ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Office of Oil and Gas Resource Management
One Natural Resources Way Springfield, Illinois 62702-1271

HIGH VOLUME HORIZONTAL HYDRAULIC FRACTURING PERMIT APPLICATION HVHHF-10

References to "1-xx" or "§1-xx" are to the Hydraulic Fracturing Regulatory Act., 225 ILCS 732/1-1 et seq. References to "240.xxx" and "245.xxx" are to 62 Ill. Admin. Code 240 and 245, respectively.

Attachment: ChemicalDisclosureReport

Please save attachment and use the file name above.

Chemical Disclosure Report §1-35(b)(8); 245.210(a)(8), 245.700, 245.720.

(a) Do you have on file with the Department a master list of chemicals, as required in §1-77 of the Act? ☐ YES ☑ NO If "NO" please attach a master list as "Attachment C(6)(a)." If you are claiming any trade secret under §§245.700, 245.720, you must attach redacted and un-redacted copies of the documents identifying the specific information on the master list of chemicals claimed to be protected as trade secrets. Also, if making a claim of trade secret please provide the Department with a telephone number and e-mail where the trade secret holder may be reached at any time (24 hours/day, 7 days/week).

(b) Please list each chemical and proppant anticipated to be used in hydraulic fracturing fluid for each stage of the high volume horizontal hydraulic fracturing operation:

(c) If using water in the high volume horizontal hydraulic fracturing treatment of the well, state the total volume of water anticipated to be used for each stage of the fracturing treatment. If using something other than water, state the type and total volume of base fluid anticipated to be used in the treatment. If the total volume is currently unknown, estimate the maximum volume anticipated to be used.

(d) Please identify each hydraulic fracturing additive you anticipate using, including:

1. Trade name
2. Vendor
3. Brief descriptor of the planned use or function of each additive
4. Attach a copy of the Material Safety Data Sheet (MSDS) if applicable.
   NOTE: if this information is unavailable, then list the chemical family and chemical effects of each. If the additives have not been determined at time of application, submit all possible additives that might be used. You may use the table below or provide your own.

TRADE NAME	VENDOR	PLANNED USE/FUNCTION
Hydrochloric Acid	Oxy - Chem	Acidize Formation
Cronox AK-50	Baker Hughes	Corrosion Inhibitor
NE-6 Surfactant	Chemplex	Surfactant
Plexgel Breaker XPA	Chemplex	Slickwater Gel Breaker
Plexslick 957 FR-7	Chemplex	Friction Reducer
Claymax	Chemplex	Clay Control
Ferriplex 66	Chemplex	Iron Control

(e) Please identify each chemical anticipated to be intentionally added to the base fluid, the anticipated concentration in the base fluid (in percent by mass) of each chemical, and the Chemical Abstracts Service number. If CAS is not available, then list the chemical family and effects of each chemical. If the chemicals to be used have not been determined at the time of filing of this application, identify all possible chemicals that may be used. You may use the table below or provide your own.

CHEMICAL NAME	CONCENTRATION [__/__]	CHEMICAL ABSTRACTS SERVICE NUMBER (or chemical family and effects)

NOTE: if the contents of the fluid are adjusted or altered during the treatment process, the Department MUST be notified within 24 hours of departure from the initial treatment design and include an explanation detailing the reason for the departure from the original formulation.
NOTE: no less than 21 days before performing the FIRST stimulation treatment, maintain and disclose to the Department separate and up-to-date master lists of:

1) the base fluid to be used during any high volume horizontal hydraulic fracturing operations,
2) all hydraulic fracturing additives to be used during any high volume horizontal hydraulic fracturing operations, and
3) all chemicals and associated Chemical Abstract Service numbers to be used in any high volume horizontal hydraulic fracturing operations.

(f) Please provide the name, telephone number and address of an employee, agent or contractor of the permittee having knowledge of the specific chemicals being used in the HVHHF operation at any given time.

WOOLSEY OPERATING COMPANY, LLC
125 NORTH MARKET, SUITE 1000, WICHITA, KANSAS 67202-1775
(316) -267-4379 FAX (316) 267-4383

Woolsey Operating Company, LLC
Woodrow #1H-310408-193
White County, Illinois
High Volume Horizontal Hydraulic Fracturing Permit Application
HVHHF-10: Chemical Disclosure Report

a) No
b) See Attached Schedule
c) 175,000 gal. per stage
d) See Attached Schedule
e) See Attached Schedule
f) Kevin Gordley
Area Manager, Basic Energy services, LP
10244 NE State Road 61, Pratt, KS
620-770-2191

WOOLSEY OPERATING COMPANY, LLC
125 NORTH MARKET, SUITE 1000, WICHITA, KANSAS 67202-1775
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The Chemical Disclosure Report does not contain any trade secrets and therefore no redacted versions will be submitted.

WOOLSEY OPERATING COMPANY, LLC

125 North Market, Suite 1000, Wichita, Kansas 67202-1775
(316) -267-4379 fax (316) 267-4383

HIGH VOLUME HORIZONTAL HYDRAULIC FRACTURING PERMIT APPLICATION
CHEMICAL DISCLOSURE REPORT - PART b
CHECMICAL AND PROPPANT LIST EACH STAGE
WOODROW 1H-310408-193

Trade Name	Vendor	Purpose	Ingredient	Chemical Abstract Service Number (CAS #)	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)
Water	Groundwater	Carrier/Base Fluid	Water	7732-18-5	1,459,500.00	91.87158%
Sand (Proppant)	To be determined	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	128,256.44	8.07340%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Oxyalkylated alkylphenol	68891-11-2	1.75	0.00011%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Heavy aromatic naphtha	64742-94-5	1.75	0.00011%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Isopropanol	67-63-0	1.75	0.00011%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Fatty acids	61790-12-3	1.17	0.00007%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Complex alkylaryl polyo-ester	68188-40-9	1.17	0.00007%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	1.17	0.00007%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Formaldehyde	50-00-0	1.17	0.00007%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Acetylenic alcohol	5877-42-9	0.00	0.00001%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Propargyl Alcohol	107-19-7	0.00	0.00001%
Cronox AK-50 CIA-I	Baker Hughes	Acid Inhibitor	Naphthalene	91-20-3	0.00	0.00001%
Plexslick 957	Chemplex	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	155.07	0.00976%
Plexgel Breaker XPA	Chemplex	Slickwater Gel Breaker	Hydrogen Peroxide	7722-87-1	13.99	0.00088%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	Light aromatic naphta	64745-95-6	103.77	0.00653%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	1,2,4 - Trimethylbenzene	95-63-6	34.40	0.00217%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	1,2,3 - Trimethylbenzene	526-73-8	3.50	0.00022%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	1,3,5 - Trimethylbenzene	108-67-8	17.49	0.00110%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	Xylene	1330-20-7	3.50	0.00022%
NE-6 Arbreak 8792 demulsifier	Chemplex	Non-emulsifier/Surfactant	2-Ethylhexanol	104-76-7	17.49	0.00110%
Claymax	Chemplex	Clay Control	Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	78.12	0.00492%
Claymax	Chemplex	Clay Control	Water	7732-18-5	56.55	0.00356%
Ferriplex 66	Chemplex	Iron Control	Acetic Acid	64-19-7	11.66	0.00073%
Ferriplex 66	Chemplex	Iron Control	Citirc Acid	77-92-9	11.66	0.00073%
Hydrochloric Acid	Oxy - Chem	Acidize Formation	Hydrogen Chloride	7647-01-0	356.79	0.02246%

SAFETY DATA SHEET

M34514 NA_EN

Occidental Chemical Corporation

A subsidiary of Occidental Petroleum Corporation

Responsible Care®

HYDROCHLORIC ACID (HCl) (ALL GRADES)

MSDS No.: M34514 **Rev. Date:** 09-Aug-2012 **Rev. Num.** 06

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (U.S.); CHEMTREC (U.S.): 1-800-424-9300; CHEMTREC (outside U.S.): +1 703-527-3887
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Trade Name:	Hydrochloric Acid (HCl) aqueous all grades
Synonyms:	Muriatic Acid, HCl Solution, Aqueous hydrogen chloride
Product Use:	Process chemical, Metal cleaning, Water purification, Petroleum Industry

2. HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW:

Color:	Colorless
Physical State:	Liquid
Appearance:	Clear
Odor:	Irritating, Pungent, Sharp
Signal Word:	**Danger**

MAJOR HEALTH HAZARDS: CAUSES BURNS TO THE RESPIRATORY TRACT, SKIN AND EYES. CAUSES PERMANENT EYE DAMAGE. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

PHYSICAL HAZARDS: May spatter or generate heat when mixed with water. Contact with metals may evolve flammable hydrogen gas.

PRECAUTIONARY STATEMENTS: Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wash thoroughly after handling. Use only with adequate ventilation.

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POTENTIAL HEALTH EFFECTS:

Inhalation: May cause irritation (possibly severe), chemical burns, and pulmonary edema.

Skin contact: May cause irritation (possibly severe) and chemical burns.

Eye contact: May cause irritation (possibly severe), chemical burns, eye damage, and blindness.

Ingestion: Not a likely route of exposure.

Chronic Effects: Repeated or prolonged exposure to dilute solutions may result in dermatitis. Discoloration of the teeth may occur as a result of long term exposure.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: None known.

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Component	%	CAS Number
Hydrogen chloride	9 - 36	7647-01-0
Water	63 - 91	7732-18-5

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer basic life support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Not a likely route of exposure.

5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard.

Extinguishing Media: Use media appropriate for surrounding fire.

Fire Fighting: Keep unnecessary people away, isolate hazard area and deny entry. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Move container from fire area if it can be done without risk. Cool non-leaking containers with water. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Flash point: Not flammable

Hazardous Combustion Products: Hydrogen chloride, Chlorine, Hydrogen gas

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Remove sources of ignition. Wear appropriate personal protective equipment recommended in Section 8 of the SDS. Stop leak if possible without personal risk. Consider evacuation of personnel located downwind if material is leaking. Shut off ventilation system if needed. Completely contain spilled material with dikes, sandbags, etc. Neutralize with soda ash or dilute caustic soda. Collect with appropriate absorbent and place into suitable container. Liquid material may be removed with a properly rated vacuum truck. Keep out of water supplies and sewers. This material is acidic and may lower the pH of the surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

7. HANDLING AND STORAGE

Storage Conditions: Store and handle in accordance with all current regulations and standards. Store in rubber-lined steel, acid-resistant plastic or glass containers. Keep container tightly closed. Store in a cool, dry area. Store in a well-ventilated area. Keep away from heat, sparks and open flames. Keep separated from incompatible substances (see Section 10 of SDS). Do not store in aluminum container or use aluminum fittings or transfer lines. Protect from physical damage. Dike and vent storage tanks.

Handling Procedures: Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and spattering.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): As listed below

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Hydrogen chloride 7647-01-0	-----	----------	5 ppm 7 mg/m^3

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

Non-Regulatory Exposure Limit(s): As listed below

Component	CAS Number	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Hydrogen chloride	7647-01-0	-----	-------	2 ppm	-------	-------	5 ppm 7 mg/m^3

- **The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.**

ENGINEERING CONTROLS: Use closed systems when possible. Provide local exhaust ventilation where vapor or mist may be generated. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Always place pants legs over boots.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Nitrile, Neoprene, Butyl rubber, Polyvinyl chloride (PVC), Responder®, Trellchem® HPS, Tychem®

Component	Immediately Dangerous to Life/ Health (IDLH)
Hydrogen chloride	50 ppm IDLH

Respiratory Protection: A NIOSH approved full-face respirator equipped with acid gas cartridges (appropriate for hydrogen chloride) may be permissible when symptoms have been observed that are indicative of overexposure. When the level may be above the IDLH, use an SCBA or pressure-demand supplied air with an auxilliary self-contained escape pack. Pressure-demand SCBA (self-contained breathng apparatus) must be used when there is a potential for uncontrolled release or unknown concentrations. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear
Color:	Colorless
Odor:	Irritating, Pungent, Sharp
Odor Threshold:	0.3 ppm (causes olfactory fatigue)
Molecular Weight:	36.46
Molecular Formula:	HCl
Boiling Point/Range:	140 - 221°F (60 - 105 °C)
Freezing Point/Range:	-29 to 5 °F (-34 to -15 °C)
Vapor Pressure:	14.6 - 80 mmHg @ 20 °C
Vapor Density (air=1):	1.3 @ 20 °C
Specific Gravity (water=1):	1.05 - 1.18
Density:	8.75 - 9.83 lbs/gal
Water Solubility:	100%
pH:	2 @ (0.2% solution)
Volatility:	9 - 36% by volume
Evaporation Rate (ether=1):	< 1.00 (butyl acetate = 1)
Flash point:	Not flammable

10. STABILITY AND REACTIVITY

Reactivity/ Stability: Stable at normal temperatures and pressures.

Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with water. Will react with some metals forming flammable hydrogen gas. Hydrogen chloride may react with cyanide, forming lethal concentrations of hydrocyanic acid. Avoid contact with incompatible materials.

Incompatibilities/ Materials to Avoid: Metals, Alkalis, Oxidizing agents, Mercuric sulfate, Perchloric acid, Carbides of calcium, cesium, rubidium, Acetylides of cesium and rubidium, Phosphides of calcium and uranium, Lithium silicide

Hazardous Decomposition Products: chlorine, hydrogen chloride, hydrogen gas

Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA: As listed below

Standard Draize (Eye):	rabbit-eye mild
Standard Draize (Skin):	human-skin mild

TOXICITY DATA:

Component	LD50 Oral:	LC50 Inhalation:	LD50 Dermal:
Hydrogen chloride	700 mg/kg (Rat)	3124 ppm (1 hr-Rat)	5010 mg/kg (Rabbit)
Water	900 mg/kg (Rabbit)	1108 ppm (1hr-Rat)	

TOXICITY:
Inhalation will cause severe irritation and possible burns with coughing and choking. If inhaled deeply, edema and hemorrhage of the lungs may occur. Prolonged exposure may cause discoloration and/or erosion of teeth. Contact with eyes causes immediate severe irritation with possible burns, permanent visual impairment, or total loss of sight. Skin contact with this material may cause severe irritation and corrosion of tissue. Ingestion may cause immediate burns of the mouth, esophagus, and stomach. Ingestion may cause intense pain, nausea, vomiting, bleeding, circulating collapse, shock, and death.

CARCINOGENICITY: This product is not classified as a carcinogen by NTP, IARC or OSHA.

12 ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

- **Aquatic Toxicity:**
  LC50 Gambusia affinis: 282 mg/L 96 hr.
- **Fish Toxicity:**
  LC50 Goldfish: 178 mg/L (1 to 2 hour survival time)
- **Freshwater Fish Toxicity:**
  LC50 Bluegill: 3.6 mg/L 48 hr
- **Invertebrate Toxicity:**
  LC50 Shrimp: 100 - 330 mg/L

FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is believed not to persist in the environment. This material is believed to exist in the disassociated state in the environment. If released to soil, hydrogen chloride will sink into the soil. The acid will dissolve some soil material (in particular, anything with a carbonate base) and will be somewhat neutralized. The remaining portion is thought to transport downward to the water table. If released to water, it dissociates almost completely and will be neutralized by natural alkalinity and carbon dioxide.

BIOCONCENTRATION: This material is not expected to bioconcentrate in organisms.

ADDITIONAL ECOLOGICAL INFORMATION: This material has exhibited toxicity to terrestrial organisms. May decrease pH of waterways and adversely affect aquatic life.

13. DISPOSAL CONSIDERATIONS

Reuse or reprocess, if possible. All disposals of this material must be done in accordance with local, state and federal regulations. Dispose in accordance with all applicable regulations. May be subject to disposal regulations: U.S. EPA 40 CFR 261.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

UN NUMBER:	UN1789
PROPER SHIPPING NAME:	Hydrochloric acid solution
HAZARD CLASS/ DIVISION:	8
PACKING GROUP:	II
LABELING REQUIREMENTS:	8
RQ (lbs):	RQ 5,000 Lbs. (Hydrochloric acid)

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER:	UN1789
SHIPPING NAME:	Hydrochloric acid solution
CLASS OR DIVISION:	8
PACKING/RISK GROUP:	II

15. REGULATORY INFORMATION

U.S. REGULATIONS

- **OSHA REGULATORY STATUS:**
  This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

- **CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):** If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	CERCLA Reportable Quantities:
Hydrogen chloride	5000 lb (final RQ)

- **EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):**
  If a release is reportable under EPCRA, notify the state emergency response commission and local emergency planning committee. If the TPQ is met, facilities are subject to reporting requirements under EPCRA Sections 311 and 312.

Component	EPCRA RQs	Threshold Planning Quantity (TPQs)
Hydrogen chloride	5000 lb (EPCRA RQ)	500 lb (TPQ) gas only

- **EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):**
  Acute Health Hazard, Reactive Hazard

- **EPCRA SECTION 313 (40 CFR 372.65):**
  The following chemicals are listed in 40 CFR 372.65 and may be subject to Community Right-to Know Reporting requirements.

Component	Status:
Hydrogen chloride	Listed – Aerosol form only

- **OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):** Not regulated

NATIONAL INVENTORY STATUS

- **U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):** All components are listed or exempt
- **TSCA 12(b):** This product is not subject to export notification
- **Canadian Chemical Inventory:** All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65:
This product is not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.

Hydrogen chloride	
California Proposition 65 Cancer WARNING:	Not Listed
California Proposition 65 CRT List - Male reproductive toxin:	Not Listed
California Proposition 65 CRT List - Female reproductive toxin:	Not Listed
Massachusetts Right to Know Hazardous Substance List	Listed
New Jersey Right to Know Hazardous Substance List	sn 1012; sn 2909 (gas only)
New Jersey Special Health Hazards Substance List	corrosive
New Jersey - Environmental Hazardous Substance List	Listed
Pennsylvania Right to Know Hazardous Substance List	Listed
Pennsylvania Right to Know Special Hazardous Substances	Not Listed
Pennsylvania Right to Know Environmental Hazard List	Listed
Rhode Island Right to Know Hazardous Substance List	Listed

CANADIAN REGULATIONS

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

Canada - CEPA Schedule I: Toxic Substance list	Not Listed
WHMIS - Classifications of Substances:	• E - Corrosive material

16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Disclaimer:
This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health:	3	**Flammability:**	0	**Reactivity:**	1

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)

Health:	3	**Flammability:**	0	**Reactivity:**	1

Reason for Revision:
- Updated 24 Hour Emergency Telephone Number: SEE SECTION 1
- PPE recommendations have been modified: SEE SECTION 8
- Updated Transportation Information: SEE SECTION 14
- Revised California Proposition 65 Statement: SEE SECTION 15
- Revised Preparer Information: SEE SECTION 16
- Added "End of Safety Data Sheet" phrase

IMPORTANT:
The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and OxyChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

End of Safety Data Sheet

SAFETY DATA SHEET

Section 1. Identification

Product identifier : CRONOX™ AK-50 CORROSION INHIBITOR
™ a trademark of Baker Hughes Incorporated.

Product code : CROAK50

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

Identified uses Acid Corrosion Inhibitor.

Uses advised against Not applicable.

Print date : 2/24/2017

Validation date : 2/24/2017

Version : 1

Supplier's details : Baker Hughes Canada Company
5050 47th Street S.E.
Calgary, Alberta, T2B 3S1
Canada
For Product Information: 281-276-5400
(8:00 a.m. - 5:00 p.m. CST, Monday - Friday

Emergency telephone number (with hours of operation) : CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petrolite: 800-231-3606 (North America 24 hour)
CANUTEC: 613-996-6666 (Canada 24 hours)
CHEMTREC Int'l 01-703-527-3887

Section 2. Hazard identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - 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) (kidneys and liver) - Category 2
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2
Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Hazard pictograms :

Section 2. Hazard identification

Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Toxic in contact with skin or if inhaled.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
Prolonged or repeated contact may dry skin and cause irritation.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure. (kidneys, liver)
Toxic to aquatic life with long lasting effects.

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 only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

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 SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it 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.

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

Supplemental label elements : Avoid contact with skin and clothing. Wash thoroughly after handling.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Oxyalkylated alkylphenol	10 - 20	68891-11-2
Heavy aromatic naphtha	10 - 20	64742-94-5
Isopropanol	10 - 20	67-63-0
Fatty acids	5 - 10	61790-12-3
Complex alkylaryl polyo-ester	5 - 10	68188-40-9
Tar bases, quinoline derivs., benzyl chloride-quaternized	5 - 10	72480-70-7
Formaldehyde	5 - 10	50-00-0
Acetylenic alcohol	1 - 5	5877-42-9
Propargyl alcohol	1 - 5	107-19-7
Naphthalene	1 - 5	91-20-3

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. Continue to rinse for at least 15 minutes. Check for and remove any contact lenses. 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. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. 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 skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 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 : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. 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. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : Toxic in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : pain or irritation,watering,redness

Inhalation : respiratory tract irritation,coughing,nausea or vomiting,headache,drowsiness/fatigue, dizziness/vertigo,unconsciousness

Skin contact : irritation,redness,dryness,cracking

Ingestion : No specific data.

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

Notes to physician : 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.

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, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. 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. Runoff to sewer may create fire or explosion hazard. 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 : carbon dioxide,carbon monoxide,nitrogen oxides,sulfur oxides,halogenated compounds

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. 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. 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.

Section 6. Accidental release measures

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. 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 ingest. 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.

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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Isopropanol	**ACGIH TLV (United States, 4/2014).** STEL: 400 ppm, 0 times per shift, 15 minutes. TWA: 200 ppm, 0 times per shift, 8 hours.
Formaldehyde	**ACGIH TLV (United States, 3/2015). Skin sensitizer. Inhalation sensitizer.** C: 0.3 ppm C: 0.37 mg/m³
Propargyl alcohol	**ACGIH TLV (United States, 3/2015). Absorbed through skin.** TWA: 2.3 mg/m³, 0 times per shift, 8 hours.

Section 8. Exposure controls/personal protection

Naphthalene	TWA: 1 ppm, 0 times per shift, 8 hours. **ACGIH TLV (United States, 3/2015). Absorbed through skin.** TWA: 52 mg/m³, 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours.

Consult local authorities for acceptable exposure limits.

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker 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.

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 : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Hand protection : Chemical-resistant gloves.

Skin protection : Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory protection : If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. 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 : Liquid.

Color : Amber.

Odor : Pungent.

Odor threshold : Not available.

pH : Not available.

Melting/freezing point : Not available.

Boiling point : Not available.

Initial Boiling Point : Not available.

Flash point : Closed cup: 37.8°C (100°F) [SFCC]

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 5 kPa (37.2 mm Hg) @ 37.8°C

Section 9. Physical and chemical properties

Vapor density : >1 [Air = 1]

Relative density : 0.9664 (15.6°C)

Density : 8.05 (lbs/gal)

Solubility in water : Insoluble

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Dynamic (15.6°C): 38 cP

VOC : Not available.

Pour Point : -23.3°C (-9.9°F)

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, acids and alkalis.
Isopropanol is incompatible with acrylaldehyde, aluminum powder, and potassium tert-butoxide.

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
Heavy aromatic naphtha	LC50 Inhalation Vapor	Rat	>11.4 mg/l	6 hours
	LD50 Oral	Rat	3200 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
Isopropanol	LC50 Inhalation Vapor	Rat	>10000 ppm	6 hours
	LD50 Dermal	Rabbit	6.29 g/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Fatty acids	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>10000 mg/kg	-
Formaldehyde	LD50 Dermal	Rabbit	270 mg/kg	-
	LD50 Oral	Rat	640 mg/kg	-
	LD50 Oral	Rat	800 mg/kg	-
Acetylenic alcohol	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	4100 mg/kg	-
Propargyl alcohol	LC50 Inhalation Vapor	Rat	2000 mg/m³	2 hours
	LD50 Oral	Rat	55 mg/kg	-

Section 11. Toxicological information

Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
CRONOX™ AK-50 CORROSION INHIBITOR	LD50 Dermal	Rabbit	630 mg/kg	-
	LD50 Oral	Rat	1400 mg/kg	-

Irritation/Corrosion

No applicable toxicity data

Sensitization

No applicable toxicity data

Mutagenicity

No applicable toxicity data

Carcinogenicity

Product/ingredient name	OSHA	IARC	NTP
Isopropanol	-	3	-
Formaldehyde	+	1	Known to be a human carcinogen.
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

No applicable toxicity data

Teratogenicity

No applicable toxicity data

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Heavy aromatic naphtha	Category 3	Not applicable.	Narcotic effects
Isopropanol	Category 3	Not applicable.	Narcotic effects
Formaldehyde	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Propargyl alcohol	Category 2	Inhalation	kidneys and liver

Aspiration hazard

Name	Result
Heavy aromatic naphtha	ASPIRATION HAZARD - Category 1

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

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.

Potential chronic health effects

Section 11. Toxicological information

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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

Mutagenicity : Suspected of causing genetic defects.

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
Inhalation (vapors)	8.145 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Isopropanol	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1400000 µg/l	Fish - Gambusia affinis	96 hours
Formaldehyde	Acute EC50 0.788 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 12.98 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute EC50 14000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1.41 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 100 µg/l Marine water	Algae - Phyllospora comosa	96 hours
Propargyl alcohol	EC50 98.1 mg/l	Algae	72 hours
	Acute EC50 3.36 mg/l	Daphnia	48 hours
	Acute LC50 4.64 mg/l	Fish	96 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
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.67 ppm Fresh water	Fish - Oncorhynchus kisutch	40 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Propargyl alcohol	-	-	Readily

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

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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	IMDG	IATA
UN number	UN1992	UN1992	UN1992	UN1992
UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains: Isopropanol, Propargyl alcohol)	FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains: Isopropanol, Propargyl alcohol)	FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains: Isopropanol, Propargyl alcohol)	FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains: Isopropanol, Propargyl alcohol)
Transport hazard class(es)	3 (6.1) 	3 (6.1) 	3 (6.1) 	3 (6.1) 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	No.
Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.26-2.36 (Class 6)	**Emergency schedules (EmS)** F-E S-E	-

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.

DOT Reportable Quantity Formaldehyde, 167 gal of this product.
Propargyl alcohol, 2535 gal of this product.
Naphthalene, 837 gal of this product.

Section 14. Transport information

Marine pollutant Heavy aromatic naphtha
Acetylenic alcohol

North-America NAERG : 131

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: Formaldehyde; Heavy aromatic solvent naphtha; Naphthalene; Isopropyl alcohol; Propargyl alcohol

CEPA Toxic substances : The following components are listed: Formaldehyde; Naphthalene

Canada (CEPA DSL): : At least one component is not listed in DSL but all such components are listed in NDSL.

Inventory list

United States : All components are listed or exempted.

Additional information

This product contains a chemical (CAS No. 72480-70-7 - tar bases, quinoline derivatives, benzyl chloride-quaternized) that has not been placed on the DSL due to a suspicion of being toxic. Environment Canada has imposed a condition which allows the importation of this substance for the purpose of use as an acid corrosion inhibitor employed in the stimulation of oil and gas wells. This substance should not be discharged into water and disposal is limited to deep-well injection. All users must be notified of these conditions in writing.

Section 16. Other information

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

History

Date of printing : 2/24/2017

Notice to reader

NOTE: The information on this SDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This SDS was prepared and is to be used for this product. If the product is used as a component in another product, this SDS information may not be applicable.

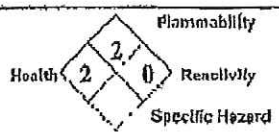
NC 1

NE-6 Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	ARBREAK 8792 DEMULSIFIER	Code	ARB8792
Supplier	Aquaness Chemical A Division Of Baker Petrolite Corporation A Baker Hughes company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. cst, Monday - Friday)	Version	1.0
Material Uses	Demulsifier.	Effective Date	12/14/2004
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (North America 24 hour) CANUTEC 613-996-6666 (Canada 24 hours)	Print Date	12/14/2004

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



Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	Exposure Limits
Light aromatic naphtha	64742-95-6	30-60	Not available.
1,2,4-Trimethylbenzene	95-63-6	10-30	Not available.
1,2,3-Trimethylbenzene	526-73-8	1-5	Not available.
1,3,5-Trimethylbenzene	108-67-8	5-10	Not available.
Xylene	1330-20-7	1-5	ACGIH (United States). TWA: 434 mg/m³ 8 hour(s). STEL: 651 mg/m³ 15 minute(s). TWA: 100 ppm 8 hour(s). STEL: 150 ppm 15 minute(s). OSHA (United States). TWA: 100 ppm 8 hour(s). STEL: 150 ppm 15 minute(s). TWA: 435 mg/m³ 8 hour(s). STEL: 655 mg/m³ 15 minute(s).
2-Ethylhexanol	104-76-7	5-10	Manufacturer TWA: 20 ppm

While trimethylbenzene isomers do not have exposure limits, trimethylbenzene (mixed isomers)(CAS No. 25551-13-7) has TWA value of 25 ppm for both ACGIH and OSHA (revoked limit).

Continued on Next Page

Section 3. Hazards Identification

Physical State and Appearance	State: Liquid., Color: Dark Brown., Odor: Acidic. Aromatic hydrocarbon.
CERCLA Reportable Quantity	Xylene 793 gal.
Hazard Summary	WARNING. May cause chronic effects. Combustible liquid. At elevated temperatures, vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to distant ignition sources and flash back. Static discharges can cause ignition or explosion when container is not bonded. May be irritating to eyes, skin and respiratory tract. May cause central nervous system (CNS) effects if inhaled.
Routes of Exposure	Skin (Contact), Eyes, Inhalation.
Potential Acute Health Effects	
Eyes	May be severely irritating to the eyes.
Skin	May be irritating to skin.
Inhalation	May cause central nervous system (CNS) effects if inhaled. May be irritating to lungs.
Ingestion	Not considered a likely route of exposure, however, may be harmful or cause irritation if swallowed.
Medical Conditions aggravated by Exposure	Exposure to this product may aggravate medical conditions involving the following: blood system, kidneys, nervous system, liver, gastrointestinal tract, respiratory tract, skin/epithelium, eyes.
See Toxicological Information (section 11)	
Additional Hazard Identification Remarks	May be harmful if ingested. This product may be aspirated into the lungs during swallowing or vomiting of swallowed material. Aspiration into the lungs may produce chemical pneumonitis, pulmonary edema, and hemorrhaging. Repeated or prolonged contact may cause dermatitis (inflammation) and defatting of the skin (dryness).

Section 4. First Aid Measures

Eye Contact	Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. Get medical attention immediately.
Skin Contact	Remove and launder or clean contaminated clothing and shoes. Wash with soap and water for at least 15 minutes or until no evidence of material remains. Get medical attention if irritation occurs.
Inhalation	Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions. Get medical attention if symptoms appear.
Notes to Physician	Not available.
Additional First Aid Remarks	If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs. If breathing has stopped or the heart has stopped, trained personnel should immediately administer artificial respiration or cardiopulmonary resuscitation, as required.

Continued on Next Page

Section 5. Fire Fighting Measures

Flammability of the Product	Combustible liquid. At elevated temperatures, vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to distant ignition sources and flash back. Static discharges can cause ignition or explosion when container is not bonded.
OSHA Flammability Class	II
Autoignition temperature	Not available.
Flash Points	Closed cup: 46.7°C (116°F). (PMCC)
Flammable Limits	L.E.L. Not available. U.E.L. Not available.
Products of Combustion	These products are carbon oxides (CO, CO_2) nitrogen oxides (NO, NO_2...) sulfur oxides (SO_2, SO_3...).
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static, Heat.
Fire Fighting Media and Instructions	In case of fire, use foam, dry chemicals, or CO2 fire extinguishers. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Not available.

Section 6. Accidental Release Measures

Spill	Put on appropriate personal protective equipment. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking, or flames in hazard area. Approach release from upwind. Shut off leak if it can be done safely. Contain spilled material. Keep out of waterways. Dike large spills and use a non-sparking or explosion-proof means to transfer material to an appropriate container for disposal. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Other Statements	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.
Additional Accidental Release Measures Remarks	Not available.

Continued on Next Page

Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from heat, sparks and flame. Keep away from incompatibles. Keep container tightly closed and dry. To avoid fire or explosion, ground container equipment and personnel before handling product.
Additional Handling and Storage Remarks	Not available.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes Chemical safety goggles.

Body Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure levels are exceeded, use NIOSH approved full face respirator.

Hands Chemical resistant gloves. Nitrile or Neoprene gloves. 4H gloves.

Feet Chemical resistant boots or overshoes.

Other Information Not available.

Additional Exposure Control Remarks	Not available.

Section 9. Typical Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odor	Acidic. Aromatic hydrocarbon.
pH	8.6 - 9.5 (5% of product in 75% isopropanol / 25% water solution)	Color	Dark Brown.
Specific gravity	0.962 - 0.964 @ 16°C (60°F)		
Density	7.93 - 8.03 lbs/gal @ 16°C (60°F)		
Vapor Density	>1 (Air = 1)		
Vapor Pressure	7.6 - mmHg @ 21°C (70°F) Calculated Value for all Components.		
Evaporation Rate	Not Available or Not Applicable for Solids.		
VOC	Not available.		
Viscosity	11 - 12 cps @ 38°C (100°F) Kinematic		
Pour Point	-40°C (-40°F)		
Solubility (Water)	Dispersible		
Boiling Point	Not available.		

Continued on Next Page

Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Oxidizing material.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Hazardous polymerization is not expected to occur.
Special Stability & Reactivity Remarks	Not available.

Section 11. Toxicological Information

Component Toxicological Information

Acute Animal Toxicity

Light aromatic naphtha	ORAL (LD50): Acute: 2800 mg/kg [Rat]. 8400 mg/kg [Rat].
1,2,4-Trimethylbenzene	ORAL (LD50): Acute: 5000 mg/kg [Rat]. VAPOR (LC50): Acute: 18000 mg/m³ 4 hour(s) [Rat].
1,2,3-Trimethylbenzene	Not available.
1,3,5-Trimethylbenzene	VAPOR (LC50): Acute: 24000 mg/m³ 4 hour(s) [Rat].
Xylene	ORAL (LD50): Acute: 4300 mg/kg [Rat]. 3523 mg/kg [Male rat]. DERMAL (LD50): Acute: >1700 mg/kg [Rabbit]. VAPOR (LC50): Acute: 5000 ppm 4 hour(s) [Rat].
2-Ethylhexanol	ORAL (LD50): Acute: 3730 mg/kg [Rat]. 2500 mg/kg [Mouse]. DERMAL (LD50): Acute: 1970 mg/kg [Rabbit].

Chronic Toxicity Data

1) Light aromatic naphtha

Ingestion has produced Central Nervous System effects in laboratory animals. (EPA/OTS 87-8214199 and 88-920000348)

2) 1,2,4-Trimethylbenzene

1,2,4-Trimethylbenzene, also know as pseudocumene, is a component of this product. Chronic pseudocumene exposure may provoke bronchospasm with cough and wheezing (Plunkett, 1976; ACGIH, 1991; Baltig et al, 1956). Respiratory distress was noted in experimental animals following sub acute inhalation exposure (Gage, 1970). Nervousness and anxiety were noted with chronic occupational exposure (Baltig et al, 1956; ACGIH, 1991).

At the time of this review, no studies were found on the potential adverse reproductive effects of pseudocumene in humans, but trimethylbenzenes (including pseudocumene) can cross the placental barrier (Clayton & Clayton, 1994; Dorolv et al, 1976). In an experimental animal study, offspring born to pregnant rats exposed to pseudocumene were healthy at birth and grew normally (Cameron et al, 1938).

Continued on Next Page

Blood effects such as anemia and delayed clotting time have been noticed in workers chronically exposed to a solvent containing trimethylbenzene. The blood effects, however, may have been due to a contaminant in the solvent such as benzene (a known blood toxin).

3) 1,2,3-Trimethylbenzene

Not available.

4) 1,3,5-Trimethylbenzene

1,3,5-Trimethylbenzene (Mesitylene) is a component of this product. Chronic asthmatic-like bronchitis may be a delayed chronic hazard (EPA, 1985; Laham, 1987; HSDB, 1997). Nervousness, tension, and anxiety have been noted in chronically exposed workers with exposure to a mixture of solvents including mesitylene (HSDB, 1997). Elevated alkaline phosphates and SGOT(liver enzymes) levels have been noted in chronic animal inhalation studies (Clayton & Clayton, 1994). These effects have not been reported in exposed humans. (Reprotext)

Thrombocytopenia (a lack of platelets in the blood) with bleeding from the gums and nose and mild anemia may occur with chronic exposure to mesitylene as a component of the commercial solvent mixture, "Fleet-X-DV-99" (Plunkett, 1976; Finkel, 1983; HSDB, 1997). Coagulation (clotting of the blood) times were delayed by about 40% in a group of workers chronically exposed to a mixture of solvents containing about 30% mesitylene (Laham, 1987). These hematological disorders may have been due to a contaminant, such as benzene (Hathaway et al, 1996). Thrombocytosis (an increase of platelets in the blood) and thrombocytopenia have been noted in rabbits (Clayton & Clayton, 1994). (Reprotext)

1,3,5-Trimethylbenzene has been positive in a mutagenicity assay (Lewis, 1992). (Reprotext)

5) Xylene

Xylene (mixed isomers) is a component of this product. Effects of chronic exposure to xylene are similar to those of acute exposure, but may be more severe. Chronic inhalation reportedly was associated with headache, tremors, apprehension, memory loss, weakness, dizziness, loss of appetite, nausea, ringing in the ears, irritability, thirst, anemia, mucosal bleeding, enlarged liver, and hyperplasia, but not destruction of the bone marrow (Clayton & Clayton, 1994; ILO, 1983). Some earlier reports of effects of chronic exposure to xylene have been questioned, as exposures were not limited to xylene alone.

Effects on the blood have been reported from chronic exposure to as little as 60 mg/m3 (Pap & Varga, 1987). Repeated exposure can damage bone marrow, causing low blood cell count and can damage the liver and kidneys (NJ Department of Health, Hazardous Substance Fact Sheet). Chronic xylene exposure (usually mixed with other solvents) has produced irreversible damage to the CNS (ILO, 1983). CNS effects may be exacerbated by ethanol abuse (Savolainen, 1980). Xylene may damage hearing or enhance sensitivity to noise in chronic occupational exposures (Morata et al, 1994), probably from neurotoxic mechanism. Tolerance to xylene can occur over the work week and disappear over the weekend. (ACGIH, 1992).

Inhalation exposure has produced fetotoxicity and postnatal developmental toxicity in laboratory animals. (API, 1978, Kensington, MD, EPA/OTS Document No. 878210350 and Hass, U., et al, 1995, Neurotoxicology and Teratology 17: 341-349 and 1997, Neurotoxicology 18: 547-552)

6) 2-Ethylhexanol

2-Ethylhexanol (2EH) is a component of this product. Chronic overexposure has been suggested as a cause of the following effects in laboratory animals, and may aggravate pre-existing disorders of these organs in humans: liver abnormalities, kidney damage, lung damage, cardiac abnormality, blood abnormalities, and spleen damage. (Vendor MSDS)

In subchronic oral studies, 2EH has produced liver and kidney effects in laboratory animals. (RTECS)

2EH has produced developmental effects in oral studies in laboratory animals including teratogenicity at maternally toxic doses (Clayton & Clayton, 1994). (HSDB)

Continued on Next Page

Product Toxicological Information	
Acute Animal Toxicity	Not available.
Target Organs	blood system, kidneys, nervous system, liver, gastrointestinal tract, respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	Not available.

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Additional Waste Remarks	Not available.

Section 14. Transport Information

DOT Classification	FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, 1,2,4-Trimethylbenzene), 3, UN1993, III	
DOT Reportable Quantity	Xylene 793 gal.	
Marine Pollutant	Not applicable.	
Additional DOT Information	Not available.	
Emergency Response Guide Page Number	128	

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Section 15. Regulatory Information

HCS Classification	Target organ effects, Combustible liquid. At elevated temperatures, vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to distant ignition sources and flash back. Static discharges can cause ignition or explosion when container is not bonded. Irritant.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Not applicable to any components in this product. SARA 313 Toxic Chemical Notification and Release Reporting: 1,2,4-Trimethylbenzene; Xylene; SARA 302/304 Emergency Planning and Notification substances: Not applicable to any components in this product. Hazardous Substances (CERCLA 302): Xylene 793 gal.; SARA 311/312 MSDS distribution - chemical inventory - hazard identification: fire; immediate health hazard; delayed health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Not applicable to any components in this product. Clean Water Act (CWA) 311 Hazardous Substances: Xylene; Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Not applicable to any components in this product.
Threshold Planning Quantity (TPQ)	Not applicable.
TSCA Inventory Status	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory. This product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States: Xylene; Naphthalene.
State Regulations	State specific information is available upon request from Baker Petrolite.
International Regulations	
Canada	All components are compliant with or are exempted from listing on the Canadian Domestic Substance List.
WHMIS (Canada)	B-3, D-2A, D-2B
European Union	All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.
	International inventory status information is available upon request from Baker Petrolite for the following countries: Australia, China, Korea (TCCL), Philippines (RA6969), or Japan.
Harmonized Tariff Code	Not available.
Other Regulatory Information	No further regulatory information is available.

Continued on Next Page

Section 16. Other Information

Other Special Considerations: File 2634

Baker Petrolite Disclaimer

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • **PLEXGEL BREAKER XPA**

Product Code • 01025

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

Recommended use • Petrochemical industry

Details of the supplier of the safety data sheet

Manufacturer • Chemplex | Solvay USA Inc. | Novecare Division
506 CR 137
P.O. Box 1071 Snyder, TX 79550
United States
www.chemplex.net
SDS@chemplex.net

Telephone (General) • 325.573.7298

Emergency telephone number

Manufacturer • 800.424.9300 - CHEMTREC

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Eye Irritation 2

Label elements

OSHA HCS 2012

WARNING

Hazard statements • Causes serious eye irritation

Precautionary statements

Prevention • Wear eye/face protection - Safety glasses with side-shield, .
Wash 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.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Storage/Disposal

- Store in a well-ventilated place. Keep cool.
  Store in a well-ventilated place. Keep container tightly closed.
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
  Wash thoroughly after handling.

Other hazards

OSHA HCS 2012

- No data available

Canada

According to: WHMIS

Classification of the substance or mixture

WHMIS

- Other Toxic Effects - D2B

Label elements

WHMIS

- Other Toxic Effects - D2B

Other hazards

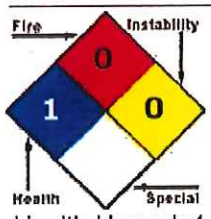
WHMIS

- No other WHMIS hazards than those reported above.
  See all section 2 hazard statements.

Other information

- One should be specifically trained before communicating or using the following National Fire Protection Association (NFPA) and or Hazardous Materials Identification System (HMIS) categories since the definition and scales applied do not match US OSHA GHS and HAZCOM 2012 definitions and rules.

NFPA



- Health Hazard: 1 - Caution: May be irritating
  Reactivity: 0 - Stable: Not reactive under normal conditions
  Flammability: 0 - Not combustible

HMIS

- HMIS Health - 1: Slight Hazard
  HMIS Flammability - 0: Minimal Hazard
  HMIS Physical Hazard - 0: Minimal Hazard

Section 3 - Composition/Information on Ingredients

Substances

- Not applicable. This material is a mixture.

Mixtures

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Composition			
Chemical Name	**Identifiers**	**%**	**Hazardous**
Hydrogen peroxide	CAS:7722-84-1	5% TO 8%	Yes

- This product is considered hazardous according to the OSHA Hazard Communication Standard 29 CFR 1910.1200. Under Canadian regulations (Workplace Hazardous Materials Information System (WHMIS) - Hazardous Products Act (HPA), this material is hazardous.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation
- Get medical attention immediately if symptoms occur. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin
- Get medical attention immediately if symptoms occur. Rinse skin immediately with plenty of water for 15-20 minutes. Take off contaminated clothing and wash before reuse.

Eye
- Flush eyes with water for at least 15 minutes while holding eyelids open. Get medical attention immediately. If easy to do, remove contact lenses, if worn.

Ingestion
- Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side. Do NOT induce vomiting. Get medical attention immediately. Give nothing to drink.

Most important symptoms and effects, both acute and delayed

- Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. There is no specific antidote available.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media
- LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
  SMALL FIRES: Dry chemical, CO2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
- DO NOT use high volume water jet.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Hydrogen peroxide decomposes to release oxygen.
  Containers may explode when heated.

Hazardous Combustion Products
- Hazardous combustion products may include a complex mixture of airborne solid and liquid particulates and gases (acrid smoke and irritating fumes).

Advice for firefighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
  Standard procedures for chemical fires.

Collect contaminated fire extinguishing materials separately. This must be not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Cool closed containers exposed to fire with water spray.
Refer to Section 8 - Exposure Controls/Personal Protection.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Avoid contact with eyes. Wear eye/face protection. Refer to Section 8 - Exposure Controls/Personal Protection.

Emergency Procedures

- Keep unauthorized personnel away. Avoid all contact. Strict hygiene. Ventilate closed spaces before entering. Stop leak if you can do it without risk.

Environmental precautions

- Spills may be reportable to the National Response Center (800-424-8802) and to state and or local agencies. Do not flush to sewer or allow to enter waterways. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Dike to collect large liquid spills.
  Contain and recover liquid when possible.
  Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
  Wash remainder with plenty of water.
  Water will make area slippery.
  Repeat cleaning process until the contaminated surface is no longer slippery.
  Refer to Section 13 - Disposal Considerations.

Prohibited Materials

- Strong alkalines and oxidizing materials. Sources of ignition - heat, sparks and open flames.

Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Avoid contact with skin and eyes. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage

- Store locked up. Keep only in the original container/package in a cool well-ventilated place. Store away from alkali(bases)and oxidizing agents. Avoid excessive heat.

Incompatible Materials or Ignition Sources

- Reactive with strong bases and oxidizing agents.

Refer to Section 8 - Exposure Controls/Personal Protection.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines

- Use only with adequate ventilation. Avoid all contact. Strict hygiene.

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Hydrogen peroxide (7722-84-1)	TWAs	1 ppm TWA	1 ppm TWA; 1.4 mg/m3 TWA	1 ppm TWA; 1.4 mg/m3 TWA

Exposure controls

Engineering Measures/Controls

- Good general ventilation 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.

Personal Protective Equipment

Respiratory

- When respirators are required, use NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Eye/Face

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Wear eye/face protection - Safety glasses with Side-shield, .

Skin/Body

- Wear protective gloves/protective clothing/eye protection/face protection.

General Industrial Hygiene Considerations

- Avoid all contact. Strict hygiene. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Keep away from food, drink and animal feeding stuffs.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Additional Protection Measures

- The protective equipment must be selected in accordance with local standards and in cooperation with the supplier of the protective equipment. Selection of the appropriate personal protective equipment should be based upon an evaluation of the performance characteristics of the protective equipment relative to the tasks to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use. Emergency equipment should be immediately accessible, with instructions for use. Facilities using or storing this material should be equipped with an eyewash and safety shower in close proximity to areas of storage and use.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Color	Red
Odor	Odorless	Odor Threshold	No data available
General Properties			
Boiling Point	214 F(101.1111 C)	Melting Point	No data available
Decomposition Temperature	No data available	pH	5.5 to 6.5
Specific Gravity/Relative Density	= 1.03 Water=1	Density	1.03 g/mL
Water Solubility	Soluble	Viscosity	No data available
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	None		
Environmental			
Octanol/Water Partition coefficient	No data available	Bioaccumulation Factor	None

Section 10: Stability and Reactivity

Reactivity

- Hydrogen peroxide decomposes to release oxygen.

Chemical stability

- This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat.

Incompatible materials

- Hydrogen peroxide decomposes to release oxygen. Keep away from combustible and flammable materials.

Hazardous decomposition products

- Hydrogen peroxide decomposes to release oxygen. Hazardous combustion products may include a complex mixture of airborne solid and liquid particulates and gases (acrid smoke and irritating fumes)

Section 11 - Toxicological Information

Information on toxicological effects

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral - Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Eye Irritation 2

Medical Conditions Aggravated by Exposure

- None known.

Potential Health Effects

Inhalation

Acute (Immediate)

- Classification criteria not met.

Chronic (Delayed)

- No data available

Skin

Acute (Immediate)
- Classification criteria not met.

Chronic (Delayed)
- No data available

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- May cause burns of the gastrointestinal tract if swallowed.

Chronic (Delayed)
- No data available

Section 12 - Ecological Information

Toxicity

- No data available

Persistence and degradability

- No data available

Bioaccumulative potential

- No data available

Mobility in Soil

- No data available

Other adverse effects

- According to test data on the components and the classification criteria for mixtures, this product has no known adverse effects on aquatic organisms.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Empty containers pose a fire risk, evaporate the residue under a fume hood. Rinse with an appropriate solvent.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	Not regulated	NDA	NDA	NDA	NDA
TDG	Not regulated	NDA	NDA	NDA	NDA
IMO/IMDG	Not regulated	NDA	NDA	NDA	NDA
IATA/ICAO	Not regulated	NDA	NDA	NDA	NDA

Special precautions for user
- No data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- No data available

Other information
- Transportation status: The listed Transportation Classification does not address all regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

Note: The above regulatory prescriptions are those valid on the date of the publication of this sheet. Given the possible evolution of transportation regulations for Hazardous materials, it would be advisable to check their validity with your sales office.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute

United States

Environment

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities		
• Hydrogen peroxide	7722-84-1	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs		
• Hydrogen peroxide	7722-84-1	1000 lb EPCRA RQ (concentration >52%)
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs		
• Hydrogen peroxide	7722-84-1	1000 lb TPQ (concentration >52%)
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
• Hydrogen peroxide	7722-84-1	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List		
• Hydrogen peroxide	7722-84-1	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
• Hydrogen peroxide	7722-84-1	Not Listed

Other Information

- All components of this product are listed on the following:

  - US TSCA Inventory.

Section 16 - Other Information

Last Revision Date
- 16/April/2015

Preparation Date
- 16/April/2015

Disclaimer/Statement of Liability
- 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. Such information is only given as a guidance to help the user handle, use, process, store, transport,

dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but does not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
IARC = International Agency for Research on Cancer
MSHA = Mine Safety and Health Administration
NIOSH = National Institute of Occupational Safety and Health
NTP = National Toxicology Program
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name Plexslick 957

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

Uses advised against

- For industrial use only.

1.3 Details of the supplier of the safety data sheet

Company

Chemplex, Solvay Group
506 CR 137
Snyder, TX 97549
Phone: (325) 573-7298

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

- Not a hazardous product according to Globally harmonized System (GHS)

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

- Not a hazardous product according to Globally harmonized System (GHS)

2.3 Other hazards which do not result in classification

- Slightly irritating to eyes.
- Aspiration of the swallowed or vomited product can cause severe pulmonary complications.
- No specific risk when handled in accordance with good occupational hygiene and safety practice.
- Does NOT present any particular fire hazard.
- Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

- Chemical nature — Emulsion of petroleum distillate and aqueous solution.

Hazardous Ingredients and Impurities

Chemical Name	Identification number CAS-No.	Concentration [%]
Distillates (petroleum), hydrotreated light	64742-47-8	14 - 19

The specific chemical identity and/or 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

- Show this material safety data sheet to the doctor in attendance.
- First responder needs to protect himself.
- Place affected apparel in a sealed bag for subsequent decontamination.

In case of inhalation

- Remove to fresh air.
- If breathing is difficult, give oxygen.
- If breathing has stopped, apply artificial respiration.
- Consult a physician if necessary.

In case of skin contact

- Wash off with soap and plenty of water.
- Remove contaminated clothing and shoes.
- Wash contaminated clothing before re-use.
- Call a physician if irritation develops or persists.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Consult a physician if necessary.

In case of ingestion

- Do NOT induce vomiting.
- Do not give anything to drink.
- Seek medical advice.
- Do not leave the victim unattended.
- Vomiting may occur spontaneously
- Risk of product entering the lungs on vomiting after ingestion.
- Lay victim on side.

4.2 Most important symptoms and effects, both acute and delayed

Effects

- No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Firefighting measures

Flash point	> 200 °F (> 93 °C) closed cup
	Flammability class: Will burn
Autoignition temperature	no data available
Flammability / Explosive limit	no data available

5.1 Extinguishing media

Suitable extinguishing media

- Water mist
- Carbon dioxide (CO2)
- Foam
- Dry chemical

Unsuitable extinguishing media

- Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- Under fire conditions:
- Will burn
- (following evaporation of water)
- Harmful or toxic vapors are released.

Hazardous combustion products:

- Hazardous combustion products
- Carbon oxides
- Nitrogen oxides (NOx)
- Sulfur oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Specific fire fighting methods

- Cool closed containers exposed to fire with water spray.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Avoid contact with the skin and the eyes.
- Wear suitable protective equipment.
- For personal protection see section 8.
- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2 Environmental precautions

- Do not let product enter drains.
- Prevent product from entering sewage system.
- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

Recovery

- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
- Sweep up and shovel into suitable containers for disposal.
- Never return spills in original containers for re-use.

Decontamination / cleaning

- Clean contaminated surface thoroughly.
- Wash off with plenty of water.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.

Disposal

- Dispose of in accordance with local regulations.

Additional advice

- Material can create slippery conditions.

6.4 Reference to other sections

- no data available

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Avoid inhalation, ingestion and contact with skin and eyes.
- Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

- Keep in a dry, cool and well-ventilated place.
- Keep container tightly closed.
- Do not freeze.

- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Ingredients	Value type	Value	Basis
Distillates (petroleum), hydrotreated light	TWA	200 mg/m3	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :as total hydrocarbon vapor		
Distillates (petroleum), hydrotreated light	TWA	500 ppm 2,000 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.		

8.2 Exposure controls

Control measures

Engineering measures

- Effective exhaust ventilation system

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :

Individual protection measures

Respiratory protection

- Use a respirator with an approved filter if a risk assessment indicates this is necessary.
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves must be inspected prior to use.

- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection
- Safety glasses with side-shields
- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:

Skin and body protection
- Remove and wash contaminated clothing before re-use.
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Protective suit
- Boots

Hygiene measures
- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Protective measures
- Ensure that eyewash stations and safety showers are close to the workstation location.
- The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	Physical state: liquid Color: white
Odor	oily
Odor Threshold	no data available
pH	not determined
Boiling point/boiling range	no data available
Flash point	> 200 °F (> 93 °C) closed cup

	Flammability class: Will burn
Evaporation rate (Butylacetate = 1)	no data available
Flammability (solid, gas)	no data available
Flammability (liquids)	no data available
Flammability / Explosive limit	no data available
Autoignition temperature	no data available
Vapor pressure	no data available
Vapor density	no data available
Density	1.02 - 1.11 g/cm3 (25 °C)
Solubility	no data available
Partition coefficient: n-octanol/water	no data available
Thermal decomposition	no data available
Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- no data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Polymerization

- Hazardous polymerization does not occur.

10.4 Conditions to avoid

- Heat, flames and sparks.

10.5 Incompatible materials

- Strong oxidizing agents

10.6 Hazardous decomposition products

- On combustion or on thermal decomposition (following the evaporation of water) releases:
- Carbon oxides
- Nitrogen oxides (NOx)
- Sulfur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	no data available
Acute inhalation toxicity	no data available
Acute dermal toxicity	no data available
Acute toxicity (other routes of administration)	no data available
Skin corrosion/irritation	Not classified as irritating to skin According to the data on the components
Serious eye damage/eye irritation	slight irritation
Respiratory or skin sensitization	Not classified as sensitizing by skin contact According to the data on the components

Mutagenicity

Genotoxicity in vitro	no data available
Genotoxicity in vivo	no data available
Carcinogenicity	no data available

Ingredients	CAS-No.	Rating	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	Confirmed animal carcinogen with unknown relevance to humans	ACGIH

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA

Toxicity for reproduction and development

Toxicity to reproduction / fertility	no data available

Developmental Toxicity/Teratogenicity	no data available

STOT

STOT-single exposure	no data available
STOT-repeated exposure	no data available
Aspiration toxicity	no data available

SECTION 12: Ecological Information

12.1 Toxicity no data available

12.2 Persistence and degradability

Biodegradation

Biodegradability	The product itself has not been tested.

12.3 Bioaccumulative potential	no data available
12.4 Mobility in soil	no data available
12.5 Results of PBT and vPvB assessment	This mixture contains no substance considered to be persistent, bioaccumulating, and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
12.6 Other adverse effects	no data available

Ecotoxicity assessment

Acute aquatic toxicity	This product has no known ecotoxicological effects. According to the data on the components
Chronic aquatic toxicity	This product has no known ecotoxicological effects. According to the data on the components

SECTION 13: Disposal considerations

13.1Waste treatment methods

Product Disposal

- Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – NO

Advice on cleaning and disposal of packaging

- Completely empty the packaging prior to decontamination.
- Rinse with an appropriate solvent.
- Dispose of in accordance with local regulations.

Measure for waste avoidance or recovery

- Do not dispose of the product at a dump.

SECTION 14: Transport information

DOT
not regulated

TDG
not regulated

NOM
no data available

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	On TSCA Inventory
Canadian Domestic Substances List (DSL)	All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS)	On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	On the inventory, or in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	On the inventory, or in compliance with the inventory

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA Hazard Designation Sections 311/312 (40 CFR 370)

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	no
Chronic Health Hazard	no

Section 313 Toxic Chemicals (40 CFR 372.65)

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.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

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

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)

Ingredients	CAS-No.	Reportable quantity
Oxirane	75-21-8	10 lb
Formaldehyde	50-00-0	100 lb

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

Ingredients	CAS-No.	Reportable quantity
Oxirane	75-21-8	10 lb
Formaldehyde	50-00-0	100 lb

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Ingredients	CAS-No.	Reportable quantity
Diethanolamine	111-42-2	100 lb
Oxirane	75-21-8	10 lb
1,4-Dioxane	123-91-1	100 lb
Formaldehyde	50-00-0	100 lb
Methanol	67-56-1	5000 lb
Acetaldehyde	75-07-0	1000 lb

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

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

Ingredients	CAS-No.
Diethanolamine	111-42-2
Oxirane	75-21-8
Acetaldehyde	75-07-0
1,4-Dioxane	123-91-1
Formaldehyde	50-00-0

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Ingredients	CAS-No.
Methanol	67-56-1
Oxirane	75-21-8

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	0 minimal
Flammability	1 slight
Instability or Reactivity	0 minimal

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	0 minimal
Flammability	1 slight
Reactivity	0 minimal
PPE	Determined by User; dependent on local conditions

Further information

- Product classified under the US GHS format.

Date Prepared: 03/13/2015

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA — 8-hour, time-weighted average
- ACGIH — American Conference of Governmental Industrial Hygienists
- OSHA — Occupational Safety and Health Administration
- NTP — National Toxicology Program

- IARC — International Agency for Research on Cancer
- NIOSH — National Institute for Occupational Safety and Health

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

Safety Data Sheet

Chemplex
SOLVAY GROUP

Section 1: Identification

Product identifier

Product Name • **Claymax**

Synonyms • Product number: 00601

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

Recommended use • Potassium chloride substitute in oil well treatment

Details of the supplier of the safety data sheet

Manufacturer • Chemplex | Solvay USA Inc. | Novecare Division
506 CR 137
P.O. Box 1071 Snyder, TX 79550
United States
www.chemplex.net
SDS@chemplex.net

Telephone (General) • 325.573.7298

Emergency telephone number

Manufacturer • 800.424.9300 - CHEMTREC

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Classification criteria not met

Label elements

OSHA HCS 2012

Hazard statements • No label element(s) required

Other hazards

OSHA HCS 2012 • This product is not considered hazardous under the U.S. OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Canada

According to WHMIS

Classification of the substance or mixture

WHMIS • Classification criteria not met

Label elements

WHMIS

- No label element(s) required

Other hazards

WHMIS

- In Canada, the product mentioned above is not considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Other information

NFPA

See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

Substances

Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	**CAS:**67-48-1	40% TO 70%	Ingestion/Oral-Rat LD50 • 3400 mg/kg	**OSHA HCS 2012:** Not Classified - Criteria not met	NDA
Water	**CAS:**7732-18-5	15% TO 40%	Ingestion/Oral-Rat LD50 • >90 mL/kg	**OSHA HCS 2012:** Not Hazardous	NDA

- Material does not meet the criteria of a mixture.

See Section 11 for Toxicological Information.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

Skin

- IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.

Ingestion

- Do NOT Induce vomiting. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media
- LARGE FIRE: Water spray, fog or regular foam.
  SMALL FIRES: Dry chemical, CO2, water spray or regular foam.

Unsuitable Extinguishing Media
- No data available.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- No unusual fire and explosion hazards known.

Hazardous Combustion Products
- No data available.

Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Wear appropriate personal protective equipment. Do not walk through spilled material.

Emergency Procedures
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Ventilate closed spaces before entering.

Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Stop leak if you can do it without risk.
  Prevent entry into waterways, sewers, basements or confined areas.
  SMALL SPILLS: Take up with sand or other non-combustible absorbent material and place into containers for later disposal.
  LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

Section 7 - Handling and Storage

Precautions for safe handling

Handling
- Wear appropriate personal protective equipment. Avoid contact with skin and eyes. DO NOT ingest. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage
- Keep away from heat, ignition sources and strong oxidizing agents. Store in a cool, dry, well-ventilated place. Keep container closed when not in use. Avoid storing at elevated temperatures and freezing temperatures. Optimal storage temperature: 41-81 F; Ground all equipment containing material.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines
- No applicable exposure limits have been established for the components or the

material.

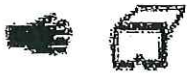
Exposure controls

Engineering Measures/Controls

- Facilities using or storing this material should be equipped with an eyewash and safety shower in close proximity to areas of storage and use. Good general ventilation 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.

Personal Protective Equipment

Pictograms

- 

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/Face

- Wear protective eyewear (goggles, face shield, or safety glasses).

Skin/Body

- Wear appropriate gloves.

General Industrial Hygiene Considerations

- Do not get in eyes or on skin or clothing. Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Environmental Exposure Controls

- No data available

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless to yellow liquid with slight fish odor.
Color	Colorless to pale yellow.	Odor	Slight fish odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	> 212 F(> 100 C)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Near neutral (1% solution with water)
Specific Gravity/Relative Density	1.0856 Water=1	Water Solubility	100 %
Viscosity	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Not Defined
Evaporation Rate	Data lacking		
Flammability			
Flash Point	> 200 F(> 93.3333 C) Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- No data available.

Incompatible materials

- No data available.

Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride (40% TO 70%)	67-48-1	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3400 mg/kg; *Sense Organs and Special Senses:Eye:***Chromodacyroffhea**; *Behavioral:***Excitement**; *Lungs, Thorax, or Respiration:***Respiratory depression**

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/irritation	OSHA HCS 2012 • Classification criteria not met

Route(s) of entry/exposure
- Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

Acute (Immediate)
- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)
- No data available.

Skin

Acute (Immediate)
- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)
- No data available.

Eye

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available.

Ingestion

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available.

Key to abbreviations
LD = Lethal Dose

Section 12 - Ecological Information

Toxicity

• Material data lacking.

Persistence and degradability

• Material data lacking.

Bioaccumulative potential

• Material data lacking.

Mobility in Soil

• Material data lacking.

Other adverse effects

• No studies have been found.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

Special precautions for user • None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Not relevant.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • None

State Right To Know				
Component	CAS	MA	NJ	PA
Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	No	No	No
Water	7732-18-5	No	No	No

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Yes	No	Yes
Water	7732-18-5	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Uncontrolled product according to WHMIS classification criteria (including 60%, 70%)
• Water	7732-18-5	Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS - Ingredient Disclosure List

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed

• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

United States - Rhode Island

Labor

U.S. - Rhode Island - Hazardous Substance List

• Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride	67-48-1	Not Listed
• Water	7732-18-5	Not Listed

Section 16 - Other Information

Revision Summary		
Date	**MSDS No.**	**Changes**
18/August/2014		• Section 1 changed. Changes include Company Name Change.

Last Revision Date
- 18/August/2014

Preparation Date
- 27/November/2013

Disclaimer/Statement of Liability
- 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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

Key to abbreviations
NDA = No data available

Safety Data Sheet

Chemplex
SOLVAY GROUP

Section 1: Identification

Product identifier

Product Name • **Ferriplex 66**
Synonyms • Acetic Acid Solution
Product Code • 00307
Chemical Category • Organic acids

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

Recommended use • Petrochemical industry

Details of the supplier of the safety data sheet

Manufacturer • Chemplex | Solvay USA Inc. | Novecare Division
506 CR 137
P.O. Box 1071 Snyder, TX 79550
United States
www.chemplex.net
SDS@chemplex.net
Telephone (General) • 325.573.7298

Emergency telephone number

Manufacturer • 800.424.9300 - CHEMTREC

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Skin Corrosion 1A
Serious Eye Damage 1

Label elements

OSHA HCS 2012

DANGER

Hazard statements • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

Prevention
- Keep container tightly closed.
Keep only in original container.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

Response
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.

Storage/Disposal
- Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

OSHA HCS 2012
- Acetic acid concentrated at elevated temperature may be corrosive to metals and evolve flammable hydrogen gas. Mists of weak acid solution in water may be irritating to the respiratory system.

Canada

According to: WHMIS

Classification of the substance or mixture

WHMIS
- Corrosive - E
Other Toxic Effects - D2B

Label elements

WHMIS

- Corrosive - E
Other Toxic Effects - D2B

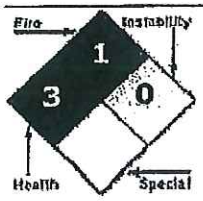
Other hazards

WHMIS
- No other WHMIS hazards than those reported above.

Other information

- One should be specifically trained before communicating or using the following National Fire Protection Association (NFPA) and or Hazardous Materials Identification System (HMIS) categories since the definition and scales applied do not match US OSHA GHS and HAZCOM 2012 definitions and rules.

NFPA



- Health Hazard: 3 - Warning: Corrosive or toxic. Avoid skin contact or inhalation.
  Flammability: 1 - Combustible if heated
  Reactivity: 0 - Stable: Not reactive under normal conditions

HMIS

- HMIS Health - 2: Moderate Hazard
  HMIS Flammability - 1: Slight Hazard
  HMIS Physical Hazard - 0: Minimal Hazard

Section 3 - Composition/Information on Ingredients

Substances

- Not applicable. This material is a mixture.

Mixtures

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Composition			
Chemical Name	**Identifiers**	**%**	**Hazardous**
Acetic acid	CAS:64-19-7	40% TO 50%	Yes
Citric acid	CAS:77-92-9	25% TO 30%	Yes

- This product is considered hazardous according to the OSHA Hazard Communication Standard 29 CFR 1910.1200. Under Canadian regulations (Workplace Hazardous Materials Information System (WHMIS) - Hazardous Products Act (HPA), this material is hazardous.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Get medical attention immediately if symptoms occur. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin

- Get medical attention immediately if symptoms occur. Rinse skin immediately with plenty of water for 15-20 minutes. Take off contaminated clothing and wash before reuse.

Eye

- Flush eyes with water for at least 15 minutes while holding eyelids open. Get medical attention immediately. If easy to do, remove contact lenses, if worn.

Ingestion

- Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side. Do NOT induce vomiting. Get medical attention immediately. Give nothing to drink.

Most important symptoms and effects, both acute and delayed

- Pain, irritation, redness or blistering of skin. May cause severe irritation and eye damage.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. There is no specific antidote available. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media
- LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
  SMALL FIRES: Dry chemical, CO2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
- DO NOT use high volume water jet.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Corrosive
  When heated to decomposition it emits acrid smoke and irritating fumes.

Hazardous Combustion Products
- Carbon monoxide (CO), and Carbon dioxide (CO2)
  Hazardous combustion products may include a complex mixture of airborne solid and liquid particulates and gases (acrid smoke and irritating fumes).

Advice for firefighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
  Standard procedures for chemical fires.
  Collect contaminated fire extinguishing materials separately. This must be not be discharged into drains.
  Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
  Cool closed containers exposed to fire with water spray.
  Refer to Section 8 - Exposure Controls/Personal Protection.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Contact may cause burns to skin and eyes. Wear suitable protective clothing. Ventilate the area. Refer to Section 8 - Exposure Controls/Personal Protection.

Emergency Procedures
- Keep unauthorized personnel away. Avoid all contact. Strict hygiene. Ventilate closed spaces before entering. Stop leak if you can do it without risk.

Environmental precautions

- Spills may be reportable to the National Response Center (800-424-8802) and to state and or local agencies. Do not flush to sewer or allow to enter waterways. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Dike to collect large liquid spills.
  Contain and recover liquid when possible.
  Neutralize the residue with dilute solution of sodium carbonate.
  Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
  Wash remainder with plenty of water.
  Water will make area slippery.
  Repeat cleaning process until the contaminated surface is no longer slippery.
  Refer to Section 13 - Disposal Considerations.

Prohibited Materials
- Strong alkalines and oxidizing materials. Sources of ignition - heat, sparks and open flames.

Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection.

Section 7 - Handling and Storage

Precautions for safe handling

Handling
- Do not breathe (dust, vapor or spray mist). Avoid contact with skin and eyes. Wash thoroughly after handling. Use only in well ventilated areas. Do not breathe (dust, vapor or spray mist)

Conditions for safe storage, including any incompatibilities

Storage
- Store locked up. Keep only in the original container/package in a cool well-ventilated place. Store away from alkali(bases)and oxidizing agents. Avoid excessive heat.

Incompatible Materials or Ignition Sources
- Reactive with strong bases and oxidizing agents. May be corrosive to metals.

Refer to Section 8 - Exposure Controls/Personal Protection.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines
- Use only with adequate ventilation. Avoid all contact. Strict hygiene.

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Acetic acid (64-19-7)	TWAs	10 ppm TWA	10 ppm TWA; 25 mg/m3 TWA	10 ppm TWA; 25 mg/m3 TWA

Exposure controls

Engineering Measures/Controls
- Good general ventilation 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.

Personal Protective Equipment

Respiratory
- When respirators are required, use NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Eye/Face
- Wear tightly fitting safety goggles to protect from serious eye damage.

Skin/Body
- Wear protective gloves/protective clothing/eye protection/face protection.

General Industrial Hygiene Considerations
- Avoid all contact. Strict hygiene. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Keep away from food, drink and animal feeding stuffs.

Environmental Exposure Controls
- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Additional Protection Measures
- The protective equipment must be selected in accordance with local standards and in cooperation with the supplier of the protective equipment. Selection of the appropriate personal protective equipment should be based upon an evaluation of the performance characteristics of the protective equipment relative to the tasks to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use. Emergency equipment should be immediately accessible, with instructions for use. Facilities using or storing this material should be equipped with an eyewash and safety shower in close proximity to areas of storage and use.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Color	Clear Colorless .
Odor	Pungent, Vinegar-like.	Odor Threshold	0.48 ppm acetic acid
General Properties			
Boiling Point	None	Melting Point	None

Decomposition Temperature	None	pH	2 to 4
Specific Gravity/Relative Density	= 1.18 @ 25 C(77 F) Water=1	Density	9.67 lbs/gal
Water Solubility	Soluble	Viscosity	None
Volatility			
Vapor Pressure	None	Vapor Density	1.45 Air=1
Evaporation Rate	No data available		
Flammability			
Flash Point	> 200 F(> 93.3333 C) closed cup	UEL	None
LEL	None	Autoignition	463 C(865.4 F) acetic acid
Flammability (solid, gas)	None		
Environmental			
Octanol/Water Partition coefficient	None	Bioaccumulation Factor	None

Section 10: Stability and Reactivity

Reactivity

- Strong Bases, Strong oxidizing agents, Strong reducing agents.

Chemical stability

- This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat.

Incompatible materials

- Strong alkalines and oxidizing materials. Acetic acid concentrated at elevated temperature may be corrosive to metals and evolve flammable hydrogen gas.

Hazardous decomposition products

- Carbon monoxide (CO), and Carbon dioxide (CO2) Hazardous combustion products may include a complex mixture of airborne solid and liquid particulates and gases (acrid smoke and irritating fumes)

Section 11 - Toxicological Information

Information on toxicological effects

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral - Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met

Skin corrosion/irritation	OSHA HCS 2012 • Skin Corrosion 1A
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/irritation	OSHA HCS 2012 • Serious Eye Damage 1

Medical Conditions Aggravated by Exposure
- None known.

Potential Health Effects

Inhalation

Acute (Immediate)
- Classification criteria not met. Mists of weak acid solution in water may be irritating to the respiratory system.

Chronic (Delayed)
- No data available

Skin

Acute (Immediate)
- Causes severe skin burns and eye damage.

Chronic (Delayed)
- No data available

Eye

Acute (Immediate)
- Causes serious eye damage.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- May cause burns of the gastrointestinal tract if swallowed.

Chronic (Delayed)
- No data available

Section 12 - Ecological Information

Toxicity
- No data available

Persistence and degradability
- No data available

Bioaccumulative potential
- No data available

Mobility in Soil
- No data available

Other adverse effects
- According to test data on the components and the classification criteria for mixtures, this product has no known adverse effects on aquatic organisms.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Please be advised that state and local requirements for

waste disposal may be more restrictive or otherwise different from federal laws and regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Empty containers pose a fire risk, evaporate the residue under a fume hood. Rinse with an appropriate solvent.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	UN2790	ACETIC ACID SOLUTION	8	II	NDA
TDG	UN2790	ACETIC ACID SOLUTION	8	II	NDA
IMO/IMDG	UN2790	ACETIC ACID SOLUTION	8	II	NDA
IATA/ICAO	UN2790	ACETIC ACID SOLUTION	8	II	NDA

Special precautions for user

- No data available

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

- No data available

Other information

- Transportation status: The listed Transportation Classification does not address all regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

- Dangerous Good Description: UN 2790 ACETIC ACID SOLUTION, 8, II

This product contains one or more ingredients identified as a hazardous substance in Appendix A of 49 CFR 172.101. The product quantity, in one package, which triggers the RQ requirements under 49 CFR for each ingredient is as follows:

Reportable quantities: RQ substance: Acetic acid RQ limit for substance: 5,000 lbs.

The Emergency Response Guidebook (ERG) number for the assigned proper shipping name is 153.

TDG

- Dangerous Good Description: UN 2790 ACETIC ACID SOLUTION, 8, II

The Emergency Response Guidebook (ERG) number for the assigned proper shipping name is 153.

IMO/IMDG

- Dangerous Good Description: UN 2790 ACETIC ACID SOLUTION, 8, II

IATA/ICAO

- Dangerous Good Description: UN 2790 ACETIC ACID SOLUTION, 8, II

Note: The above regulatory prescriptions are those valid on the date of the publication of this sheet. Given the possible evolution of transportation regulations for Hazardous materials, it would be advisable to check their validity with your sales office.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications

- Acute

United States

Environment

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Acetic acid	64-19-7	5000 lb final RQ; 2270 kg final RQ
• Citric acid	77-92-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Acetic acid	64-19-7	Not Listed
• Citric acid	77-92-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Acetic acid	64-19-7	Not Listed
• Citric acid	77-92-9	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Acetic acid	64-19-7	Not Listed
• Citric acid	77-92-9	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Acetic acid	64-19-7	Not Listed
• Citric acid	77-92-9	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Acetic acid	64-19-7	Not Listed
• Citric acid	77-92-9	Not Listed

Section 16 - Other Information

Last Revision Date • 03/March/2015

Preparation Date • 03/March/2015

Other Information • All components of this product are listed on the following:

US TSCA Inventory

Canada Domestic Substance List (DSL)

Australia Inventory of Chemical Substances (AICS)

China Inventory of Existing chemical Substances in China (IECSC)

Japan Inventory of Existing and New Chemicals (ENCS)

Korea Existing Chemical Inventory (KECI)

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Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
IARC = International Agency for Research on Cancer
MSHA = Mine Safety and Health Administration
NIOSH = National Institute of Occupational Safety and Health
NTP = National Toxicology Program
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures