupture under extreme heat.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Use personal protection recommended in Section 8.

Other Information

When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

Environmental precautions**Environmental precautions**

Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods and material for containment and cleaning up**Methods for containment**

Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Messer location.

Methods for cleaning up

Return Portable Cryogenic Container to Messer or an authorized distributor.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cold fluids. The extremely cold metal will cause moist flesh to stick fast and tear when one attempts to withdraw from it. Do NOT change or force fit connections

Liquid nitrogen is delivered into stationary vacuum jacketed vessels at the customer's location or in portable vacuum-jacketed "liquid" cylinders requiring special handling methods. Consult manufacturer's instructions.

Due to the extremely cold liquid, uninsulated transfer may condense air. The liquefied air may flash off nitrogen, leaving an oxygen enriched liquid. Do not allow the liquefied air to contact oils, grease, or other combustible materials such as asphalt or motor oil. Vessels for liquid nitrogen are designed specifically for nitrogen service. Vessels and associated structures are not designed to support higher density fluids. Density, liquid at saturation pressure at 2.17°K (-271°C): 0.146 Kg/l.

Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Use only with adequate ventilation. Use a backflow preventive device in piping. Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. Ensure the complete gas system has been checked for leaks before use.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

Only experienced and properly instructed persons should handle gases under pressure. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers. Use only with equipment rated for cylinder pressure.

For additional recommendations, consult Compressed Gas Association's Pamphlets, AV-8, CGA-341, G-10.1, P-1, P-9, P-12, P-14, and P-18.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Full and empty cylinders should be segregated. Stored containers should be periodically checked for general condition and leakage.

Incompatible materials

None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
NITROGEN 7727-37-9	: See Appendix F: Minimal Oxygen Content	None	None

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%. Oxygen detectors should be used when asphyxiating gases may be released. Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear: Goggles. Face-shield.

Skin and body protection Work gloves and safety shoes are recommended when handling cylinders. Wear cold insulating gloves when handling liquid.

Respiratory protection Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin, or on clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Gas
Appearance	Colorless
Odor	Odorless
Odor threshold	No information available
pH	Not applicable
Melting/freezing point	-209.9 °C / -345.9 °F
Evaporation rate	Not applicable
Flammability (solid, gas)	Non-flammable gas
Lower flammability limit:	Not applicable
Upper flammability limit:	Not applicable
Flash point	Not applicable
Autoignition temperature	No data available
Decomposition temperature	No data available
Water solubility	Very slight
Partition coefficient	No data available
Kinematic viscosity	Not applicable

Chemical Name	Molecular weight	Boiling point/range	Vapor Pressure	Vapor density (air =1)	Gas Density kg/m ³ @20°C	Critical Temperature
NITROGEN	28.01	-196 °C	Above critical temperature	0.97	1.153	-146.9 °C

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None under recommended storage and handling conditions (see Section 7).

Incompatible materials

None known.

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Product is a simple asphyxiant.
Skin contact	Contact with evaporating liquid may cause cold burns/frostbite.
Eye contact	Contact with evaporating liquid may cause cold burns/frostbite.
Ingestion	Not an expected route of exposure.

Information on toxicological effects

Symptoms	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere ($\leq 19.5\%$) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Not classified.
Sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens listed by OSHA, IARC or NTP.
Reproductive toxicity	Not classified.
Developmental Toxicity	Not classified.
STOT - single exposure	Not classified.
STOT - repeated exposure	Not classified.
Chronic toxicity	None known.
Aspiration hazard	Not applicable.

Numerical measures of toxicity

Product Information	
Oral LD50	No information available
Dermal LD50	No information available
Inhalation LC50	No information available
Inhalation LC50	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No known acute aquatic toxicity.

Persistence and degradability

Not applicable.

Bioaccumulation

No information available.

Other adverse effects

Can cause frost damage to vegetation.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Messer for proper disposal.

14. TRANSPORT INFORMATION

DOT

UN/ID no.	UN1977
Proper shipping name	Nitrogen, refrigerated liquid
Hazard Class	2.2
Special Provisions	T75, TP5, 346, 345
Description	UN1977, Nitrogen, refrigerated liquid, 2.2
Emergency Response Guide Number	120

TDG

UN/ID no.	UN1977
Proper shipping name	Nitrogen, refrigerated liquid
Hazard Class	2.2
Description	UN1977, Nitrogen, refrigerated liquid, 2.2

IATA

UN/ID no.	UN1977
Proper shipping name	Nitrogen, refrigerated liquid
Hazard Class	2.2
ERG Code	2L
Special Provisions	A152
Description	UN1977, Nitrogen, refrigerated liquid, 2.2

IMDG

UN/ID no.	UN1977
Proper shipping name	Nitrogen, refrigerated liquid
Hazard Class	2.2
EmS-No.	F-C, S-V
Special Provisions	345, 346
Description	UN1977, Nitrogen, refrigerated liquid, 2.2

15. REGULATORY INFORMATION

INTERNATIONAL INVENTORIES

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

US FEDERAL REGULATIONS

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Risk and Process Safety Management Programs

This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68. This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

US STATE REGULATIONS

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Nitrogen 7727-37-9	X	X	X

16. OTHER INFORMATION

NFPA **Health hazards** 3 **Flammability** 0 **Instability** 0 **Physical and Chemical Properties** Simple asphyxiant

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

Issue Date 17-Feb-2015
Revision Date 01-Mar-2019
Revision Note SDS sections updated; 1

LIND-P087

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between Messer LLC, Messer Merchant Production LLC or Messer North America, Inc. (or any of their affiliates and subsidiaries) and the purchaser.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

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End of Safety Data Sheet

SAFETY DATA SHEET



DATE PRINTED	5/11/2017
SDS REF. No :	SS-887

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 100% RTV SILICONE SEALANT CONSTRUCTION & MARINE GRADE
SS-887

Manufacturer
LANCO MFG.CORP.
URB. APONTE # 5

SAN LORENZO, PUERTO RICO, 00754
787-736-4221

24 HR. Emergency Telephone Number
CHEMTREC (US Transportation): 1 (800)424-9300
CHEMTREC (International Transportation) : 1(703)527-3887

2. HAZARDS IDENTIFICATION

Classification (substance or mixture):

No applicable GHS categories.

GHS Label Elements:

No information available.

Signal Word: No signal word.

Hazard Statements:

No GHS hazard statement

Precautionary Statement:

P271 Use only outdoors or in a well-ventilated area.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	CAS Number
Silicon dioxide	<= 7.344	7631-86-9
Titanium dioxide	<= 2.24	13463-67-7

*Aluminium	<=1.575	7429-90-5
Carbon black	<=0.455	1333-86-4

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

Eyes: In case of eye contact, flush with large amount of water for at least 15 minutes. Get medical attention.

Skin: Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Inhalation: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

Notes To Physician: Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Carbon Dioxide(CO₂), Dry Chemical, Alcohol-resistant Foam, Water spray.

Unsuitable Extinguishing Media: None Known.

Specific Hazard In Case Of Fire: Closed containers may explode when exposed to extreme heat. Vapor may form explosive mixture with air. No unusual fire or explosion hazard noted. Keep containers closed when not in use.

Special Protective Equipment And Precaution For Fire Fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

Environmental Precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Method And Materials For Containment And Cleaning Up: Eliminate ignition source, provide good ventilation, dike spill area and add absorbent earth or sawdust to spilled liquid. Thoroughly wet with water and mix.

Collect absorbent/absorbent water/spilled liquid mixture into metal containers and add enough water to cover. Consult local state and federal hazardous regulation before disposing into approved hazardous waste landfills. Obey relevant law.

7. HANDLING AND STORAGE

Precaution For Safe Handling: Do not get on skin or clothing. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Keep away from water. Protect from moisture. Take care to prevent spills, waste and minimize release to the environment.

Conditions For Safe Storage, Including Incompatibilities: Handle containers carefully to prevent damage and spillage. Incompatible materials: Alkaline materials, strong acid and oxidizing materials.

Store in original containers at temperatures between 5 °C and 25 °C. Keep away from heat, sparks and open flame. Protect from freezing and direct sunlight. Keep containers tightly closed.

Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labeled container.

8. EXPOSURE CONTROLS\PERSONAL PROTECTION

Exposure Limits

Components	CAS	Limits
Silicon dioxide	7631-86-9	TWA(DUST)(OSHA Z-3) 20 Million particles per cubic foot silica TWA(DUST)(OSHA Z-3) 80 mg/m ³ / % SiO ₂ (silica) TWA (NIOSH REL) 6 mg/m ³ (Silica)
Titanium dioxide	13463-67-7	TWA (Total Dust) 15 mg/m ³ OSHA Z-1 TWA 10 mg/m ³ (Titanium dioxide) ACGIH

Aluminium	7429-90-5	TWA (respirable) 5 mg/m ³ NIOSH REL TWA (Total) 10 mg/m ³ NIOSH REL TWA (total dust) 15 mg/m ³ (Aluminum) OSHA Z-1 TWA (respirable fraction) 5 mg/m ³ OSHA Z-1 TWA (pyropowders) 5 mg/m ³ (Aluminum) ACGIH
Carbon black	1333-86-4	TWA 3.5 mg/m ³ NIOSH REL TWA 3.5 mg/m ³ OSHA Z-1 TWA (Inhalable fraction) 3 mg/m ³ ACGIH

These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard: Silicon dioxide, Titanium dioxide and Carbon black.

Engineering Controls: Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such system are not effective wear suitable personal protective equipment, which performs satisfactorily and meet OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

Personal Protective Equipment:

Respiratory Protection: In case of insufficient ventilation wear suitable respiratory equipment.

Eyes Protection: Safety glasses with side-shields.

Skin Protection: Chemical -resistance gloves and chemical goggles, face-shield and synthetic apron or coveralls should deb used to prevent contact with eyes, skin or clothing.

Work Hygienic Practices: Ensure shower and eyewash station are available. Use good personal hygiene practices. Wash hand before eating, drinking. Promptly remove soiled clothing and wash thoroughly before reuse.

Other Use Precautions: None

Comments: No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Paste

Color: White

Flash Point And Method: >100°C Closed Cup

Auto-Ignition Temperature: Not data available

Boiling Point/Range: Not applicable

Melting Point: Not data available

Vapor Pressure: Not applicable

Vapor Density: No data available

Solubility in Water:No data available

Odor: Acetic Acid

Upper /Lower Flammable Limits: No data available

Relative Density (g/cm³): 1.007

Evaporation Rate: Not applicable

Flammability (Solids, Gas): Not classified as a flammability hazard

Partition Coefficient: Not available

pH: Not applicable

Decomposition Temperature: Not available

Coating VOC (gm/l): Not applicable

Material VOC (gm/l): Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions.

Possibility Of Hazardous Reactions: Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Acetic acid is formed upon contact with water or humid air. When heated to temperatures above 150°C (300°F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required. See OSHA formaldehyde standard, 29CFR 1910.1048 Hazardous decomposition products will be formed at elevated temperatures.

Conditions To Avoid: Exposure to moisture.

Materials To Avoid: Keep away from the following materials to prevent strong exothermic reaction: oxidizing agents, strong alkalis, strong acids, water.

Hazardous Decomposition Products: Decomposition products may include the following

materials: Thermal decomposition: Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Signs And Symptoms Of Overexposure: No information available.

Acute Effects:

Eye Contact: Cause serious eyes irritation.

Skin Contact: Substance may cause slight skin irritation. Prolonged or repeated contact may cause skin irritation. Allergic reactions are possible.

Inhalation: Harmful if inhaled. High vapor concentration is irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Harmful if swallowed.

Target Organ: No information available.

Chronic Effects: No information available.

Toxicity Values: The acute effects of this product have not been tested. Data on individual components are tabulated below.

TOXICOLOGICAL INFORMATION

Silicon dioxide (7631-86-9)	
LD50 Rat oral	>3,300 mg/kg
LC50 Rat inhalation	>2.08 mg/l, 4hrs, dust mist
LD50 Rabbit Dermal	>5,000 mg/kg
Titanium dioxide (13463-67-7)	
LD50 Rat Oral	>5,000 mg/kg
LC50 Rat inhalation	>6.82 mg/l, 4 hrs, dust mist
Aluminium (7429-90-5)	

LD50 Rat Oral	>5,000 mg/kg
LC50 Rat inhalation	>0.888 mg/l,4hrs, dust mist
Carbon Black (1333-86-4)	
LD50 Rat Oral	>5,000 mg/kg
LC50 Rat inhalation	>0.0046 mg/l, 4 hrs, dust mist
LD50 Rabbit Dermal	>3,000 mg/kg

CARCINOGENICITY: Not classified based on available information.

Ingredients:

Titanium dioxide:

Species: Rat, **Application Route:** Inhalation, **Exposure time:** 24 Months, **Method:** OECD Test Guideline 453, **Result:** Positive, **Remark:** The mechanism or mode of action may not be relevant in humans. These substances are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Aluminium:

Species: Rat, Application Route: Inhalation, **Exposure time:** 86 Weeks, **Result:** Negative

IARC: Group 2B: Possibly carcinogenic to humans: Titanium dioxide 13463-67-7 and Carbon Black 1333-86-4.

OSHA: No ingredients of this product present at levels greater than or equal to 0.1% on OSHA's list of regulated carcinogens.

NTP: No ingredients of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

12. ECOLOGICAL INFORMATION

Persistence And Degradability: No information available.

Bio-Accumulative Potential: No information available.

Mobility In Soil: No information available.

Other Adverse Effects: No information available.

Eco-toxicological Other Information: No information available.

ECOLOGICAL INFORMATION

Titanium dioxide (13463-67-7)	
LC50 Fish (Oncorhynchus mykiss (rainbow trout))	>100 mg/l,96 hrs.,OECD Test Guideline 203
EC50 Daphnia (Daphnia magna (Water Flea))	>100 mg/l, 48 hrs. , OECD Test Guideline 202
EC50 Algae (Skeletonema costatum (marine diatom))	>10,000 mg/l, 72 hrs
EC50 microorganisms	>1,000 mg/l, 3 hrs.,OECD Test Guideline 209
Aluminium (7429-90-5)	
LC50 Fish NOEC (Salmo trutta (brown trout))	>80µg/l, 96 hrs.,OECD Test Guideline203
NOEC Daphnia and invertebrated (Daphnia sp. (Water Flea))	>0.135 mg/l,48hrs.,OECD Test Guideline 202
Carbon Black (1333-86-4)	
LC0 Fish (Danio rerio (zebra fish))	1,000 mg/l, 96 hrs.,OECD Test Guideline 203
EC50 Daphnia (Daphnia magna (Water Flea))	>5,600 mg/l, 24hrs., OECD Test Guideline 202
NOEC Algae (Desmodesmus subspicatus(Green algae))	10,000 mg/l, 72 hrs.,OECD Test Guideline 201

13. DISPOSAL CONSIDERATIONS

Disposal Method: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and /or state and local guidelines.

14. TRANSPORT INFORMATION

	DOT	IMDG	AIR (IATA)
UN Number	Not Regulated	Not Regulated	Not Regulated
UN Proper Shipping Name	Not Regulated	Not Regulated	Not Regulated
Hazard Class	Not Regulated	Not Regulated	Not Regulated
Packing Group	Not Regulated	Not Regulated	Not Regulated
Environmental Hazard	Not Regulated	Not Regulated	Not Regulated
Marine Pollutant (Y/N)	No	No	No

15. REGULATORY INFORMATION

U.S. Regulations:

U.S. SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 Hazard Categories: Hazardous Information

Fire: No

Pressure Generating: No

Reactivity: No

Acute: No

Chronic: No

313 Reportable Ingredients: The following components are subject to reporting levels established by SARA Title III, Section 313 is :

Chemical Name	Weight %	CAS Number
*Aluminium	<=1.575	7429-90-5

302/304 Emergency Planning

Sara 304 Extremely Hazardous Substances Reportable Quantity:

This material does not contain any components with a section 304 EHS RQ.

Emergency Plan: No

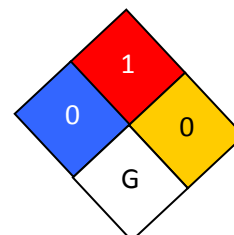
State Regulations: No

Other Govt. Regulations: No

16. OTHER INFORMATION

HMIS RATING	
Health :	0
Flammability :	1

NFPA CODES



Reactivity :	0
Personal Protection :	G

DATE CREATED	05-23-16
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Revision Indicator: None

Manufacturer Disclaimer: The information contained herein is based on data believed by this company to be accurate, but we do not assume any liability for its accuracy. We neither suggest nor guaranteed that any hazards mentioned are the only ones which exist. The manner in which it is used and whether there is any infringement of patents is the sole responsibility of the user.

SAFETY DATA SHEET



DATE PRINTED	3/4/2016
SDS REF. No :	LT-102

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: LACQUER THINNER
Product Code: LT-102

Manufacturer
 LANCO MFG.CORP.
 URB. APONTE # 5

SAN LORENZO, PUERTO RICO, 00754
 787-736-4221

24 HR. Emergency Telephone Number
CHEMTREC (US Transportation): 1 (800)424-9300
CHEMTREC (International Transportation) : 1(703)527-3887

2. HAZARDS IDENTIFICATION

Classification (substance or mixture):

Category 2 (Flammable liquid)
 Category 4 Acute Toxicity, Inhalation
 Category 2 Skin Corrosion / Irritation
 Category 2 Serious damage/eyes irritation
 Category 1 Germ Cell Mutagenicity
 Category 2 Toxic to Reproduction
 Category 3 Target organ Systemic Toxicity (single exposure)
 Category 2 Target organ Systemic Toxicity (Repeated exposure)
 Category 1 Aspiration toxicity

GHS Label Elements:



Signal Word: Danger

Hazard Statements:

H370 Causes damage to organs .
 H361 Suspected of damaging fertility or the unborn child .
 H340 May cause genetic defects
 H319 Causes serious eye irritation.
 H315 Causes skin irritation.
 H304 May be fatal if swallowed and enters airways.
 H225 Highly flammable liquid and vapor.

H373 May cause damage to organs through prolonged or repeated exposure.
 H332 Harmful if inhaled.

Precautionary Statement:

P281 Use personal protective equipment as required.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P271 Use only outdoors or in a well-ventilated area.
 P270 Do not eat, drink or smoke when using this product.
 P264 Wash hands thoroughly after handling.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 P243 Take precautionary measures against static discharge.
 P242 Use only non-sparking tools.
 P241 Use explosion-proof electrical/ventilating/lighting equipment.
 P240 Ground/bond container and receiving equipment.
 P202 Do not handle until all safety precautions have been read and understood.
 P201 Obtain special instructions before use.
 P233 Keep container tightly closed.
 P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %	CAS Number
*Methylbenzene	60% to 70%	108-88-3
*2 Butanone	10% to 20%	67-64-1
*Methyl Alcohol	10% to 20%	67-56-1
*Methyl Isobutyl Ketone	0.05% to 10%	108-10-1
Propylene Glycol Monomethyl Ether	0.05% to 10%	108-65-6

* Toxic chemical subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

4. FIRST AID MEASURES

Eyes: In case of eye contact, flush with large amount of water for at least 15 minutes. Get medical assistant.

Skin: Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persist.

Ingestion: Do not induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Inhalation: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

Notes To Physician: Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Carbone Dioxide, Dry Chemical, Foam, Water Fog.

Unsuitable Extinguishing Media: None Known

Specific Hazard In Case Of Fire: Closed containers may explode when exposed to extreme heat. Vapor may form explosive mixture with air. No unusual fire or explosion hazard noted. keep containers closed when not in use.

Special Protective Equipment And Precaution For Fire Fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure build-up an possible auto-ignition or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

Environmental Precautions: Do not allow spill to enter drains or waterways. Use good personal hygiene practices. Wash hands before eating, drinking, or smoking. Promptly remove soiled clothing and wash thoroughly before reuse.

Method And Materials For Containment And Cleaning Up: Eliminate ignition source, provide good ventilation, dike spill area and add absorbent earth or sawdust to spilled liquid. Thoroughly wet with water and mix.

Collect absorbent/absorbent water/spilled liquid mixture into metal containers and add enough water to cover. Consult local state and federal hazardous regulation before disposing into approved hazardous waste landfills. Obey relevant law.

7. HANDLING AND STORAGE

Precaution For Safe Handling: Avoid contact with skin, eyes and clothing. Avoid breathing

vapors, spray mist or sanding dust. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions For Safe Storage, Including Incompatibilities: Handle containers carefully to prevent damage and spillage. Incompatible materials: Alkaline materials, strong acid and oxidizing materials.

Store in original containers at temperatures between 5 °C and 25 °C. Keep away from heat, sparks and open flame. Protect from freezing and direct sunlight. Keep containers tightly closed. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labeled container.

8. EXPOSURE CONTROLS\PERSONAL PROTECTION

Exposure Limits

Components	CAS	Limits
Methylbenzene	108-88-3	ACGIH TWA 20 ppm, OSHA TWA 200 ppm OSHA Z1 TWA 100 ppm, STEAL 150ppm NIOSH TWA 100ppm, STEAL 150ppm
2 Butanone	67-64-1	OSHA TWA : 1000ppm , STEAL 1000ppm ACGIH TWA 500 ppm, STEL: 750ppm NIOSH TWA 250ppm
Methyl Alcohol	67-56-1	ACGIH TLV 200ppm , OSHA TWA 200 ppm, OSHA STEL 250 ppm, ACGIH STEL 250 ppm ACGIH TLV 200ppm TWA
Methyl Isobutyl Ketone	108-10-1	ACGIH STEL 75 ppm TWA 20ppm OSHA STEL 75 ppm OSHA TWA 50ppm NIOSH STEL 75 ppm TWA 50ppm

Engineering Controls: Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such system are not effective wear suitable personal protective equipment, which performs satisfactorily and meet OSHA or other recognized standards. Consult with local procedures for selection,

training, inspection and maintenance of the personal protective equipment.

Personal Protective Equipment:

Respiratory Protection: In case of insufficient ventilation wear suitable respiratory equipment.

Eyes Protection: Safety glasses with side-shields.

Skin Protection: Chemical -resistance gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing.

Work Hygienic Practices: Ensure shower and eyewash station are available. Use good personal hygiene practices. Wash hand before eating, drinking. Promptly remove soiled clothing and wash thoroughly before reuse.

Other Use Precautions: None

Comments: No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Clear

Flash Point And Method: < 20 °F Set-a-flash

Auto-Ignition Temperature: Not available

Boiling Point/Range: Not Available

Melting Point: Not available

Vapor Pressure: Not available

Vapor Density: Heavier than Air

Solubility in Water: Non soluble

Odor: Solvent odor

Upper /Lower Flammable Limits: Not applicable TO No information available.

Relative Density (g/cm³): 0.8488

Evaporation Rate: Slower than Ether

Flammability (Solids, Gas): Not available

Partition Coefficient: Not available

pH: Not applicable

Decomposition Temperature: Not available

Coating VOC (gm/l): 857

Material VOC (gm/l): 737

10. STABILITY AND REACTIVITY

Chemical Stability: Stable

Possibility Of Hazardous Reactions: None under normal condition of use.

Conditions To Avoid: Poor ventilation.

Materials To Avoid: Keep away from the following materials to prevent strong exothermic reaction: oxidizing agents, strong alkalis, strong acids.

Hazardous Decomposition Products: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Signs And Symptoms Of Overexposure: No information available.

Acute Effects:

Eye Contact: Cause serious eyes irritation.

Skin Contact: Substance may cause slight skin irritation. Prolonged or repeated contact may cause skin irritation. Allergic reactions are possible.

Inhalation: Harmful if inhaled. High vapor concentration are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Harmful if swallowed.

Target Organ: No information available.

Chronic Effects: No information available.

Toxicity Values: The acute effects of this product have not been tested. Data on individual components are tabulated below.

TOXICOLOGICAL INFORMATION

2 Butanone(67-64-1)	
LD50 Rat oral	5800 mg/kg
LC50 Rat inhalation	50100 mg/m ³ , 8hrs
LD50 guinea pig	7426 mg/kg
Methyl Alcohol(67-56-1)	
LD50 Rat Oral	100 mg/kg
LC50 Rat inhalation	5 mg/l
LD50 Rabbit Dermal	300 mg/kg
Methyl Isobutyl Ketone(108-10-1)	
LD50 Rat Oral	2080 mg/kg
LC50 Rat inhalation	8.2-16.4 mg/l
LD50 Rat Dermal	>2000 mg/kg
Methylbenzene(108-88-3)	
LD50 Rat. Oral	>5580 mg/kg
LD50 Rat Inhalation	12500-28800 mg/m ³ , 4 hrs.
LD50 Rabbit. Dermal	12196 mg/kg

CARCINOGENICITY: The information below indicates whether each agency has listed any ingredient as a carcinogen:

Components	CAS	Carcinogen (IARC)
Methylbenzene	108-88-3	3
Methyl Isobutyl Ketone	108-10-1	2B

12. ECOLOGICAL INFORMATION

Persistence And Degradability: No information available.

Bio-Accumulative Potential: No information available.

Mobility In Soil: No information available.

Other Adverse Effects: No information available.

Eco-toxicological Other Information: No information available.

ECOLOGICAL INFORMATION

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13. DISPOSAL CONSIDERATIONS

Disposal Method: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and /or state and local guidelines.

14. TRANSPORT INFORMATION

	DOT	IMDG	AIR (IATA)
UN Number	UN1263	1263	1263
UN Proper Shipping Name	Paint, Flammable liquid	Paint	Paint
Hazard Class	3	3	3
Packing Group	II	II	II
Environmental Hazard	No	No	No
Marine Pollutant (Y/N)	No	No	No

15. REGULATORY INFORMATION

U.S. Regulations:

U.S. SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 Hazard Categories: Hazardous Information

Fire: Yes

Pressure Generating: No

Reactivity: No

Acute: Yes

Chronic: Yes

313 Reportable Ingredients: This product contains a chemical or chemicals which are subject to the reporting requirements of section 313 of title 40 CFR 372.

313 REPORTABLE INGREDIENTS

Chemical Name	Weight %	CAS
*Methylbenzene	67.5828	108-88-3
*2 Butanone	13.0505	67-64-1
*Methyl Alcohol	11.237	67-56-1
*Methyl Isobutyl Ketone	4.7103	108-10-1

302/304 Emergency Planning

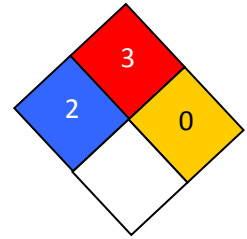
Emergency Plan: No

State Regulations: No

Other Govt. Regulations: No

16. OTHER INFORMATION

HMIS RATING	
Health :	2
Flammability :	3
Reactivity :	0
Personal Protection :	H

NFPA CODES

DATE CREATED	06-12-15
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Revision Indicator: None

Manufacturer Disclaimer: The information contained herein is based on data believed by this company to be accurate, but we do not assume any liability for its accuracy. We neither suggest nor guaranteed that any hazards mentioned are the only ones which exist. The manner in which it is used and whether there is any infringement of patents is the sole responsibility of the user.

Product name:	SHELL GADUS S2 V220 00	Page:	1/9
Revision Date:	2020-01-27	Print date:	2020-01-27
Document No.:	M0205	SDS-ID:	CA-EN/3.0

1. IDENTIFICATION

Product identifier

Product name: SHELL GADUS S2 V220 00
Cat. No. 16080803, 16080846

Recommended use and restrictions on use

Application: Lubricating grease.
Uses advised against: No specific uses advised against are identified. (*)

Details of the supplier of the safety data sheet

Supplier: Struers Ltd
7275 West Credit Avenue
Ontario L5N 5M9 Mississauga
Canada
Tel:+1 (905) 8148855

Responsible for safety data sheet authoring: Responsible for safety data sheet authoring: DHI
Any questions to the contents of this safety data sheet should be sent to:
struers@struers.dk

Emergency telephone number

Infotrac:
1-800-535-5053
Struers CAN:
+1 (905) 8148855
(Only during office hours)

2. HAZARDS IDENTIFICATION

Classification of the hazardous product

WHMIS 2015: The product is not classified.

Label elements

The substance/mixture does not meet the criteria for classification and labelling.

Other hazards

PBT/vPvB: No information available.

Other: Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. The harmful effects may increase in used grease. Prolonged or repeated contact with used grease may cause serious skin diseases, such as dermatitis. Greases are generally hazardous to the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

The product contains: Highly refined mineral oil and additives. DMSO < 3% (IP 346)

Public
SAFETY DATA SHEET

Product name:	SHELL GADUS S2 V220 00	Page:	2/9
Revision Date:	2020-01-27	Print date:	2020-01-27
Document No.:	M0205	SDS-ID:	CA-EN/3.0

WHMIS 2015:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
0.1-0.9	1338-24-5	215-662-8	-	Naphthenic acids	Skin Irritation Category 2 Eye Irritation Category 2 Skin Sensitizer Category 1B	

4. FIRST-AID MEASURES

Description of first-aid measures

Inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and take along these instructions.

Skin contact: Remove contaminated clothing immediately and wash skin with soap and water. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions. Do not induce vomiting.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the hazardous product

Specific hazards: During fire, health hazardous gases may be formed.

Advice for fire-fighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid inhalation of oil mist and contact with skin and eyes. In case of spills, beware of slippery floors and surfaces. For personal protection, see section 8.

For emergency responders: No specific recommendations. For personal protection, see section 8.

Environmental precautions

Environmental precautions: Do not discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Absorb spillage with oil-absorbing material. Clean contaminated area with oil-removing material.

Reference to other items

References: For personal protection, see section 8.
For waste disposal, see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Avoid inhalation of oil mist and contact with skin and eyes. Always remove grease with soap and water or skin cleaning agent, never use organic solvents. Observe good chemical hygiene practices.

Technical measures: Work practice should minimize contact.

Technical precautions: When working with heated grease, mechanical ventilation may be required.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: No special precautions.

Storage conditions: Store in tightly closed original container in a dry, cool and well-ventilated place.

Specific end-use(s)

Specific use(s): No information available.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Other provincial OEL's may apply.

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
-	Mineral oil (mist)	-	5 mg/m3	TWA	-	Quebec
		-	10 mg/m3	STEL	15min	
-	Oil mist, mineral, severely refined	-	1 mg/m3	TWA	-	BC
-	Oil mist, mineral	-	5 mg/m3	TWA	-	Alberta
		-	10 mg/m3	STEL	15min	

Exposure controls

Engineering measures:

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapours and oil mist. Provide access to washing facilities incl. soap, skin cleanser and fatty cream.

Personal protection:

Personal protection equipment should be chosen according to relevant standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment:

In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P3) can be used.

Hand protection:

Risk of contact: Wear protective gloves. Nitrile gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.
Breakthrough time: >480 min
Thickness: >0.35 mm (*)

Eye protection:

Risk of contact: Wear goggles/face shield.

Skin protection:

No special precautions.

Environmental Exposure Controls:

Not available.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form: Grease.
Colour: Brown
Odour: Hydrocarbon.
Odour threshold: Not available.
pH: Not applicable.
Melting point: Not available.
Boiling point: Not available.
Flash point: Not applicable.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Explosion limits: 1 - 10% (V)
Vapour pressure: <0.5 Pa (68°F)
Vapour density: Not available.
Relative density: 0.9
Solubility: insoluble in water
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): >608°F
Decomposition temperature (°C): Not available.
Viscosity: Not available.
Explosive properties: Not available.
Oxidising properties: Not available.
Other information
Other data: Volatile Organic Compound (VOC): 0 g/l

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10. STABILITY AND REACTIVITY

Reactivity

Reactivity: None known.

Chemical stability

Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions

Hazardous Reactions: None known.

Conditions to avoid

Conditions/materials to avoid: Extremes of temperatures. Direct sunlight.

Incompatible materials

Incompatible materials: Strong oxidizing substances.

Hazardous decomposition products

Hazardous decomposition products: None known.

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11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

The harmful effects may increase in used grease.

<u>Acute Toxicity (Oral):</u>	Based on available data, the classification criteria are not met.
<u>Acute Toxicity (Dermal):</u>	Based on available data, the classification criteria are not met.
<u>Acute Toxicity (Inhalation):</u>	Based on available data, the classification criteria are not met.
<u>Skin Corrosion/Irritation:</u>	Based on available data, the classification criteria are not met.
<u>Serious eye damage/irritation:</u>	Based on available data, the classification criteria are not met.
<u>Respiratory or skin sensitization:</u>	Based on available data the classification criteria are not met. Contains Naphthenic acids. May produce an allergic reaction.
<u>Germ cell mutagenicity:</u>	Based on available data, the classification criteria are not met.
<u>Carcinogenicity:</u>	Based on available data, the classification criteria are not met. IARC Cancer Review: Group 3 for Highly-refined oils. National Toxicology Program (NTP): No.
<u>Reproductive Toxicity:</u>	Based on available data, the classification criteria are not met.
<u>STOT - Single exposure:</u>	Based on available data, the classification criteria are not met.
<u>STOT - Repeated exposure:</u>	Based on available data, the classification criteria are not met.
<u>Aspiration hazard:</u>	Based on available data, the classification criteria are not met.
<u>Inhalation:</u>	Inhalation of oil mist or vapors formed during heating of the product will irritate the respiratory system and provoke coughing.
<u>Skin contact:</u>	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Prolonged or repeated contact with used grease may cause serious skin diseases, such as dermatitis.
<u>Eye contact:</u>	Direct contact may irritate.
<u>Ingestion:</u>	May irritate and cause malaise.
<u>Additional information:</u>	Handling of used oils: Protect health - avoid prolonged and repeated skin contact. Wash with soap and water. Protect the environment - do not pollute drains, water courses or the soil. Contact your local authority for any used oil disposal instructions.

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12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity: Greases are generally hazardous to the environment.

Persistence and degradability

Degradability: This product is expected to be heavily biodegradable.

Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

Mobility in soil

Mobility: No data available.

Results of PBT and vPvB assessment

PBT/vPvB: No information available.

Other adverse effects

Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Contaminated packaging: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORT INFORMATION

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, TDG).

UN number

UN-No: -

UN proper shipping name

Proper Shipping Name: -

Transport hazard class(es)

Class: -

Packing group

PG: -

Environmental hazards

Marine pollutant: -

Environmentally Hazardous substance: -

Special precautions for user

Special precautions: None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not known.

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15. REGULATORY INFORMATION

Safety, health and environmental regulations specific to the product

Special provisions: DSL: All chemicals included in the product are DSL listed or exempt.

National regulation: Hazardous Products Regulations, with amendments.
Canadian Environmental Protection Act, Reporting for the Domestic Substances List (DSL), with amendments.
British Columbia: Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, with amendments (2015).
Ontario: Control of Exposure to Biological or Chemical Agents R.R.O. 1990, Reg. 833, with amendments (2016).
Quebec: Regulation respecting the quality of the work environment, with amendments (2013-12-13).
Alberta: Occupational Health and Safety Code 2009.
U.S. Department of health and human services: 2011 - Report on Carcinogens - 12th Edition.
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.

16. OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1, 8.

The (*) indicates the changes made with respect to the previous version.

Approved by DHI.



Abbreviations and acronyms used in the safety data sheet: PBT = Persistent, Bioaccumulative and Toxic.
vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to WHMIS 2015:
Calculation method.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

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SECTION 1. IDENTIFICATION

Product name : Shell Rotella T5 10W-40
Product code : 001D5435

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Canada Products**
400 - 4th Avenue S.W
Calgary AB T2P 0J4
Canada

Telephone : (+1) 8006611600
Telefax : (+1) 4033848345

Emergency telephone number : CHEMTREC (24 hr): 1 (703) 527-3887 or 1 (800) 424-9300 (US)
CANUTEC (24 hr): (+1) 613-996-6666; Toll Free: 1-888-CAN-UTEC (226-8832)

Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:

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No precautionary phrases.

Disposal:

No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.

Not classified as flammable but will burn.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name : Shell Rotella T5 10W-40

Chemical nature : Synthetic base oil and additives.
Highly refined mineral oil.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Overbased sulphurised calcium phenate	68784-26-9	1 - 5
Zinc dialkyl dithiophosphate	68649-42-3	1 - 2.4
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *	Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms : Oil acne/folliculitis signs and symptoms may include formation

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and effects, both acute and delayed : of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.
Reclaim liquid directly or in an absorbent.

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Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Advice on safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

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Date of first issue: 16.02.2010**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of

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equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.

In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.

Check with respiratory protective equipment suppliers.

Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm

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depending on the glove make and model.

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.
- Thermal hazards : Not applicable
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid at room temperature.
- Colour : amber
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -39 °C / -38 °F
Method: ASTM D97
- Initial boiling point and boiling range : > 280 °C / 536 °F
estimated value(s)
- Flash point : 230 °C / 446 °F

Method: ASTM D92
- Evaporation rate : Data not available

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Flammability (solid, gas)	: Data not available
Upper explosion limit	: Typical 10 %(V)
Lower explosion limit	: Typical 1 %(V)
Vapour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 0.866 (15 °C / 59 °F)
Density	: 866 kg/m ³ (15.0 °C / 59.0 °F)Method: ASTM D4052
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F
Viscosity	
Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 98.3 mm ² /s (40.0 °C / 104.0 °F) Method: ASTM D445
	: 14.5 mm ² /s (100 °C / 212 °F) Method: ASTM D445
Explosive properties	: Not classified
Oxidizing properties	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.

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Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
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Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity**Product:**

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	: LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Skin corrosion/irritation**Product:**

Remarks: Expected to be slightly irritating.
Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation**Product:**

Remarks: Expected to be slightly irritating.

Components:**Zinc dialkyl dithiophosphate:**

Remarks: Based on available data, the classification criteria are not met.

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Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity**Product:**

Genotoxicity in vivo : Remarks: Not considered a mutagenic hazard.

Carcinogenicity**Product:**

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies.
Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Reproductive toxicity**Product:**Effects on fertility :
Remarks: Not expected to impair fertility.
Not expected to be a developmental toxicant.**STOT - single exposure****Product:**

Remarks: Not expected to be a hazard.

STOT - repeated exposure**Product:**

Remarks: Not expected to be a hazard.

Aspiration toxicity**Product:**

Not considered an aspiration hazard.

Further information**Product:**

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.
ALL used oil should be handled with caution and skin contact avoided as far as possible.

SAFETY DATA SHEET

According to the Hazardous Products Regulations

Shell Rotella T5 10W-40

Version	Revision Date:	SDS Number:	Print Date: 2016-05-25
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			Date of first issue: 16.02.2010

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity**Product:**

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to crustacean (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants (Acute toxicity) : Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to crustacean (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability**Product:**

Biodegradability : Remarks: Expected to be not readily biodegradable.
Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: Contains components with the potential to bioac-

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Date of first issue: 16.02.2010

cumulate.

Partition coefficient: n-
octanol/water: Pow: > 6
Remarks: (based on information on similar products)**Mobility in soil****Product:**

Mobility

: Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be
mobile.

Remarks: Floats on water.

Other adverse effects**Product:**Additional ecological infor-
mation: Product is a mixture of non-volatile components, which are not
expected to be released to air in any significant quantities.
Not expected to have ozone depletion potential, photochemi-
cal ozone creation potential or global warming potential.Poorly soluble mixture.
May cause physical fouling of aquatic organisms.Mineral oil is not expected to cause any chronic effects to
aquatic organisms at concentrations less than 1 mg/l.**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues

: Waste product should not be allowed to contaminate soil or
ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.Disposal should be in accordance with applicable regional,
national, and local laws and regulations.
Local regulations may be more stringent than regional or na-
tional requirements and must be complied with.

Contaminated packaging

: Dispose in accordance with prevailing regulations, preferably
to a recognized collector or contractor. The competence of
the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional,
national, and local laws and regulations.

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			Date of first issue: 16.02.2010

SECTION 14. TRANSPORT INFORMATION**National Regulations****TDG**

Not regulated as a dangerous good

International Regulation**IATA-DGR**

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category	:	Not applicable
Ship type	:	Not applicable
Product name	:	Not applicable
Special precautions	:	Not applicable

Special precautions for user

Remarks	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.
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Additional Information	:	MARPOL Annex 1 rules apply for bulk shipments by sea.
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SECTION 15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

The components of this product are reported in the following inventories:

EINECS	:	All components listed or polymer exempt.
TSCA	:	All components listed.
DSL	:	All components listed.

SECTION 16. OTHER INFORMATION**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN -

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Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Revision Date : 2016-05-24

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN

Material Safety Data Sheet

1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : Shell Tellus S2 VX 22
Uses : Hydraulic fluid.
Product Code : 001E0122

Manufacturer/Supplier : Shell Canada Products
400 - 4th Avenue S.W
Calgary AB T2P 0J4
Canada

Telephone : (+1) 80066611600
Fax : (+1) 4033848345

Emergency Telephone Number
: CHEMTREC (24 hr): (+1) 800-424-9300
CANUTEC (24 hr): (+1) 613-996-6666

2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture Description : Highly refined mineral oils and additives.

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Refer to Chapter 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

WHMIS Class/Description : THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
Routes of Exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
Health Hazards : Not expected to be a health hazard when used under normal conditions. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. High-pressure injection under the skin may cause serious damage including local necrosis. Used oil may contain harmful impurities.
Signs and Symptoms : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Ingestion may result in nausea, vomiting and/or diarrhoea.
Safety Hazards : Not classified as flammable but will burn.
Environmental Hazards : Not classified as dangerous for the environment.

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4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : Typical 166 °C / 331 °F (COC)
- Upper / lower Flammability or Explosion limits** : Typical 1 - 10 %(V)(based on mineral oil)
- Auto ignition temperature** : > 320 °C / 608 °F
- Hazardous Combustion Products and Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

Material Safety Data Sheet

6. ACCIDENTAL RELEASE MEASURES

- Protective Measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	

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According to the Controlled Product Regulations

Consult local authorities for acceptable exposure limits within their jurisdiction.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.

Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Personal Protective Equipment : Personal protective equipment (PPE) should meet

recommended national standards. Check with PPE suppliers. **Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.

Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].

Hand Protection

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye Protection

: Wear safety glasses or full face shield if splashes are likely to occur.

Protective Clothing

: Skin protection not ordinarily required beyond standard issue work clothes.

Monitoring Methods

: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Environmental Exposure Controls

: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

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According to the Controlled Product Regulations

Appearance	: Clear. Liquid at room temperature.
Odour	: Slight hydrocarbon.
Odour threshold	: Data not available
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -51 °C / -60 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.859 at 15 °C / 59 °F
Density	: Typical 859 kg/m ³ at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 22 mm ² /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.
Hazardous Polymerisation	: No
Sensitivity to Mechanical Impact	: No
Sensitivity to Static Discharge	: No

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Routes of Exposure	: Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg, Rat.
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg, Rabbit.
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.

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- Carcinogenicity** : Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
- : Not expected to be a hazard.
- Reproductive and Developmental Toxicity** : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.
- Additional Information** : ALL used oil should be handled with caution and skin contact avoided as far as possible.
High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

Mobility : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

Persistence/degradability : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

Bioaccumulation : Contains components with the potential to bioaccumulate.

Other Adverse Effects : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to

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a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

Canadian Road and Rail Shipping Classification

This product is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Class/Description : THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.

Inventory Status

EINECS : All components listed or polymer exempt.
TSCA : All components listed.
DSL : One or more of the components of this product are listed on the NDSL. All other components are on the DSL.

16. OTHER INFORMATION

MSDS Version Number : 1.2
MSDS Effective Date : 2015-01-12
MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.
MSDS Regulation : The content and format of this (M)SDS is in accordance with the Controlled Product Regulations.
MSDS Prepared By : Shell Product Stewardship; 1-800-661-1600
MSDS Distribution : The information in this document should be made available to

Material Safety Data Sheet

all who may handle the product.

Disclaimer

The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Public

SAFETY DATA SHEET

B54T154

Section 1. Identification

Product name : PRO INDUSTRIAL™ Urethane Alkyd Enamel
Ultradeep Base

Product code : B54T154

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : THE SHERWIN-WILLIAMS COMPANY
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (800) 424-9300
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Product Information Telephone Number : US / Canada: (800) 524-5979
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (800) 424-9300
Mexico: SETIQ 01-800-00-214-00 / (52) 55-5559-1588 24 hours / 365 days a year

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 27.2% (oral), 27.2% (dermal), 27.2% (inhalation)

GHS label elements

Hazard pictograms :



Date of issue/Date of revision : 10/15/2020 **Date of previous issue** : 2/25/2020

B54T154 PRO INDUSTRIAL™ Urethane Alkyd Enamel
Ultradeep Base

Version : 16

1/19

SHW-85-NA-GHS-US

Section 2. Hazards identification

Signal word	: Danger
Hazard statements	: Flammable liquid and vapor. May be fatal if swallowed and enters airways. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. (lungs)
Precautionary statements	
Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
Response	: IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. Adequate ventilation required when sanding or abrading the dried film. If Adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release Crystalline Silica which has been shown to cause lung damage and cancer under long term exposure. Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.
Hazards not otherwise classified	: DANGER: Rags, steel wool, other waste soaked with this product, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled, metal container. Dispose of in accordance with local fire regulations.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.
CAS number/other identifiers	

Section 3. Composition/information on ingredients

Ingredient name	% by weight	CAS number
Light Aliphatic Hydrocarbon	≥25 - ≤50	64742-47-8
Talc	≤10	14807-96-6
Xylene, mixed isomers	<1	1330-20-7
Methyl Ethyl Ketoxime	<1	96-29-7
Hydrotreated Heavy Petroleum Naphtha	<1	64742-48-9
Methyl Isobutyl Ketone	<1	108-10-1
Zirconium 2-Ethylhexanoate	≤0.3	22464-99-9
Ethylbenzene	≤0.3	100-41-4
Med. Aliphatic Hydrocarbon Solvent	≤0.3	64742-88-7
Crystalline Silica, respirable powder	≤0.3	14808-60-7
Calcium 2-Ethylhexanoate	≤0.3	136-51-6
2-(2-Methoxyethoxy)-ethanol	≤0.3	111-77-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause an allergic skin reaction.

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Section 4. First aid measures

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away

Section 7. Handling and storage

from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	CAS #	Exposure limits
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 3/2020). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Talc	14807-96-6	NIOSH REL (United States, 10/2016). TWA: 2 mg/m ³ 10 hours. Form: Respirable fraction ACGIH TLV (United States, 3/2020). TWA: 2 mg/m ³ 8 hours. Form: Respirable fraction
Xylene, mixed isomers	1330-20-7	ACGIH TLV (United States, 3/2020). TWA: 100 ppm 8 hours. TWA: 434 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m ³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours.
Methyl Ethyl Ketoxime	96-29-7	AIHA WEEL (United States, 7/2018). Skin sensitizer. TWA: 10 ppm 8 hours.
Hydrotreated Heavy Petroleum Naphtha Methyl Isobutyl Ketone	64742-48-9 108-10-1	None. ACGIH TLV (United States, 3/2020). TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes. NIOSH REL (United States, 10/2016). TWA: 50 ppm 10 hours. TWA: 205 mg/m ³ 10 hours. STEL: 75 ppm 15 minutes. STEL: 300 mg/m ³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours.

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Zirconium 2-Ethylhexanoate	22464-99-9	TWA: 410 mg/m ³ 8 hours. ACGIH TLV (United States, 3/2020). TWA: 5 mg/m ³ , (as Zr) 8 hours. STEL: 10 mg/m ³ , (as Zr) 15 minutes. NIOSH REL (United States, 10/2016). TWA: 5 mg/m ³ , (as Zr) 10 hours. STEL: 10 mg/m ³ , (as Zr) 15 minutes. OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ , (as Zr) 8 hours.
Ethylbenzene	100-41-4	ACGIH TLV (United States, 3/2020). TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours. TWA: 435 mg/m ³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m ³ 15 minutes. OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours.
Med. Aliphatic Hydrocarbon Solvent	64742-88-7	OSHA PEL (United States, 5/2018). TWA: 100 ppm 8 hours. TWA: 400 mg/m ³ 8 hours.
Crystalline Silica, respirable powder	14808-60-7	OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 5/2018). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2020). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust
Calcium 2-Ethylhexanoate 2-(2-Methoxyethoxy)-ethanol	136-51-6 111-77-3	None. None.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Petroleum refining, hydrotreated light distillate	64742-47-8	CA British Columbia Provincial (Canada, 1/2020). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapour) 8 hours. CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 200 mg/m ³ , (as total hydrocarbon vapour) 8 hours. CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapour) 8 hours.
talc (none asbestiform)	14807-96-6	CA British Columbia Provincial (Canada, 1/2020). TWA: 2 mg/m ³ 8 hours. Form: Respirable

Section 8. Exposure controls/personal protection

Xylene	1330-20-7	<p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 3 mg/m³ 8 hours. Form: Respirable dust.</p> <p>CA Ontario Provincial (Canada, 6/2019). TWA: 2 mg/m³ 8 hours. Form: Respirable fraction. TWA: 2 f/cc 8 hours.</p> <p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 2 mg/m³ 8 hours. Form: Respirable particulate</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). TWA: 2 mg/m³ 8 hours. Form: respirable fraction</p> <p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 100 ppm 8 hours. 15 min OEL: 651 mg/m³ 15 minutes. 15 min OEL: 150 ppm 15 minutes. 8 hrs OEL: 434 mg/m³ 8 hours.</p> <p>CA British Columbia Provincial (Canada, 1/2020). TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes.</p> <p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 100 ppm 8 hours. TWAEV: 434 mg/m³ 8 hours. STEV: 150 ppm 15 minutes. STEV: 651 mg/m³ 15 minutes.</p> <p>CA Ontario Provincial (Canada, 6/2019). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.</p>
Methyl Ethyl Ketoxime	96-29-7	<p>AIHA WEEL (United States, 7/2018). Skin sensitizer. TWA: 10 ppm 8 hours.</p>
Methyl isobutyl ketone	108-10-1	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 205 mg/m³ 8 hours. 8 hrs OEL: 50 ppm 8 hours. 15 min OEL: 75 ppm 15 minutes. 15 min OEL: 307 mg/m³ 15 minutes.</p> <p>CA British Columbia Provincial (Canada, 1/2020). TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes.</p> <p>CA Ontario Provincial (Canada, 6/2019). TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes.</p> <p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 50 ppm 8 hours. TWAEV: 205 mg/m³ 8 hours. STEV: 75 ppm 15 minutes. STEV: 307 mg/m³ 15 minutes.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013).</p>

Section 8. Exposure controls/personal protection

Zirconium 2-Ethylhexanoate	22464-99-9	<p>STEL: 75 ppm 15 minutes. TWA: 50 ppm 8 hours.</p> <p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 5 mg/m³, (as Zr) 8 hours. 15 min OEL: 10 mg/m³, (as Zr) 15 minutes.</p> <p>CA British Columbia Provincial (Canada, 1/2020). TWA: 5 mg/m³, (as Zr) 8 hours. STEL: 10 mg/m³, (as Zr) 15 minutes.</p> <p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 5 mg/m³, (as Zr) 8 hours. STEV: 10 mg/m³, (as Zr) 15 minutes.</p> <p>CA Ontario Provincial (Canada, 6/2019). STEL: 10 mg/m³, (as Zr) 15 minutes. TWA: 5 mg/m³, (as Zr) 8 hours.</p>
Ethylbenzene	100-41-4	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 100 ppm 8 hours. 8 hrs OEL: 434 mg/m³ 8 hours. 15 min OEL: 543 mg/m³ 15 minutes. 15 min OEL: 125 ppm 15 minutes.</p> <p>CA British Columbia Provincial (Canada, 1/2020). TWA: 20 ppm 8 hours.</p> <p>CA Ontario Provincial (Canada, 6/2019). TWA: 20 ppm 8 hours.</p> <p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 100 ppm 8 hours. TWAEV: 434 mg/m³ 8 hours. STEV: 125 ppm 15 minutes. STEV: 543 mg/m³ 15 minutes.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.</p>
Quartz	14808-60-7	<p>CA British Columbia Provincial (Canada, 1/2020). TWA: 0.025 mg/m³ 8 hours. Form: Respirable</p> <p>CA Quebec Provincial (Canada, 7/2019). TWAEV: 0.1 mg/m³ 8 hours. Form: Respirable dust.</p> <p>CA Ontario Provincial (Canada, 6/2019). TWA: 0.1 mg/m³ 8 hours. Form: Respirable fraction.</p> <p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.025 mg/m³ 8 hours. Form: Respirable particulate</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). TWA: 0.05 mg/m³ 8 hours. Form: respirable fraction</p>

[Occupational exposure limits \(Mexico\)](#)

Section 8. Exposure controls/personal protection

	CAS #	Exposure limits
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 3/2020). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Zirconium 2-Ethylhexanoate	22464-99-9	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 5 mg/m ³ , (as Zr) 8 hours. STEL: 10 mg/m ³ , (as Zr) 15 minutes.
Ethylbenzene	100-41-4	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 20 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point/freezing point	: Not available.
Boiling point/boiling range	: 148°C (298.4°F)
Flash point	: Closed cup: 39°C (102.2°F) [Pensky-Martens Closed Cup]
Evaporation rate	: 0.13 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1% Upper: 6%
Vapor pressure	: 0.17 kPa (1.27 mm Hg) [at 20°C]
Vapor density	: 5 [Air = 1]
Relative density	: 1.08
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): <0.205 cm ² /s (<20.5 cSt)
Molecular weight	: Not applicable.
Aerosol product	
Heat of combustion	: 13.248 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Xylene, mixed isomers	LC50 Inhalation Gas.	Rat	6700 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
Methyl Ethyl Ketoxime Hydrotreated Heavy Petroleum Naphtha	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapor	Rat	8500 mg/m ³	4 hours
Methyl Isobutyl Ketone	LD50 Oral	Rat	>6 g/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
Zirconium 2-Ethylhexanoate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	>5 g/kg	-
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Talc	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
Xylene, mixed isomers	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
Methyl Ethyl Ketoxime	Skin - Mild irritant	Rat	-	8 hours 60 UI	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Methyl Isobutyl Ketone	Skin - Moderate irritant	Rabbit	-	100 %	-
	Eyes - Severe irritant	Rabbit	-	100 UI	-
Ethylbenzene	Eyes - Moderate irritant	Rabbit	-	24 hours 100 UI	-
	Eyes - Severe irritant	Rabbit	-	40 mg	-
2-(2-Methoxyethoxy)-ethanol	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Severe irritant	Rabbit	-	500 mg	-
Ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 500 mg	-
2-(2-Methoxyethoxy)-ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Talc	-	3	-
Xylene, mixed isomers	-	3	-
Methyl Isobutyl Ketone	-	2B	-
Ethylbenzene	-	2B	-
Crystalline Silica, respirable powder	-	1	Known to be a human carcinogen.

Section 11. Toxicological information

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Light Aliphatic Hydrocarbon	Category 3	-	Respiratory tract irritation
Xylene, mixed isomers	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Hydrotreated Heavy Petroleum Naphtha	Category 3	-	Respiratory tract irritation
Methyl Isobutyl Ketone	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Ethylbenzene	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
Med. Aliphatic Hydrocarbon Solvent	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
2-(2-Methoxyethoxy)-ethanol	Category 3 Category 3	-	Narcotic effects Respiratory tract irritation
	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Light Aliphatic Hydrocarbon	Category 2	-	-
Talc	Category 1	inhalation	lungs
Xylene, mixed isomers	Category 2	-	-
Hydrotreated Heavy Petroleum Naphtha	Category 2	-	-
Methyl Isobutyl Ketone	Category 2	-	-
Ethylbenzene	Category 2	-	-
Med. Aliphatic Hydrocarbon Solvent	Category 1	-	-
Crystalline Silica, respirable powder	Category 1	inhalation	-
2-(2-Methoxyethoxy)-ethanol	Category 2	-	-

Aspiration hazard

Name	Result
Light Aliphatic Hydrocarbon	ASPIRATION HAZARD - Category 1
Xylene, mixed isomers	ASPIRATION HAZARD - Category 1
Hydrotreated Heavy Petroleum Naphtha	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
Med. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Section 11. Toxicological information

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility.

Numerical measures of toxicity

Section 11. Toxicological information

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Light Aliphatic Hydrocarbon Xylene, mixed isomers	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Methyl Ethyl Ketoxime Methyl Isobutyl Ketone	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 843000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
Ethylbenzene	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 6.53 mg/l Marine water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 2.93 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
2-(2-Methoxyethoxy)-ethanol	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 >930 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 7500000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Xylene, mixed isomers	-	-	Readily
Methyl Isobutyl Ketone	-	-	Readily
Ethylbenzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Xylene, mixed isomers	-	8.1 to 25.9	low
Methyl Ethyl Ketoxime	-	2.5 to 5.8	low
Hydrotreated Heavy Petroleum Naphtha	-	10 to 2500	high
Zirconium 2-Ethylhexanoate	-	2.96	low
Calcium 2-Ethylhexanoate	-	2.96	low

Mobility in soil







Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT. Marine pollutant (Light Aliphatic Hydrocarbon)
Transport hazard class(es)	3 	3 	3 	3 	3  
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	Yes. The environmentally hazardous substance mark is not required.	Yes.
Additional information	This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).	-	The environmentally hazardous substance mark may appear if required by other transportation regulations.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E

Section 14. Transport information

<u>ERG No.</u>	<u>ERG No.</u>	<u>ERG No.</u>		
128	128	128		

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists

: **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		2
Physical hazards		0

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

History

Date of printing : 10/15/2020

Date of issue/Date of revision : 10/15/2020

Date of previous issue : 2/25/2020

Version : 16

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 SGG = Segregation Group
 UN = United Nations

📌 Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

Date of issue/Date of revision : 10/15/2020	Date of previous issue : 2/25/2020	Version : 16	18/19
B54T154	PRO INDUSTRIAL™ Urethane Alkyd Enamel Ultradeep Base	SHW-85-NA-GHS-US	

Safety Data Sheet

Sikaflex® Construction Sealant



Revision Date 08/30/2017

Print Date 02/01/2018

1. Identification

Product name : Sikaflex® Construction Sealant

Supplier : Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

E-mail address : ehs@sika-corp.com

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.


2. Hazards identification**GHS Classification**

Respiratory sensitization, Category 1 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization, Category 1 H317: May cause an allergic skin reaction.

Carcinogenicity, Category 1A (Inhalation) H350i: May cause cancer by inhalation.

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350i May cause cancer by inhalation.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P272 Contaminated work clothing must not be allowed out of the workplace.



P280 Wear protective gloves.
 P281 Use personal protective equipment as required.
 P285 In case of inadequate ventilation wear respiratory protection.
Response:
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P363 Wash contaminated clothing before reuse.
Storage:
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.
 There are no hazards not otherwise classified that have been identified during the classification process.
 There are no ingredients with unknown acute toxicity used in a mixture at a concentration $\geq 1\%$.

3. Composition/information on ingredients

Hazardous ingredients

Chemical name	CAS-No.	Concentration (%)
Quartz (SiO ₂) <5µm	14808-60-7	$\geq 0.1 - < 1\%$
aromatic polyisocyanate	53317-61-6	$\geq 0.1 - < 1\%$
4,4'-methylenediphenyl diisocyanate	101-68-8	$\geq 0.1 - < 1\%$

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.
 Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
 Wash off with soap and plenty of water.
 If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
 Do not induce vomiting without medical advice.



Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 Obtain medical attention.

Most important symptoms and effects, both acute and delayed	: sensitizing effects carcinogenic effects Asthmatic appearance Allergic reactions See Section 11 for more detailed information on health effects and symptoms.
	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer by inhalation.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.



7. Handling and storage

- Advice on safe handling : Do not breathe vapors or spray mist.
 Avoid exceeding the given occupational exposure limits (see section 8).
 Do not get in eyes, on skin, or on clothing.
 For personal protection see section 8.
 Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
 Smoking, eating and drinking should be prohibited in the application area.
 Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
 Store in original container.
 Keep container tightly closed in a dry and well-ventilated place.
 Observe label precautions.
 Store in accordance with local regulations.
- Materials to avoid : No data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
Quartz (SiO ₂) <5µm	14808-60-7	OSHA Z-3	TWA	10 mg/m ³ / %SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf / %SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m ³ Respirable fraction
		ACGIH	TWA	0.025 mg/m ³ Respirable fraction
		OSHA Z-1	TWA	0.05 mg/m ³ Respirable dust
4,4'-methylenediphenyl diisocyanate	101-68-8	ACGIH	TWA	0.005 ppm
		OSHA Z-1	C	0.02 ppm 0.2 mg/m ³
		OSHA P0	C	0.02 ppm

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				0.2 mg/m3
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*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminat (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection

: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

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9. Physical and chemical properties

Appearance	: paste
Color	: various
Odor	: characteristic
Odor Threshold	: No data available
Flash point	: Note: Not applicable
Ignition temperature	: No data available
Decomposition temperature	: No data available
Lower explosion limit (Vol%)	: No data available
Upper explosion limit (Vol%)	: No data available
Flammability (solid, gas)	: No data available
Oxidizing properties	: No data available
pH	: Note: Not applicable
Melting point/range / Freezing point	: No data available
Boiling point/boiling range	: No data available
Vapor pressure	: 0.01 mmHg (0.01 hpa)
Density	: ca. 1.48 g/cm ³ at 73 °F (23 °C)
Water solubility	: Note: insoluble
Partition coefficient: n- octanol/water	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: > 20.5 mm ² /s
Relative vapor density	: No data available
Evaporation rate	: No data available
Burning rate	: No data available
Volatile organic compounds (VOC) content	: 8 g/l

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
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Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: No data available
Incompatible materials	: No data available

11. Toxicological information

Acute toxicity

Not classified based on available information.

Ingredients:

aromatic polyisocyanate:

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg

4,4'-methylenediphenyl diisocyanate:

Acute inhalation toxicity : Acute toxicity estimate: 1.5 mg/l
 Test atmosphere: dust/mist
 Method: Expert judgment

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization: May cause an allergic skin reaction.

Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Aspiration toxicity

Not classified based on available information.

Carcinogenicity

May cause cancer by inhalation.

IARC Group 1: Carcinogenic to humans

Quartz (SiO₂) <5µm 14808-60-7

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Group 2B: Possibly carcinogenic to humans

NTP	titanium dioxide	13463-67-7
	Carbon black	1333-86-4
	Known to be human carcinogen	

Carbon black (1333-86-4)	Quartz (SiO ₂) <5µm	14808-60-7
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Animal Toxicity:

Rat, oral, duration 2 year
Effect: no tumors

Mouse, oral, duration 2 years
Effect: no tumors

Mouse, dermal, duration 18 months
Effect: no skin tumors

Rat, inhalation, duration 2 years
Target organ: lungs
Effect: inflammation, fibrosis, tumors

Note: Tumors in the rat lung are considered to be related to the "particle overload phenomenon" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions.

Mortality studies (human data): A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study) found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (DEll, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010).

Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington.

Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

IARC CANCER CLASSIFICATION: In 2006 IARC re-affirmed its 1995 finding that there is "inadequate evidence" from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is "sufficient evidence" in experimental animal studies for the carcinogenicity of carbon black. IARC's overall evaluation is that carbon black is "possibly carcinogenic to humans" (Group 2B)". This conclusion was based on IARC's guidelines, which generally require such a classification if one species exhibits carcinogenicity in



two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was "sufficient evidence" that carbon black extracts can cause cancer in animals (Group 2B).

ICGIH CANCER CLASSIFICATION: Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

ASSESSMENT: Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rats tumors are a result of a secondary non-genotoxic mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity - Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk to carcinogenicity.

Titanium dioxide (13463-67-7)

In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have been shown to cause an increase in lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related to the particle size and the amount of the exposed surface area that comes into contact with the lung. However, tests with other laboratory animals such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that cause lung cancer. Epidemiology studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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13. Disposal considerations

Disposal methods

Waste from residues	: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
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Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

No data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. Regulatory information

TSCA list : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Chronic Health Hazard
Acute Health Hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

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Ozone-Depletion Potential

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

WARNING: Reproductive Harm and Cancer –
www.P65Warnings.ca.gov

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 08/30/2017

Safety Data Sheet

Sikaflex® Construction Sealant



Revision Date 08/30/2017

Print Date 02/01/2018

Material number: 90629



SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **SWAK AND CLASSIC SWAK**
Synonym(s) ANAEROBIC THREAD SEALANT • CLASSIC SWAK • SWAGELOK SWAK • SWAK

1.2 Uses and uses advised against

Use(s) ANAEROBIC SEALANT • SEALANT • THREAD SEALANT

1.3 Details of the supplier of the product

Supplier name **SWAGELOK EASTERN AUSTRALIA**
Address 42 Metrolink Circuit, Campbellfield, Victoria, 3061, AUSTRALIA
Telephone (03) 9303 2100
Fax (03) 9303 9565
Email sales@swagelokES.com.au
Website <http://www.swagelok.com.au>

1.4 Emergency telephone number(s)

Emergency 13 11 26

1.7 Details of alternative supplier(s) of the product

Supplier name **SWAGELOK WESTERN AUSTRALIA**
26 Parkinson Lane, Kardinya, Perth, WA, 6163, AUSTRALIA
Phone: (08) 9331 1111
Emergency: 13 11 26
sales@swagelokwa.com.au
<http://www.swagelok.com.au>

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification(s)

Skin Corrosion/Irritation: Category 2
Serious Eye Damage / Eye Irritation: Category 2A
Specific Target Organ Systemic Toxicity (Single Exposure): Category 3

2.2 Label elements

Signal word **WARNING**

Pictogram(s)



Hazard statement(s)

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

PRODUCT NAME SWAK AND CLASSIC SWAK

Prevention statement(s)

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P321 Specific treatment is advised - see first aid instructions.
P362 Take off contaminated clothing and wash before re-use.

Storage statement(s)

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal statement(s)

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ETHOXYLATED BISPHENOL A DIMETHACRYLATE	41637-38-1	609-946-4	30 to 40%
POLYETHYLENE GLYCOL	25322-68-3	500-038-2	1 to 5%
TITANIUM DIOXIDE	13463-67-7	236-675-5	1 to 5%
POLYTETRAFLUOROETHYLENE (TEFLON)	9002-84-0	618-337-2	30 to 40%
POLY(1,2 PROPYLENE GLYCOL AZELATE) ESTER	29408-67-1	608-355-9	20 to 30%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye
If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation
If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion
For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities
None allocated.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

PRODUCT NAME SWAK AND CLASSIC SWAK

5.2. Special hazards arising from the substance or mixture
Combustible. May evolve carbon oxides and hydrocarbons when heated to decomposition. May evolve hydrogen fluoride gas when heated to decomposition.

5.3. Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4. Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2. Environmental precautions
Prevent product from entering drains and waterways.

6.3. Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Only trained personnel should undertake clean up.

6.4. Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation and fire protection systems. Store as a Class C1 Combustible Liquid (AS1940).

7.3. Specific end use(s)
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL
		ppm	mg/m ³	
Titanium dioxide (a)	SWA (AUS)	–	10	–

Biological limits

No biological limit values have been entered for this product.

8.2. Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

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PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear rubber or butyl or nitrile gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF WHITE PASTE
Odour	SLIGHT ODOUR
Flammability	CLASS C1 COMBUSTIBLE
Flash point	> 110°C
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	1.3
Solubility (water)	NOT AVAILABLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT AVAILABLE
Lower explosion limit	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	> 250°C
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

May polymerise with violent rupture/explosion.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

May polymerise in contact with oxidising agents (e.g. nitrates), acids (e.g. nitric acid), reducing agents (e.g. sulphites), amines, UV light, alkalis (e.g. hydroxides), or if heated. Polymerisation may generate heat with potential for fire-explosion.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

PRODUCT NAME SWAK AND CLASSIC SWAK

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Information available for the ingredient(s):

Ingredient	Oral Toxicity (LD50)	Dermal Toxicity (LD50)	Inhalation Toxicity (LC50)
POLYETHYLENE GLYCOL	33750 mg/kg (rat)	> 20000 mg/kg (rabbit)	--

Skin Contact may result in irritation, rash and dermatitis.

Eye Contact may result in irritation, lacrimation, pain and redness.

Sensitisation May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing, nausea and headache. High level exposure may result in dizziness, drowsiness, breathing difficulties and unconsciousness.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No known ecological effects.

12.2 Persistence and degradability

Degradability is not established.

12.3 Bioaccumulative potential

No known adverse bioaccumulation or biomagnification effects.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal

For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required). Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation

Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

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14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)]:

Hazard codes	Xi	Irritant
Risk phrases	R36/37/38	Irritating to eyes, respiratory system and skin.
Safety phrases	S20 S37/39	When using, do not eat or drink. Wear suitable gloves and eye/face protection.

Inventory listing(s)

AUSTRALIA: AICS (Australian Inventory of Chemical Substances)

All components are listed on AICS, or are exempt.

UNITED STATES: TSCA (US Toxic Substances Control Act)

All components are listed on the TSCA inventory, or are exempt.

16. OTHER INFORMATION

Additional information

WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, **ENGINEERING CONTROLS** are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

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Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').


It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]

	<h1>Safety Data Sheet</h1>	<p>24 Hour Emergency Phone Numbers Medical/Poison Control: In U.S.: Call 1-800-222-1222</p> <p>Outside U.S.: Call your local poison control center</p> <p>Transportation/National Response Center:</p> <p style="text-align: center;">1-800-535-5053 1-352-323-3500</p> <p>NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.</p>
<p>IMPORTANT: Provide this information to employees, customers, and users of this product. Read this SDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this SDS are further described in Section 16.</p>		
<h2>1. Identification</h2>		

Product Name:	Touch N Foam Max Fill Triple Expanding Sealant	Revision Date:	10/14/2019
Product UPC Number:	075650316207, 075650000311, 075650316122, 075650001271, 075650603161, 075650001288, 075650000328	Supersedes Date:	10/11/2018
Manufacturer:	DAP Products Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (non - emergency matters)	Product Use/Class:	Foam Sealant/Adhesive
	SDS Coordinator: MSDS@dap.com	SDS No:	00047013001
	Emergency Telephone: 1-800-535-5053, 1-352-323-3500, 1-800-222-1222	Preparer:	Regulatory and Environmental Affairs

2. Hazards Identification

GHS Classification

Carc. 2, Comp. Gas, Eye Irrit. 2, Fl Aer, 1, Resp. Sens. 1, Skin Irrit. 2, Skin Sens. 1, STOT RE 2, STOT SE 3 RT1

Symbol(s) of Product



Signal Word

Danger

Possible Hazards

23% of the mixture consists of ingredients of unknown acute toxicity

GHS HAZARD STATEMENTS

SDS Number: 00047013001

SAP Number:

Revision Date: 10/14/2019

Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Respiratory Sensitizer, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Carcinogenicity, category 2	H351	Suspected of causing cancer.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P284	[In case of inadequate ventilation] wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see ... on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/ 122°F.
P501	Dispose of contents/container to ...

GHS SDS PRECAUTIONARY STATEMENTS

P363	Wash contaminated clothing before reuse.
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3. Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt. %</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Polymeric diphenylmethane diisocyanate	9016-87-9	15-40	GHS07	H332
4,4'-Methylene diphenyl diisocyanate (MDI)	101-68-8	10-30	GHS07-GHS08	H315-317-319-332-334-335-351-373
Propylene glycols	25322-69-4	7-13	No Information	No Information
Tris(2-chloro-1-methylethyl) phosphate	13674-84-5	7-13	GHS07	H302-332
Dimethyl ether	115-10-6	5-10	No Information	No Information
Isobutane	75-28-5	3-7	GHS07	H332-336
Propane	74-98-6	1-5	GHS07	H332-336

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

4. First-aid Measures

FIRST AID - INHALATION: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

FIRST AID - SKIN CONTACT: Wash skin with soap and water for 15 minutes. Get medical aid if symptoms persist. Use a rag to remove excess foam from skin and remove contaminated clothing. Use of a solvent, such as acetone (nail polish remover) or mineral spirits, may help in removing uncured foam residue from clothing or other surfaces (avoid eye contact). Cured foam may be physically removed by persistent washing with soap and water. If irritation develops, use mild skin cream. If irritation persists, obtain medical attention.

FIRST AID - EYE CONTACT: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

FIRST AID - INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

5. Fire-fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may burst if exposed to extreme heat or fire. Containers may explode if exposed to extreme heat. Empty containers retain product residue (liquid and/or vapor). Vapor can ignite potentially causing an explosion.

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

EXTINGUISHING MEDIA: Alcohol Foam, Carbon Dioxide, Dry Chemical, Water Fog

6. Accidental Release Measures

ENVIRONMENTAL MEASURES: No Information

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: NOTE: Review fire hazards before proceeding with clean up. Immediately eliminate sources of ignition. Keep people away from and upwind of spill/leak. Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Use personal protective equipment as necessary. Read all product instructions before using. Personal protective equipment should include impervious gloves, protective eye wear, and suitable work clothes. Scrape up dried material and place into containers. Uncured product is very sticky, so carefully remove the bulk of the foam by scraping it up and then immediately remove residue with a rag and solvent such as polyurethane cleaner, mineral spirits, acetone (nail polish remover), paint thinner, etc. Once the product has cured, it can only be removed physically by scraping, buffing, etc. Dispose as plastic waste (foam plastic) in accordance with all applicable guidelines and regulations.

7. Handling and Storage

HANDLING: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Remove all sources of ignition. Make sure nozzle is directed away from yourself prior to discharge. Keep away from open flames, hot surfaces and sources of ignition. Avoid heat, sparks and open flames. Wear appropriate personal protection. Avoid breathing vapor and contact with eyes, skin and clothing. Use only with adequate ventilation. Ensure fresh air entry during application and drying. Do not breathe dust. While dry sanding, use of a NIOSH-approved dust mask is recommended. Empty containers retain product residue (liquid and/or vapor). Vapor can ignite potentially causing an explosion. Wash thoroughly after handling. Contains isocyanates. See information supplied by the manufacturer. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

STORAGE: Store away from sources of ignition and heat. Protect material from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers.

8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

<u>Chemical Name</u>	<u>ACGIH TLV-TWA</u>	<u>ACGIH-TLV STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>
Polymeric diphenylmethane diisocyanate	N.E.	N.E.	N.E.	N.E.
4,4'-Methylene diphenyl diisocyanate (MDI)	0.005 ppm TWA	N.E.	N.E.	0.02 ppm Ceiling, 0.2 mg/m3 Ceiling
Methylene bisphenyl isocyanate (MDI)				
Propylene glycols	N.E.	N.E.	N.E.	N.E.
Tris(2-chloro-1-methylethyl) phosphate	N.E.	N.E.	N.E.	N.E.
Dimethyl ether	N.E.	N.E.	N.E.	N.E.
Isobutane	N.E.	1000 ppm STEL explosion hazard	N.E.	N.E.
		Butane, isomers		
Propane	See Appendix F: Minimal Oxygen Content, explosion hazard	N.E.	1000 ppm TWA, 1800 mg/m3 TWA	N.E.

Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation
Sk = Skin Sensitizer N.E. = Not Established

Personal Protection



RESPIRATORY PROTECTION: When concentrations exceed the exposure limits specified, use of a NIOSH-approved dust, mist and fume respirator is recommended. Where the protection factor of the respirator may be exceeded, use of a full facepiece, supplied air, or Self Contained Breathing Apparatus (SCBA) may be necessary. No personal respiratory protective equipment normally required. If concentrations exceed the exposure limits specified, use of a NIOSH-approved supplied air respirator is recommended. Where the protection factor is exceeded, use of a Self Contained Breathing Apparatus (SCBA) may be necessary. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.



SKIN PROTECTION: Wear nitrile, neoprene, or natural rubber gloves. Wear solvent impervious gloves. Wear protective gloves.



EYE PROTECTION: Goggles or safety glasses with side shields.



OTHER PROTECTIVE EQUIPMENT: Provide eyewash and solvent impervious apron if body contact may occur.



HYGIENIC PRACTICES: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Appearance:	Amber	Physical State:	Foam
Odor:	Solvent	Odor Threshold:	Not Established
Density, g/cm³:	0.99 - 1.02	pH:	Not Applicable
Freeze Point, °C:	Not Established	Viscosity (mPa.s):	Not Applicable
Solubility in Water:	No Information	Partition Coeff., n-octanol/water:	Not Established
Decomposition Temperature, °C:	Not Established	Explosive Limits, %:	N.E. - N.E.
Boiling Range, °C:	N.E. - N.E.	Auto-Ignition Temperature, °C	Not Established
Minimum Flash Point, °C:	Not Applicable	Vapor Pressure, mmHg:	Not Established
Evaporation Rate:	Faster Than n-Butyl Acetate	Flash Method:	Not Applicable
Vapor Density:	Heavier Than Air	Flammability, NFPA:	Aerosol Level II
Combustible Dust:	Does not support combustion		

(See "Other information" Section for abbreviation legend)

(If product is an aerosol, the flash point stated above is that of the propellant.)

10. Stability and Reactivity

STABILITY: Stable under recommended storage conditions.

CONDITIONS TO AVOID: Do not breathe dust. Avoid dust formation in confined areas. Excessive heat and freezing. Keep away from open flames, hot surfaces and sources of ignition. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

INCOMPATIBILITY: Open flames, hot surfaces and sources of ignition. Incompatible with strong bases and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e., CO_x, NO_x.

11. Toxicological Information

EFFECT OF OVEREXPOSURE - INHALATION: Vapors may be irritating to eyes, nose, throat, and lungs. Inhalation of high concentrations may cause headache, nausea, and dizziness. Prolonged, repeated, or high exposures may cause irritation to the respiratory tract (nose, mouth, mucous membranes).

EFFECT OF OVEREXPOSURE - SKIN CONTACT: May cause sensitization by skin contact. May cause localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization and/or contact dermatitis. This product has strong adhesive-like characteristics and will adhere aggressively to skin and other surfaces. If accidental contact occurs, follow the appropriate first-aid procedure described in Section 4 of this SDS.

EFFECT OF OVEREXPOSURE - EYE CONTACT: Direct eye contact may cause irritation. May cause eye irritation. Mist and vapors may cause eye irritation. Foam contact can cause physical damage due to adhesive character.

EFFECT OF OVEREXPOSURE - INGESTION: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

CARCINOGENICITY: Limited evidence in experimental animals.

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: Repeated or prolonged exposure may cause respiratory system damage. Repeated contact may cause allergic reactions in very susceptible persons. Prolonged or repeated inhalation of dust may cause lung damage.

PRIMARY ROUTE(S) OF ENTRY: Skin Contact, Inhalation, Eye Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
9016-87-9	Polymeric diphenylmethane diisocyanate	49000 mg/kg Rat	>9400 mg/kg Rabbit	N.I.
101-68-8	4,4'-Methylene diphenyl diisocyanate (MDI)	31600 mg/kg Rat	9400 mg/kg Rabbit	N.I.
25322-69-4	Propylene glycols	3750 mg/kg Rat	N.I.	N.I.
13674-84-5	Tris(2-chloro-1-methylethyl) phosphate	1500 mg/kg Rat	>5000 mg/kg Rabbit	N.I.
115-10-6	Dimethyl ether	>2000 mg/kg	>2000 mg/kg	N.I.
75-28-5	Isobutane	N.I.	N.I.	658 mg/L Rat
74-98-6	Propane	Not an exposure route	Not an exposure route	N.I.

N.I. = No Information

12. Ecological Information

ECOLOGICAL INFORMATION: No Information

13. Disposal Information

DISPOSAL INFORMATION: Residues and spilled material are hazardous waste due to ignitability. Contents under pressure. Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste. Liquids cannot be disposed of in a landfill. Do not flush into surface water or sanitary sewer system. Do not empty into drains. Do not re-use empty containers. The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Before disposing of containers, relieve container of any remaining product and pressure. Empty cylinders, once relieved of all pressure, can be disposed of as non-hazardous waste.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: NOTE: Review fire hazards before proceeding with clean up. Immediately eliminate sources of ignition. Keep people away from and upwind of spill/leak. Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Use personal protective equipment as necessary. Read all product instructions before using. Personal protective equipment should include impervious gloves, protective eye wear, and suitable work clothes. Scrape up dried material and place into containers. Uncured product is very sticky, so carefully remove the bulk of the foam by scraping it up and then immediately remove residue with a rag and solvent such as polyurethane cleaner, mineral spirits, acetone (nail polish remover), paint thinner, etc. Once the product has cured, it can only be removed physically by scraping, buffing, etc. Dispose as plastic waste (foam plastic) in accordance with all applicable guidelines and regulations.

14. Transport Information

DOT UN/NA Number: UN1950
DOT Proper Shipping Name: Aerosols, flammable
DOT Technical Name: N.A.
DOT Hazard Class: 2.1 Flammable gas
Hazard SubClass: N.A.
Packing Group: N.A.

15. Regulatory Information

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

16. Other Information

Revision Date: 10/14/2019 **Supersedes Date:** 10/11/2018

Reason for revision: Revision Description Changed
 Product Composition Changed
 Substance and/or Product Properties Changed in Section(s):
 01 - Product Information
 05 - Flammability Information
 09 - Physical & Chemical Information
 11 - Toxicological Information
 16 - Other Information
 Revision Statement(s) Changed

Datasheet produced by: Regulatory Department

HMIS Ratings:

Health:	Flammability:	Reactivity:	Personal Protection:
2*	4	3	X

VOC Less Water Less Exempt Solvent, g/L: 173.5

VOC Material, g/L: 173

VOC as Defined by California Consumer Product Regulation, Wt/Wt%: 17.55

VOC Actual, Wt/Wt%: 17.5

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS07



GHS08



Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

SAFETY DATA SHEET

TRASAR™ TRAC100

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TRASAR™ TRAC100

Other means of identification : Not applicable.

Recommended use : CLOSED LOOP TREATMENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/24/2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1
Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair):
Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with
water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

SAFETY DATA SHEET

TRASAR™ TRAC100**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No.	Concentration: (%)
Sodium Molybdate	7631-95-0	10 - 30
Sodium Metasilicate	6834-92-0	5 - 10
Sodium Tetraborate	1330-43-4	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
In case of skin contact	:	Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
If swallowed	:	Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
If inhaled	:	Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	:	Treat symptomatically.
Most important symptoms and effects, both acute and delayed	:	See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	Not flammable or combustible.
Hazardous combustion products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

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Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Stainless Steel 304, Brass, Neoprene, Buna-N, EPDM, Polyethylene (rigid), Polypropylene (rigid), CPVC (rigid), Plasite 4300, Plasite 7122, Chlorosulfonated polyethylene rubber, Fluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Polyurethane, coated steel

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sodium Molybdate	7631-95-0	TWA (Total dust)	15 mg/m ³ (as Mo)	OSHA Z1
		TWA (Inhalable fraction)	10 mg/m ³ (as Mo)	ACGIH
		TWA (Respirable fraction)	3 mg/m ³ (as Mo)	ACGIH
Sodium Tetraborate	1330-43-4	TWA	1 mg/m ³	NIOSH REL
		TWA (Inhalable fraction)	2 mg/m ³ (Borate)	ACGIH
		STEL (Inhalable fraction)	6 mg/m ³ (Borate)	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below

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TRASAR™ TRAC100

occupational exposure standards.

Personal protective equipment

Eye protection	: Safety goggles Face-shield
Hand protection	: Wear the following personal protective equipment: Standard glove type. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
Respiratory protection	: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: Light yellow
Odour	: odourless
Flash point	: > 93.3 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: 13,(100 %)
Odour Threshold	: no data available
Melting point/freezing point	: FREEZING POINT: -6.7 °C, ASTM D-1177
Initial boiling point and boiling range	: no data available
Evaporation rate	: similar to water
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.211, (25 °C),
Density	: 10.1 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-	: no data available

SAFETY DATA SHEET**TRASAR™ TRAC100**

octanol/water

Auto-ignition temperature : no data available
 Thermal decomposition : no data available
 Viscosity, dynamic : no data available
 Viscosity, kinematic : no data available
 Molecular weight : no data available
 VOC : no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.
 Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
 Conditions to avoid : None known.
 Incompatible materials : Strong acids
 Hazardous decomposition products : Decomposition products may include the following materials:
 Carbon oxides
 nitrogen oxides (NO_x)
 Sulphur oxides
 Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.
 Skin : Causes severe skin burns.
 Ingestion : Causes digestive tract burns.
 Inhalation : May cause nose, throat, and lung irritation.
 Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion
 Skin contact : Redness, Pain, Corrosion
 Ingestion : Corrosion, Abdominal pain
 Inhalation : Respiratory irritation, Cough

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Toxicity**Product**

Acute oral toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Components

Acute inhalation toxicity	: Sodium Molybdate LC50 rat: > 5.10 mg/l Exposure time: 4 h
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Section: 12. ECOLOGICAL INFORMATION
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Ecotoxicity

Environmental Effects	: This product has no known ecotoxicological effects.
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Product

Toxicity to fish Toxicity to daphnia and other aquatic invertebrates	: NOEC Pimephales promelas (fathead minnow): 10,000 mg/l Exposure time: 96 h Test substance: Product LC50 Pimephales promelas (fathead minnow): > 10,000 mg/l Exposure time: 96 h Test substance: Product : NOEC Ceriodaphnia dubia: 3,600 mg/l Exposure time: 48 h Test substance: Product LC50 Ceriodaphnia dubia: 7,752 mg/l Exposure time: 48 h Test substance: Product
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SAFETY DATA SHEET**TRASAR™ TRAC100****Persistence and degradability**

The organic portion of this preparation is expected to be readily biodegradable.

Chemical Oxygen Demand (COD): 6,800 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	16 mg/l	

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%
Soil	:	50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D002

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

SAFETY DATA SHEET**TRASAR™ TRAC100****Land transport (DOT)**

Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
 Technical name(s) : Sodium Metasilicate
 UN/ID No. : UN 3266
 Transport hazard class(es) : 8
 Packing group : III

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
 Technical name(s) : Sodium Metasilicate
 UN/ID No. : UN 3266
 Transport hazard class(es) : 8
 Packing group : III

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
 Technical name(s) : Sodium Metasilicate
 UN/ID No. : UN 3266
 Transport hazard class(es) : 8
 Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
 No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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INTERNATIONAL CHEMICAL CONTROL LAWS :**Canadian Domestic Substances List (DSL)**

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On TSCA Inventory

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

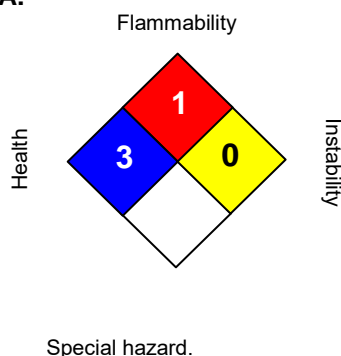
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

not determined

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:**HMIS III:**

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/24/2017
Version Number : 1.1
Prepared By : Regulatory Affairs

SAFETY DATA SHEET

TRASAR™ TRAC100

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.



SAFETY DATA SHEET

SDS ID NO.: 0290MAR019
Revision Date 06/01/2016

1. IDENTIFICATION

Product Name: Marathon Petroleum No. 2 Ultra Low Sulfur Diesel

Synonym: #2 Diesel; No. 2 Ultra Low Sulfur Diesel 15 ppm Sulfur Max; Ultra Low Sulfur Diesel No. 2 15 ppm Sulfur Max; Ultra Low Sulfur Diesel No. 2 15 ppm Sulfur Max with Polar Plus; No. 2 Diesel, Motor Vehicle Use, Undyed; No. 2 Diesel, Motor Vehicle Use, Undyed, with Polar Plus; ULSD No. 2 Diesel 15 ppm Sulfur Max; ULSD No. 2 Diesel 15 ppm Sulfur Max with Polar Plus; No. 2 NR 15 Diesel; No. 2 NR 15 Diesel with Polar Plus; No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max; Ultra Low Sulfur Diesel No. 2 Dyed 15 ppm Sulfur Max; Ultra Low Sulfur Diesel No. 2 Dyed 15 ppm Sulfur Max with Polar Plus; No. 2 Diesel, Tax Exempt-Motor Vehicle Use, Dyed; No. 2 Diesel, Tax Exempt-Motor Vehicle Use, Dyed, with Polar Plus; ULSD No. 2 Diesel Dyed 15 ppm Sulfur Max; ULSD No. 2 Diesel Dyed 15 ppm Sulfur Max, with Polar Plus; No. 2 NR 15 Diesel Dyed; #2 NR 15 CFI Diesel; #2 NR 15 CFI Diesel Dyed; No. 2 Low Sulfur Diesel (TxLED); No. 2 NR 15 Diesel Dyed, with Polar Plus; No. 2 NRLM 15 Diesel Dyed; No.2 NRLM Diesel Dyed; No. 2 NR 500 ppm TxLED; No.2 Low Emission Low Sulfur Diesel; No. 2 Low Sulfur Diesel (TxLED) 500 ppm Sulfur Max; No. 2 Heating Oil 5000 NMA Unmarked; NEMA No. 2 Heating Oil; Heating Oil, No. 2 Low Sulfur 5000 ppm; No. 2 Ultra Low Sulfur Diesel Dyed with <6% Renewable Diesel Fuel; Ultra Low Sulfur No. 2 Diesel Dyed with <6% Renewable Diesel Fuel; No. 2 Diesel Dyed with <6% Renewable Diesel Fuel 15 ppm Sulfur Max; No. 2 Ultra Low Sulfur Diesel with <6% Renewable Diesel Fuel; Ultra Low Sulfur No. 2 Diesel with <6% Renewable Diesel Fuel; No. 2 Diesel with <6% Renewable Diesel Fuel 15 ppm Sulfur Max; Garyville Export Diesel; Export Diesel, Garyville; Diesel Fuel, Export Garyville; #2 Motor Vehicle ULSD 15 ppm with 0-5% Renewable Diesel; Marathon No. 2 ULSD with 0-5% Renewable Fuel with R100; Marathon No. 2 ULSD with 0-5% Renewable Fuel with R99; No. 2 Heating Oil 2000 ppm Sulfur Max, Clear (Undyed) Unmarked; Ultra Low Sulfur Heating Oil 15 ppm Sulfur Max, Clear (Undyed) Unmarked; ULS Heating Oil 15 ppm Clear (Undyed) Unmarked; ULS HO 15 ppm CLR; Ultra-Low Sulfur Heating Oil (<= 15ppm, Undyed); No. 2 Heating Oil 2000 ppm Sulfur Max, Dyed Unmarked; No. 2 Heating Oil 2000 ppm Sulfur Max, Dyed Marked; Ultra Low Sulfur Heating Oil 15 ppm Sulfur Max, Dyed Unmarked; Ultra Low Sulfur Heating Oil 15 ppm Sulfur Max, Dyed Marked; 15 ppm Sulfur Heating Oil Grade 67; 15 PPM Heating Oil; 15 PPM Dyed Heating Oil; 0291MAR019; 0306MAR019; 0308MAR019; 0334MAR019; 0335MAR019; 0336MAR019; 0337MAR019; 0340MAR019;

Product Code: 0290MAR019
Chemical Family: Complex Hydrocarbon Substance

Recommended Use: Fuel.
Restrictions on Use: All others.

Manufacturer, Importer, or Responsible Party Name and Address:
MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Hazards Not Otherwise Classified (HNOC)

Static accumulating flammable liquid

Label elements

EMERGENCY OVERVIEW

Danger

FLAMMABLE LIQUID AND VAPOR

May accumulate electrostatic charge and ignite or explode

May be fatal if swallowed and enters airways

Harmful if inhaled

Causes skin irritation

May cause respiratory irritation

May cause drowsiness or dizziness

Suspected of causing cancer

May cause damage to organs (thymus, liver, bone marrow) through prolonged or repeated exposure

Toxic to aquatic life with long lasting effects



Appearance Yellow to Red Liquid

Physical State Liquid

Odor Hydrocarbon

Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use only non-sparking tools.

Use explosion-proof electrical/ventilating/lighting/equipment

Take precautionary measures against static discharge

Do not breathe mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wear protective gloves/protective clothing/eye protection/face protection
Wash hands and any possibly exposed skin thoroughly after handling
Avoid release to the environment

Precautionary Statements - Response

IF exposed or concerned: Get medical attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting
In case of fire: Use water spray, fog or regular foam for extinction
Collect spillage

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

No. 2 Ultra Low Sulfur Diesel is a complex mixture of paraffins, cycloparaffins, olefins and aromatic hydrocarbon chain lengths predominantly in the range of eleven to twenty carbons. May contain up to 5% Renewable Diesel. May contain small amounts of dye and other additives (<0.15%) which are not considered hazardous at the concentration(s) used. May contain a trace amount of benzene (<0.01%). Contains a trace amount of sulfur (<0.0015%)

Composition Information:

Name	CAS Number	% Concentration
No. 2 Diesel Fuel	68476-34-6	50-100
Kerosine (petroleum)	8008-20-6	0-50
Alkanes, C10-C20 branched and linear	928771-01-1	0-5
Naphthalene	91-20-3	0.3-2.6

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First Aid Measures**General Advice:**

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact:

Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous

properties. Destroy contaminated, non-chemical resistant footwear.

Eye Contact:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion:

Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important signs and symptoms, both short-term and delayed with overexposure**Adverse Effects:**

Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking. Prolonged or repeated exposure may cause adverse effects to the thymus, liver, and bone marrow.

Indication of any immediate medical attention and special treatment needed**Notes To Physician:**

INHALATION: This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES.

INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small fires, Class B fire extinguishing media such as CO₂, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media

Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical

This product has been determined to be a flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the Emergency Response Guidebook 128.

Hazardous combustion products

Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact No.
Sensitivity to Static Discharge Yes.

Special protective equipment and precautions for firefighters

Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

Additional firefighting tactics

FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

EVACUATION: Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.

NFPA Health 1 Flammability 2 Instability 0 Special Hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. All contaminated surfaces will be slippery.
Protective equipment:	Use personal protection measures as recommended in Section 8.
Emergency procedures:	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
Environmental precautions:	Avoid release to the environment. Avoid subsoil penetration.
Methods and materials for containment:	Contain liquid with sand or soil. Prevent spilled material from entering storm drains, sewers, and open waterways.
Methods and materials for cleaning up:	Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions: NEVER SIPHON THIS PRODUCT BY MOUTH. Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Vapors may travel along the ground or be moved by ventilation. Flashback may occur along vapor trails. No smoking. Use only non-sparking tools. Avoid breathing fumes, gas, or vapors. Use only with adequate ventilation. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.

Hydrocarbons are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering, pumping at high flow rates or loading and transfer operations. If this charge reaches a sufficiently high level, sparks can form that may ignite

the vapors of flammable liquids. Sudden release of hot organic chemical vapors or mists from process equipment operating under elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignition of vapors or mists without the presence of obvious ignition sources. Nozzle spouts must be kept in contact with the containers or tank during the entire filling operation.

Portable containers should never be filled while in or on a motor vehicle or marine craft. Containers should be placed on the ground. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers.

A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling.

Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES (See First Aid Section 4).

Storage Conditions:

Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not store near an open flame, heat or other sources of ignition.

Incompatible Materials

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELs:	OSHA - Vacated PELs	NIOSH IDLH
No. 2 Diesel Fuel 68476-34-6	100 mg/m ³ TWA Skin - potential significant contribution to overall exposure by the cutaneous route	-	-	-
Kerosine (petroleum) 8008-20-6	200 mg/m ³ TWA Skin - potential significant contribution to overall exposure by the cutaneous route	-	-	-
Alkanes, C10-C20 branched and linear 928771-01-1	-	-	-	-
Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm TWA: 50 mg/m ³	10 ppm TWA 50 mg/m ³ TWA 15 ppm STEL 75 mg/m ³ STEL	250 ppm

Notes:

The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures:

Local or general exhaust required in an enclosed area or with inadequate ventilation. Use

mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection:	Use goggles or face-shield if the potential for splashing exists.
Skin and body protection:	Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.
Respiratory protection:	Use a NIOSH approved organic vapor chemical cartridge or supplied air respirators when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Yellow to Red Liquid
Color	Yellow to Red
Odor	Hydrocarbon
Odor Threshold	No data available.

<u>Property</u>	<u>Values (Method)</u>
Melting Point / Freezing Point	No data available.
Initial Boiling Point / Boiling Range	154-366 °C / 310-691 °F (ASTM D86)
Flash Point	58-76 °C / 136-168 °F (ASTM D93)
Evaporation Rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%):	
Upper Flammability Limit:	No data available.
Lower Flammability Limit:	No data available.
Explosion limits:	No data available.
Vapor Pressure	No data available.
Vapor Density	No data available.
Specific Gravity / Relative Density	0.82-0.86
Water Solubility	No data available.
Solubility in other solvents	No data available.
Partition Coefficient	No data available.
Decomposition temperature	No data available.
pH:	Not applicable
Autoignition Temperature	No data available.
Kinematic Viscosity	1.90-3.32 cSt @ 40°C (ASTM D445)
Dynamic Viscosity	No data available.
Explosive Properties	No data available.
VOC Content (%)	No data available.
Density	No data available.
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	The product is non-reactive under normal conditions.
<u>Chemical stability</u>	The material is stable at 70°F (21°C), 760 mmHg pressure.

Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Will not occur.
Conditions to avoid	Excessive heat, sources of ignition, open flame.
Incompatible Materials	Strong oxidizing agents.
Hazardous decomposition products	None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation	Harmful if inhaled. May cause irritation of respiratory tract. May cause drowsiness or dizziness. Breathing high concentrations of this material in a confined space or by intentional abuse can cause irregular heartbeats which can cause death.
Eye contact	Exposure to vapor or contact with liquid may cause mild eye irritation, including tearing, stinging, and redness.
Skin contact	Irritating to skin. Effects may become more serious with repeated or prolonged contact. May be absorbed through the skin in harmful amounts.
Ingestion	May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
No. 2 Diesel Fuel 68476-34-6	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	>1 - <5 mg/L (Rat) 4 h
Kerosine (petroleum) 8008-20-6	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.28 mg/L (Rat) 4 h
Alkanes, C10-C20 branched and linear 928771-01-1	-	-	>1 - <5 mg/l (Rat) 4 h
Naphthalene 91-20-3	490 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 340 mg/m ³ (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

MIDDLE DISTILLATES, PETROLEUM: Long-term repeated (lifetime) skin exposure to similar materials has been reported to result in an increase in skin tumors in laboratory rodents. The relevance of these findings to humans is not clear at this time. Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

MIDDLE DISTILLATES WITH CRACKED STOCKS: Light cracked distillates have been shown to be carcinogenic in animal tests and have tested positive with in vitro genotoxicity tests. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

DIESEL EXHAUST: The combustion of diesel fuels produces gases including carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur, and hydrocarbons that can be irritating and hazardous with overexposure. Long-term occupational overexposure to diesel exhaust and diesel exhaust particulate matter has been associated with an increased risk of respiratory disease, including lung cancer, and is characterized as a "known human carcinogen" by the International Agency for Research on Cancer (IARC), as "a reasonably anticipated human carcinogen" by the National Toxicology Program, and as "likely to be carcinogenic to humans" by the EPA, based upon animal and occupational exposure studies. However, uncertainty exists with these classifications because of deficiencies in the supporting occupational exposure/epidemiology studies, including reliable exposure estimates. Lifetime animal inhalation studies with pulmonary overloading exposure concentrations of diesel exhaust emissions have produced tumors and other adverse health effects. However, in more recent long-term animal inhalation studies of diesel exhaust emissions, no increase in tumor incidence and in fact a substantial reduction in adverse health effects along with significant reductions in the levels of hazardous material emissions were observed and are associated with fuel composition alterations coupled with new technology diesel engines.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms	Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking. Prolonged or repeated exposure may cause damage to organs.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	None known.
Sensitization	None known.
Mutagenic effects	None known.
Carcinogenicity	Suspected of causing cancer.

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
No. 2 Diesel Fuel 68476-34-6	Confirmed animal carcinogen (A3)	Not Classifiable (3)	Not Listed	Not Listed
Kerosine (petroleum) 8008-20-6	Confirmed animal carcinogen (A3)	Not Classifiable (3)	Not Listed	Not Listed
Alkanes, C10-C20 branched and linear	Not Listed	Not Listed	Not Listed	Not Listed

928771-01-1				
Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed

Reproductive toxicity	None known.
Specific Target Organ Toxicity (STOT) - single exposure	Respiratory system. Central nervous system.
Specific Target Organ Toxicity (STOT) - repeated exposure	Thymus. Liver. Bone marrow.
Aspiration hazard	May be fatal if swallowed or vomited and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
No. 2 Diesel Fuel 68476-34-6	-	96-hr LC50 = 35 mg/l Fathead minnow (flow-through)	-	48-hr EL50 = 6.4 mg/l Daphnia magna
Kerosine (petroleum) 8008-20-6	72-hr EL50 = 5.0-11 mg/l Algae	96-hr LL50 = 18-25 mg/l Fish	-	48-hr EL50 = 1.4-21 mg/l Invertebrates
Alkanes, C10-C20 branched and linear 928771-01-1	-	-	-	-
Naphthalene 91-20-3	-	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	-	48-hr LC50 = 1.6 mg/l Daphnia magna

<u>Persistence and degradability</u>	Expected to be inherently biodegradable.
<u>Bioaccumulation</u>	Has the potential to bioaccumulate.
<u>Mobility in soil</u>	May partition into air, soil and water.
<u>Other adverse effects</u>	No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues

This material may be a flammable liquid waste.

Safe Handling of Wastes

Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal

Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper Shipping Name: Fuel Oil, No. 2
UN/Identification No: NA 1993
Class: 3
Packing Group: III

TDG (Canada):

UN Proper Shipping Name: Diesel Fuel
UN/Identification No: UN 1202
Transport Hazard Class(es): 3
Packing Group: III

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
No. 2 Diesel Fuel	NA
Kerosine (petroleum)	NA
Alkanes, C10-C20 branched and linear	NA
Naphthalene	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
No. 2 Diesel Fuel	NA
Kerosine (petroleum)	NA
Alkanes, C10-C20 branched and linear	NA
Naphthalene	100 lb final RQ 45.4 kg final RQ

SARA Section 311/312: The following EPA hazard categories apply to this product:

Acute Health Hazard
 Fire Hazard
 Chronic Health Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
No. 2 Diesel Fuel	None
Kerosine (petroleum)	None
Alkanes, C10-C20 branched and linear	None
Naphthalene	0.1 % de minimis concentration

State and Community Right-To-Know Regulations:

The following component(s) of this material are identified on the regulatory lists below:

No. 2 Diesel Fuel	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 2444
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To-Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	SN 2444 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Kerosine (petroleum)	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1091
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To-Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	SN 1091 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Alkanes, C10-C20 branched and linear	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To-Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
Naphthalene	
Louisiana Right-To-Know:	Not Listed

California Proposition 65:	Carcinogen, initial date 4/19/02
New Jersey Right-To-Know:	SN 1322 SN 3758
Pennsylvania Right-To-Know:	Environmental hazard Present (particulate)
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen
New Jersey - Environmental Hazardous Substances List:	SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	100 lb RQ (air); 1 lb RQ (land/water)

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
No. 2 Diesel Fuel	B3,D2A,D2B	0.1%
Kerosine (petroleum)	B3,D2B	1%
Alkanes, C10-C20 branched and linear	B3,D2A,D2B	0.1%
Naphthalene	B4,D2A	0.1%



Note: Not applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety

Issue Date 10/31/2016

Revision Notes

Revision Date 06/01/2016

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Ingersoll Rand→Ultra EL™ Synthetic Rotary Coolant

Revision date : 2014/01/13

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(30561549/SDS GEN US/EN)

1. Identification

Product identifier used on the label

Ingersoll Rand® Ultra EL™ Synthetic Rotary Coolant

Recommended use of the chemical and restriction on use

Recommended use: lubricants additives

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of Ingersoll Rand's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in BASF's Sales Agreement.

Details of the supplier of the safety data sheet

Company:

Distributed by
Ingersoll Rand
800D Beatty St.
Davidson, NC 28036, USA

Telephone: +01 704-655-4000

Emergency telephone number

U.S. 24-hour Emergency #: 800-424-9300
Outside the U.S. Emergency #: +01 703-527-3887

Other means of identification

Synonyms: Not available. Use: Coolant

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Classification of the product

No need for classification according to GHS criteria for this product.

Label elements (Emergency overview)

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Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Emergency overview

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Repeated exposure may cause skin dryness or cracking.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

This product is not regarded as hazardous under 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

This product is not regarded as hazardous under current OSHA Hazard Communication standard; CFR 29 Part 1910.1200.

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:

Wash thoroughly with soap and water.

If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If irritation develops, seek medical attention.

If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

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Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Keep people away and stay on the upwind side. Breathing protection required.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

No special measures necessary provided product is used correctly. Handle in accordance with good industrial hygiene and safety practice.

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Protection against fire and explosion:
No special precautions necessary.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

Protect from temperatures below: -10 °C
Protect from temperatures above: 40 °C

8. Exposure Controls/Personal Protection

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection:

Chemical resistant protective gloves

Eye protection:

Safety glasses with side-shields.

General safety and hygiene measures:

Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	mild	
Odour threshold:	No data available.	
Colour:	yellow to brownish	
pH value:	7	(measured with the undiluted substance)
Melting point:		not determined
boiling temperature:	> 250 °C	(1,013 hPa)
Flash point:	270 °C	(ASTM D92)
Flammability:	not flammable	
Lower explosion limit:		For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:		For liquids not relevant for classification and labelling.
Autoignition:		not determined
Vapour pressure:		No applicable information available.
Density:	0.9828 g/cm ³	(15 °C) (ISO 2811-3)
Partitioning coefficient n-octanol/water (log Pow):		Study scientifically not justified.
Self-ignition temperature:	> 300 °C	(DIN 51794)
Thermal decomposition:	No decomposition if correctly stored and handled.	
Viscosity, kinematic:	48 mm ² /s	(40 °C) (ASTM D445)

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Solubility in water: sparingly soluble
Solubility (qualitative): soluble
solvent(s): organic solvents,
Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

Additional information:
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:
No corrosive effect on metal.

Oxidizing properties:
not fire-propagating

Reactions with water/air:	Reaction with:	water
	Flammable gases:	no
	Toxic gases:	no
	Corrosive gases:	no
	Smoke or fog:	no
	Peroxides:	no
	Reaction with:	air
	Flammable gases:	no
	Toxic gases:	no
	Corrosive gases:	no
	Smoke or fog:	no
	Peroxides:	no

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Peroxides: 0.000 %
The product does not contain peroxides.

Possibility of hazardous reactions

Hazardous reactions:
No hazardous reactions when stored and handled according to instructions.
The product is chemically stable.

Conditions to avoid

Conditions to avoid:
Avoid extreme temperatures.

Incompatible materials

Substances to avoid:
strong oxidizing agents, strong bases, strong acids

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Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if correctly stored and handled.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Oral

Type of value: LD50

Species: rat

Value: > 5,000 mg/kg

Irritation / corrosion

Assessment of irritating effects:

Not irritating to eyes and skin.

Sensitization

Assessment of sensitization:

A sensitizing effect on particularly sensitive individuals cannot be excluded.

Chronic Toxicity/Effects

Genetic toxicity

Assessment of mutagenicity: Based on the ingredients, there is no suspicion of a mutagenic effect.

Carcinogenicity

Assessment of carcinogenicity: The whole of the information assessable provides no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity: Based on the ingredients, there is no suspicion of a toxic effect on reproduction.

Teratogenicity

Assessment of teratogenicity: No teratogenic effects reported.

Other Information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

Symptoms of Exposure

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The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
Further important symptoms and effects are so far not known.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential

Discharge into the environment must be avoided.

Mobility in soil

Assessment transport between environmental compartments

No data available.

Additional information

Add. remarks environm. fate & pathway:
At the present state of knowledge, no negative ecological effects are expected.

Other ecotoxicological advice:
The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater.
It is the waste generator's responsibility to determine if a particular waste is hazardous under RCRA.

Container disposal:

Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.
Dispose of in accordance with national, state and local regulations.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

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(30561549/SDS_GEN_US/EN)**Sea transport**
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations**Registration status:**

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Not hazardous;

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
1000 LBS	25619-56-1	Naphthalenesulfonic acid, dinonyl-, barium salt (2:1)
100 LBS	75-56-9	Propylene oxide

State regulations**CA Prop. 65:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

NFPA Hazard codes:

Health : 0 Fire: 1 Reactivity: 0 Special:

HMIS III rating

Health: 0 Flammability: 1 Physical hazard: 0 (Essentially no hazard)

16. Other Information

SDS Prepared by:BASF NA Product Regulations
SDS Prepared on: 2014/01/13

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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END OF DATA SHEET

UNO S F

Section 1. Identification

GHS product identifier : UNO S F
Product code : 53-G 023 (500ml), 53-G 016 (5L), 53-G 017 (20L), 53-G 018 (208L)
SDS no. : L-48E
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : High strength alkaline cleaner and degreaser, foamless formulation.

Manufacturer

: Walter Surface Technologies Inc.
Bio-Circle - A Division of Walter Surface Technologies Inc.
810 Day Hill Road
Windsor, CT 06095
United States
General Information: 1-866-592-5837
info.us@walter.com
www.walter.com

Emergency telephone number (with hours of operation)

: INFOTRAC® 1-800-535-5053. International call collect: 1-352-323-3500
24 hours/day, 7 days/week.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

: SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :



Signal word :

Warning

Hazard statements

: H319 - Causes serious eye irritation.
H315 - Causes skin irritation.

Precautionary statements

Prevention

: P280 - Wear protective gloves. Wear eye or face protection.
P264 - Wash hands thoroughly after handling.

Response

: P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage

: Not applicable.



Section 2. Hazards identification

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product code : 53-G 023 (500ml), 53-G 016 (5L), 53-G 017 (20L), 53-G 018 (208L)

Ingredient name	%	CAS number
Sodium cumenesulphonate	≥1 - ≤3	28348-53-0
Sodium metasilicate pentahydrate	≥1 - ≤3	10213-79-3

The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

: Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms



Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical

- : No specific fire or explosion hazard.

Hazardous thermal decomposition products

- : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides

Special protective actions for fire-fighters

- : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

- : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Sodium cumenesulphonate	None.
Sodium metasilicate pentahydrate	None.

Appropriate engineering controls

: No personal respiratory protective equipment normally required. Avoid breathing dust/fume/gas/mist/vapors/spray. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures



Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a NIOSH/MSHA approved respirator if there is a risk of exposure at levels exceeding the exposure limits. Advice should be sought from respiratory protection specialists.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Pink. [Light]
- Odor** : Faint.
- Odor threshold** : Not available.
- pH** : 12.5
- Melting point** : 0°C (32°F)
- Boiling point** : 98°C (208.4°F)
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.04 g/ml @ 20°C (68°F)
- Solubility** : Soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

Section 9. Physical and chemical properties

Flow time (ISO 2431) : Not available.

VOC content : 0 % (w/w)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Sodium metasilicate pentahydrate	LD50 Oral	Rat	847 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Target organs
Sodium cumensulphonate Sodium metasilicate pentahydrate	Category 3 Category 3	Respiratory tract irritation Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Section 11. Toxicological information

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	35243.9 mg/kg

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
UNO S F	-	>95%; 28 to 100 day(s)	Readily

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Public

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

AERG : Not applicable.

Section 14. Transport information

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. Protect from freezing. Freezing will damage product and render it unusable.

Section 15. Regulatory information

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: Benzene; Toluene; Ethylbenzene

Clean Water Act (CWA) 311: Benzene; Toluene; Ethylbenzene; Potassium hydroxide

Clean Air Act Section 112 : Listed

(b) Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 : Not listed

Class I Substances

Clean Air Act Section 602 : Not listed

Class II Substances

DEA List I Chemicals : Not listed

(Precursor Chemicals)

DEA List II Chemicals : Not listed

(Essential Chemicals)

[SARA 302/304](#)

[Composition/information on ingredients](#)

Name	EHS	SARA 302 TPO		SARA 304 RQ	
		(lbs)	(gallons)	(lbs)	(gallons)
Ethylene oxide	Yes.	1000	-	10	-

[SARA 304 RQ](#) : 31746031.7 lbs / 14412698.4 kg [3660992.4 gal / 13858363.9 L]

[SARA 311/312](#)

Classification

: SKIN CORROSION/IRRITATION - Category 2
 : SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

[Composition/information on ingredients](#)

Name	Classification
Sodium cumenesulphonate	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Sodium metasilicate pentahydrate	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

[SARA 313](#)

There is no data available.

[State regulations](#)

Massachusetts

: None of the components are listed.

New York

: None of the components are listed.

Section 15. Regulatory information

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Benzene, Ethylene oxide, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Ethylbenzene, Cumene, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International lists

National inventory

Canada : All components are listed or exempted.

Europe : At least one component is not listed.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment Expert judgment

History

Date of issue mm/dd/yyyy : 07/30/2018

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