Material Safety Data Sheet

1. Product and company identification

Product name : CRW9935 CORROSION INHIBITOR

Supplier : Baker Petrolite
A Division of Baker Hughes Canada, Inc.
5050 47th Street S.E.
Calgary, Alberta, T2B 3S1, Canada
For Product Information: 403-537-3850 or 281-276-5400
(8:00 a.m. - 5:00 p.m. cst, Monday - Friday)

Material Uses : Special: Corrosion Inhibitor.

Code : CRW9935

Validation date : 2/19/2010.

Print date : 2/19/2010.

Version : 8

Responsible name : Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606

In case of emergency : CANUTEC 613-996-6666 (Canada 24 hours)
Baker Petrolite 800-231-3606 (North America 24 hour)
(001)281-276-5400
CHEMTREC 800-424-9300 (U.S. 24 hour)
CHEMTREC Int'l 01-703-527-3887 (International 24 hours)

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).
Class E: Corrosive material

WHMIS (Pictograms) :

2. Hazards identification

Physical state : Liquid. [Clear.]

Odor : Mild.

Color : Brown. [Dark]

Emergency overview : DANGER!

FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flashback. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Corrosive to the respiratory system.

Ingestion : Toxic if swallowed. May cause burns to mouth, throat and stomach.

Skin : Corrosive to the skin. Causes burns.

2 . Hazards identification

Eyes : Corrosive to eyes. Causes burns.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Target organs : Contains material which may cause damage to the following organs: kidneys, the nervous system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptoms

Inhalation : respiratory tract irritation, coughing

Ingestion : stomach pains

Skin : pain or irritation, redness, dryness, cracking, blistering may occur

Eyes : pain, watering, redness

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Ethylene Glycol	107-21-1	30 - 60
Glycerine	56-81-5	10 - 30
Isopropanol	67-63-0	10 - 30
Amine derivatives	61790-69-0	5 - 10
Alkylpyridine	68391-11-7	1 - 5
Didecyl dimethyl ammonium chloride	7173-51-5	1 - 5
Fatty acids	73138-54-2	1 - 5
Naphthenic acids	1338-24-5	1 - 5
Ethanol	64-17-5	0.1 - 1
1,2,4-Trimethylbenzene	95-63-6	0.1 - 1

4 . First aid measures

Eye contact : Get medical attention immediately. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open.

Skin contact : Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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. Wear suitable protective clothing and gloves. Remove contaminated clothing and shoes.

5 . Fire-fighting measures

Flammability of the product : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : 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.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides,halogenated compounds

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.

6 . Accidental release measures

Personal precautions : 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 (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) 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). Use spark-proof tools and explosion-proof equipment. 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.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). 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.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	**List name**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**ppm**	**mg/m³**	**Other**	**Notations**
Glycerine	US ACGIH	-	10	-	-	-	-	-	-	-	[a]
	OSHA PEL	-	5	-	-	-	-	-	-	-	[b]
	OSHA PEL	-	15	-	-	-	-	-	-	-	[c]
	OSHA PEL 1989	-	5	-	-	-	-	-	-	-	[b]
	OSHA PEL 1989	-	10	-	-	-	-	-	-	-	[c]
Ethylene Glycol	US ACGIH	-	-	-	-	-	-	-	100	-	[d]
	OSHA PEL 1989	-	-	-	-	-	-	50	125	-	
Isopropanol	US ACGIH	200	-	-	400	-	-	-	-	-	
	OSHA PEL	400	980	-	-	-	-	-	-	-	
	OSHA PEL 1989	400	980	-	500	1225	-	-	-	-	
Ethanol	US ACGIH	-	-	-	1000	-	-	-	-	-	
	OSHA PEL	1000	1900	-	-	-	-	-	-	-	
	OSHA PEL 1989	1000	1900	-	-	-	-	-	-	-	
1,2,4-Trimethylbenzene	US ACGIH	25	123	-	-	-	-	-	-	-	
	OSHA PEL 1989	25	125	-	-	-	-	-	-	-	

Form: [a]Mist [b]Respirable fraction [c]Total dust [d]Aerosol

Consult local authorities for acceptable exposure limits.

Only components of this product with established exposure limits appear in the box above.

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.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : 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. Use explosion-proof ventilation equipment.

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. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before re-use.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant gloves: Neoprene gloves.

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

Skin : Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

Physical state	:	Liquid. [Clear.]
Flash point	:	Closed cup: 28°C (82.4°F) [Cleveland Open Cup]
Auto-ignition temperature	:	Not available.
Flammable limits	:	Not available.
Color	:	Brown. [Dark]
Odor	:	Mild.
pH	:	7.3
	:	in IPA/water
Boiling/condensation point	:	Not available.
Initial Boiling Point	:	Not available.
Melting/freezing point	:	Not available.
Relative density	:	1.033 (25°C)
Density	:	8.57 (lbs/gal)
Vapor density	:	<1 [Air = 1]
Odor threshold	:	Not available.
Evaporation rate	:	Not available.
VOC	:	Not available.
Viscosity	:	Not available.
Solubility (Water)	:	Dispersible
Vapor pressure	:	Not available.
Pour Point	:	Not available.
Partition coefficient (LogKow)	:	Not available.

10 . Stability and Reactivity

Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization 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.
Materials to avoid	:	Reactive or incompatible with the following materials: oxidizing materials, organic 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.
Conditions of reactivity	:	Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure

11 . Toxicological information

Didecyl dimethyl ammonium chloride	LD50 Dermal	Rabbit	4177 mg/kg	-
	LD50 Oral	Rat	560 mg/kg	-
	LD50 Oral	Rat	84 mg/kg	-
Glycerine	LD50 Dermal	Rabbit	>10000 mg/kg	-
	LD50 Oral	Rabbit	27 gm/kg	-
	LD50 Oral	Rat	12600 mg/kg	-
Alkylpyridine	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	1400 mg/kg	-
	LC50 Inhalation Vapor	Rat	>45.8 mg/L	2.5 hours
Ethylene Glycol	LD50 Dermal	Rabbit	9530 uL/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LD50 Oral	Female rat	4000 mg/kg	-
Isopropanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rabbit	6410 mg/kg	-
	LD50 Oral	Rat	5045 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LD50 Oral	Male rat	4710 mg/kg	-
	LC50 Inhalation Vapor	Rat - Female	19000 ppm	8 hours
	LC50 Inhalation Gas.	Rat	16000 ppm	8 hours
	LC50 Inhalation Vapor	Rat	12000 ppm	8 hours
Ethanol	LD50 Oral	Rat	7 g/kg	-
	LD50 Oral	Rat	7060 mg/kg	-
	LD50 Oral	Rabbit	6300 mg/kg	-
	LC50 Inhalation Vapor	Rat	20000 ppm	10 hours
	LC50 Inhalation Gas.	Rat	20000 ppm	10 hours
Naphthenic acids	LD50 Oral	Rat	3 g/kg	-
1,2,4-Trimethylbenzene	LD50 Oral	Rat	5 gm/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m3	4 hours

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethylene Glycol	A4	-	-	-	-	-
Isopropanol	A4	3	-	-	-	-

Chronic toxicity Remarks

1) Ethylene Glycol

Ethylene glycol (EG) is a component of this product. Chronic ingestion has shown to cause adverse kidney, liver, bladder, and blood effects in laboratory animals (NTP Technical Report, 1993; Fund. Appl. Toxicol. 7:547-65; FD Cosmet Toxicol. Vol. 3:229-34; Drug and Chem Toxicol 13(1):43-70). Also, chronic ingestion has caused adverse effect on the sperm (decreased motility and increased percentage of abnormal sperm) in laboratory animals. [Morrissey, R.E. et al, 1988, Fund Appl Toxicol, 11(2), pp 359-71]

Ingestion of ethylene glycol has produced Central Nervous System depression, effects on the cardiopulmonary system, and neurological impairment. [Gosselin, R.E., Smith, R.P., and Hodge, H.C., 1984, Clinical Toxicology of Commercial Products; NTP Techical Report 413, 1993; CCOHS CHEMINFO, 2003, Record No. 41 for ethylene glycol; Mallya, K.B. et al, 1986, J Neurol Sce, 13(4) pp 340-41; Anderson, B. , 1990, Am J. Med, 88, pp 87-88]

EG is an animal teratogen at doses which produced mild toxicity to the mother. EG given at doses up to 5,000 mg/kg/day to pregnant rats or up to 3,000 mg/kg/day to mice induced a wide variety of fetal malformations, including those of the musculoskeletal, bone marrow, and spleen (RTECS, 1996). It was also a teratogen and an embryotoxin at doses producing no toxicity to the mother in laboratory animals. (Lamb, J.C. et al, 1985, Toxicol Appl Pharmacol, 81, p 100 and Price, C.J. et

11 . Toxicological information

al, 1985, Appl Pharmacol, 81, pp113-27)

Ethylene glycol is used to cryopreserve embryos of many mammalian species, including pigs, goats, cows and horses (Otoi et al, 1995; Fieni et al, 1995; Hochi et al, 1994). This makes it unlikely that ethylene glycol itself is the active teratogen in whole animal studies. The EG metabolite, glycolic acid, was active in contrast to EG itself for inducing developmental defects in whole rat embryos in culture (Carney et al, 1996). EG inhibited metabolic cooperation of Chinese hamster cells in vitro, a finding which may have implications for its mechanism of teratogenicity (Loch-Caruso et al, 1984).

2) Glycerine

Glycerin is a component of this product. When given to rats at a concentration of 5 percent in the drinking water for 6 months, glycerin caused calcification in the renal tubules (excess calcium accumulation in the tubes of the kidneys) (Anderson et al, 1950). In another rat drinking water study, it increased urinary levels of oxalic acid (Haag & Ambrose, 1937).

Rats given high levels of glycerin in the diet (30 to 60%) had slower reproduction (Whitlock et al, 1944), but this was probably because of caloric imbalance rather than a specific effect of glycerin. Glycerin suppressed sperm production in rats when injected directly into the testes (Weinbauer et al, 1985; Wiebe & Barr, 1984). When given orally to male rats at a dose of 100 mg/kg, it had no effect on fertility (Hahn, 1970).

3) Isopropanol

Isopropanol is a component of this product. Ingestion has produced hyperglycemia (high blood sugar) in humans (Lacouture, P, et al, 1983, "American Journal of Medicine" and Chan K-M, et al, 1993, "Clinical Chemistry"). Also, ingestion can produce Central Nervous System effects and gastointestinal symptoms. [IPCS (1990) Environmental Health Criteria 103: 2-propanol. International Program on Chemical Safety, WHO Geneva.]

In a four month study, inhalation of isopropanol vapors for 20 hours per week by laboratory animals produced bronchitis, pneumonia, and blood effects (International Program of Chemical Safety, 1990, Environmental Health Criteria 103: 2-propanol, World Health Organization). Ataxia (a jerky or shaky movement that occurs during voluntary muscle movement) and microscopic hyaline droplets (fungal or branched structures) in the kidneys were seen in rats exposed to isopropanol at concentrations up to 5000 ppm for 6 hours per day, 5 days per week, for 13 weeks (Burleighflayer et al, 1994). Inhalation of high levels of isopropanol (4,000 and 8,000 ppm for 8 hours) has produced congestion in the liver, lungs, and spleen of laboratory animals (Laham S, et al, 1980, "Drug and Chemical Toxicology).

Oral and inhalation animal studies isopropanol has been shown to cause fetotoxic and reproductive effects at levels which did not show any maternal toxicity. These effects include reductions in fetal litter weight, reductions in live births and significant skeletal malformations in rats. [Nelson, BK et al (1988), Food and Chemical Toxicology, 26(3), pps 247-254], [Tyl, R.W. et al (1994), Fundamental and Applied Toxicoology, 22, pps 139-151], [Bevan, C., et al (1995), Journal of Applied Toxicology, 15(2), pps 117-123. Chronic inhalation has produced testicular effects in laboratory animals. (Kapp, Jr., R.W., et al, 1996, Regulatory Toxicology and Pharmacology 23:183-192, and Burleigh-Flayer, H., et al, 1997, Fundamental and Applied Toxicology: 36:95-111)

4) Amine derivatives

Not available.

5) Alkylpyridine

Alkyl pyridines are components of this product. Repeated exposure to alkyl pyridines may cause liver and central nervous system effects.

6) Didecyl dimethyl ammonium chloride

Not available.

7) Fatty acids

Not available.

8) Naphthenic acids

11 . Toxicological information

Not available.

9) Ethanol

Ethanol is a component of this product. Inhalation exposure to an airborne concentration of 14 to 28 mg/L over a 10 day period was sufficient to produce chemical dependence in rats (Ferko & Bobyock, 1977); 1.4 mg/L for 1 to 2 weeks produced dependency in rats, although blood alcohol levels could not be detected (French & Morris, 1972). Chronic exposures are well known to produce ethanol tolerance in mice (Grieve & Littleton, 1978) and humans. Tolerance may follow a "wave-like" pattern with time in attempts to correlate blood alcohol levels with performance or behavioral effects (Pavienko & Guseva, 1973). Ethanol is mainly metabolized in the liver, which is also one of the primary target organs. While ethanol is well known to cause cirrhosis of the liver in alcoholics, liver cirrhosis has also been produced in rabbits exposed by inhalation (Clayton & Clayton, 1994). Other effects of chronic exposures involve the heart, with progressive dysfunction, congestive cardiomyopathy (disease of the muscular tissues of the heart) , and arrhythmias (irregular heart beat) (HSDB). Occupational exposure to ethanol has been linked with an increased risk for ischemic heart disease (reduced blood flow to the heart usually due to a blockage in the arteries) in rubber workers who were also exposed to other chemicals (Wilcosky & Tyroler, 1983).

Ethanol should be regarded as a possible human co-carcinogen. Ethanol was not carcinogenic when applied to the skin of mice, but did increase the activity of other known carcinogens (Stenback, 1969; Barauskaite, 1983; Hills & Venable, 1982; Radike et al, 1977). Ethanol has been called an equivocal tumorigenic agent when given orally (or rectally) to mice (HSDB). NTP is conducting a two year study at this time, but results were not available for review (LOLI).

Ethanol has also been widely studied for genetic effects in many species. The genetic effects of ethanol have been reviewed (Obe & Ristow, 1979). Increased single-strand DNA breaks were seen in rat brain cells 4 hours after a single oral exposure to 4 g/kg ethanol (Singh et al, 1995). Ethanol itself is not mutagenic in the Ames test, but its metabolite, acetaldehyde, is mutagenic (Obe, 1981). Ethanol did not increase the mutagenicity of diesel exhaust when used as a fuel extender (Clark et al, 1984). Ethanol has been reported to damage the chromosomes in mammalian cells and to induce a variety of genetic effects in micro-organisms (RTECS, 1996). These effects may have been due to the metabolite, acetaldehyde.

The effects of ethanol on the fetus have been reviewed (Brien & Smith, 1991). Ethanol can affect male fertility and produce reduced birth weight in newborns through paternal exposure, but is not known to be teratogenic through the father (Pearn, 1983). Ethanol inhibited the production of testosterone when given to male rats at 1,000 ppm (the TLV) (Cameron et al, 1985), and this effect may be due to its metabolite, acetaldehyde (Santucci et al, 1983; Cicero & Bell, 1980). Ethanol does not seem to affect fertility in female rats (Berliner, 1977); however, there is not sufficient evidence in women to allow a definite conclusion about ethanol and female fertility. Ethanol ingestion by pregnant women is well known to be causative for Fetal Alcohol Syndrome (FAS) (Ashley; 1981, Sokol, 1981; Wright & Toplis, 1986). Fetal alcohol syndrome is characterized by low birth weight, low IQ, slow growth, certain facial abnormalities, CNS defects, and other major or minor structural malformations (Rosett et al, 1983).

10) 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; Battig 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 (Battig 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; Doroty 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).

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).

12 . Ecological information

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Contains: Isopropanol, Naphthenic acids)	3 (8)	III		-
TDG Classification	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Contains: Isopropanol, Naphthenic acids)	3 (8)	III		-
IMDG Class	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Contains: Isopropanol, Naphthenic acids)	3 (8)	III		**Emergency schedules (EmS)** F-E S-C

PG* : Packing group

DOT Reportable Quantity Ethylene Glycol, 1531 gal of this product.
Naphthenic acids, 1151 gal of this product.

Marine pollutant Not applicable.

North-America NAERG : 132

15 . Regulatory information

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).
Class E: Corrosive material

Canada (CEPA DSL): : All components are listed or exempted.

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

Canadian NPRI : The following components are listed: Ethylene glycol; Isopropyl alcohol

United States inventory (TSCA 8b) : All components are listed or exempted.

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 313

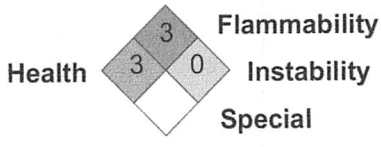
Supplier notification :

Product name	CAS number	Concentration
Ethylene Glycol	107-21-1	30 - 60

16 . Other information

Label requirements : FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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



Date of printing : **2/19/2010.**

Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this MSDS 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 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.