



## Humectant

### Frigid Fluid Company

Chemwatch: 5180-29

Version No: 3.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 01/06/2015

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Initial Date: Not Available

S.GHS.USA.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	Humectant
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified uses	Use according to manufacturer's directions.
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### Details of the manufacturer/importer

Registered company name	Frigid Fluid Company
Address	11631 W Grand Ave Melrose Park 60164 IL United States
Telephone	+1 708-836-1215
Fax	Not Available
Website	Not Available
Email	Not Available

### Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1-800-424-9300
Other emergency telephone numbers	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.



GHS Classification	Flammable Liquid Category 4, Serious Eye Damage Category 1, Skin Sensitizer Category 1
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### Label elements

GHS label elements	
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SIGNAL WORD	DANGER
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### Hazard statement(s)

H227	Combustible liquid
H318	Causes serious eye damage
H317	May cause an allergic skin reaction

### Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P261</b>	Avoid breathing dust/fume/gas/mist/vapours/spray.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.

### Precautionary statement(s) Response

<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P310</b>	Immediately call a POISON CENTER/doctor/physician/first aider
<b>P363</b>	Wash contaminated clothing before reuse.
<b>P370+P378</b>	In case of fire: Use water spray/fog for extinction.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap
<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice/attention.

### Precautionary statement(s) Storage

<b>P403+P235</b>	Store in a well-ventilated place. Keep cool.
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### Precautionary statement(s) Disposal

<b>P501</b>	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

CAS No	%[weight]	Name
8012-95-1.	10-20	<u>paraffin oils</u>
102-71-6	<10	<u>triethanolamine</u>
111-42-2	<5	<u>diethanolamine</u>
	balance	Ingredients determined not to be hazardous

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

	<ul style="list-style-type: none"> <li>▶ Water spray or fog.</li> <li>▶ Foam.</li> <li>▶ Dry chemical powder.</li> <li>▶ BCF (where regulations permit).</li> <li>▶ Carbon dioxide.</li> </ul>
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### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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### Advice for firefighters

<b>Fire Fighting</b>	▶ Alert Fire Brigade and tell them location and nature of hazard.
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	<ul style="list-style-type: none"> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul>

## SECTION 6 ACCIDENTAL RELEASE MEASURES

## Personal precautions, protective equipment and emergency procedures

<b>Minor Spills</b>	<p>Slippery when spilt.</p> <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> </ul>
<b>Major Spills</b>	<p>Slippery when spilt. Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> </ul>

## Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<p><b>CARE:</b> Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.</p> <ul style="list-style-type: none"> <li>▶ Avoid contact with copper, aluminium and their alloys.</li> <li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> <li>▶ Avoid reaction with oxidising agents</li> </ul>

## PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	paraffin oils	Oil mist, mineral	5 mg/m3	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	paraffin oils	Mineral oil, excluding metal working fluids - Pure, highly and severely refined / Mineral oil, excluding metal working fluids - Poorly and mildly refined	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
US NIOSH Recommended Exposure Limits (RELs)	paraffin oils	Heavy mineral oil mist, Paraffin oil mist, White mineral oil mist	5 mg/m3	10 mg/m3	Not Available	Not Available

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US ACGIH Threshold Limit Values (TLV)	triethanolamine	Triethanolamine	5 mg/m3	Not Available	Not Available	TLV® Basis: Eye & skin irr; BEIA
US ACGIH Threshold Limit Values (TLV)	diethanolamine	Diethanolamine	1 mg/m3	Not Available	Not Available	TLV® Basis: Liver & kidney dam
US NIOSH Recommended Exposure Limits (RELs)	diethanolamine	DEA; Di(2-hydroxyethyl)amine; 2,2'-Dihydroxydiethylamine; Diolamine; bis(2-Hydroxyethyl)amine; 2,2'-Iminodiethanol	15 mg/m3 / 3 ppm	Not Available	Not Available	Not Available

## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
paraffin oils	Mineral oil; (Oil mist, mineral)	10 mg/m3	10 mg/m3	2400 mg/m3
triethanolamine	Triethanolamine; (Trihydroxytriethylamine)	15 mg/m3	51 mg/m3	1100 mg/m3
diethanolamine	Diethanolamine	3 mg/m3	5.1 mg/m3	130 mg/m3

Ingredient	Original IDLH	Revised IDLH
paraffin oils	Not Available	Not Available
triethanolamine	Not Available	Not Available
diethanolamine	Not Available	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>
<b>Thermal hazards</b>	Not Available

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
PVA	C

## Respiratory protection

Type AEK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AEK-AUS P2	-	AEK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AEK-AUS / Class 1 P2	-
up to 100 x ES	-	AEK-2 P2	AEK-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen

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PVC	C
TEFLON	C
VITON	C

cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	Pink coloured liquid with no odour; mixes with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	0.97
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	85 TCC	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Combustible.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	>50
<b>Vapour pressure (kPa)</b>	<2	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

<b>Inhaled</b>	There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Rats exposed to triethanolamine for six hours showed no abnormality.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Ingestion of triethanolamine may cause gastro-intestinal irritation with bleeding, burning or painful sensations in the mouth, throat, chest and abdomen, vomiting and diarrhoea. Animal testing has also shown sluggishness, excessive tear secretion, hairs standing up, unsteady gait, and red/brown discharge on hair around the nose and genitals. Lethal dose in 70 kg man is 560gms.
<b>Skin Contact</b>	There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Skin exposure to triethanolamine may cause slight irritation with itching, local redness, swelling and tissue destruction, sensitisation (in a small proportion of individuals), and reddened blisters. Exposure of animals to toxic levels of triethanolamine may cause sluggishness, unsteady gait, emaciation and

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	discolouration of body organs.
<b>Eye</b>	If applied to the eyes, this material causes severe eye damage.
<b>Chronic</b>	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Repeated application of mildly-treated solvent refined oils (naphthenic and paraffinic) can cause skin tumours, but after severe solvent-refining they do not. Triethanolamine is reported to cause reversible kidney and liver damage but not cancer or foetal toxicity. However, its reaction with nitrites and nitrous acid may produce potent cancer causing agent - N-nitrosodiethanolamine.

Humectant	TOXICITY	IRRITATION
	Not Available	Not Available
paraffin oils	TOXICITY	IRRITATION
	Inhalation (rat) LC50: 2062 ppm/4H <sup>[2]</sup> Oral (rat) LD50: >24000 mg/kg <sup>[2]</sup>	Eye (rabbit): 500 mg moderate Skin (rabbit): 100 mg/24h mild
triethanolamine	TOXICITY	IRRITATION
	dermal (rat) LD50: >18080 mg/kg <sup>[2]</sup>	Eye (rabbit): 0.1 ml -
	Oral (rat) LD50: 5559.6 mg/kg(female) * <sup>[2]</sup>	Eye (rabbit): 10 mg - mild
		Eye (rabbit): 5.62 mg - SEVERE
		minor conjunctival irritation
		minor iritis,
		no corneal injury *
		no irritation *
diethanolamine	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 8342.88 mg/kg <sup>[2]</sup>	Eye (rabbit): 5500 mg - SEVERE
	Oral (rat) LD50: 677.04 mg/kg <sup>[2]</sup>	Eye (rabbit): 0.75 mg/24 hr SEVERE
		Skin (rabbit): 50 mg (open)-mild Skin (rabbit): 500 mg/24 hr-mild
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>PARAFFIN OILS</b>	<p>The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:</p> <ul style="list-style-type: none"> <li>▶ The adverse effects of these materials are associated with undesirable components, and</li> <li>▶ The levels of the undesirable components are inversely related to the degree of processing;</li> <li>▶ Distillate base oils receiving the same degree or extent of processing will have similar toxicities;</li> <li>▶ The potential toxicity of <i>residual base oils</i> is independent of the degree of processing the oil receives.</li> <li>▶ The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.</li> </ul> <p>Unrefined &amp; mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Mutagenicity and carcinogenicity testing of residual oils has been negative, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size. Equivocal tumorigen by RTECS criteria</p>
<b>TRIETHANOLAMINE</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. Lachrymation, diarrhoea, convulsions, urinary tract changes, changes in bladder weight, changes in testicular weight, changes in thymus weight, changes in liver weight, dermatitis after systemic exposure, kidney, ureter, bladder tumours recorded. Equivocal tumorigen by RTECS criteria. Dermal rabbit value quoted above is for occluded patch in male or female animals * Union Carbide</p>
<b>DIETHANOLAMINE</b>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high</p>

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concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases.

Acute Toxicity	⊘	Carcinogenicity	⊘
Skin Irritation/Corrosion	⊘	Reproductivity	⊘
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	⊘
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

Legend: ✓ – Data required to make classification available  
 ✗ – Data available but does not fill the criteria for classification  
 ⊘ – Data Not Available to make classification

## CMR STATUS

CARCINOGEN	paraffin oils	US Environmental Defense Scorecard Suspected Carcinogens	NTP-C
	diethanolamine	US Environmental Defense Scorecard Suspected Carcinogens	NTP-BR
RESPIRATORY	diethanolamine	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Respiratory	X
SKIN	diethanolamine	US ACGIH Threshold Limit Values (TLV) - Skin	US - California Permissible Exposure Limits for Chemical Contaminants - Skin

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

## for lubricating oil base stocks:

**Vapor Pressure** Vapor pressures of lubricating base oils are reported to be negligible. In one study, the experimentally measured vapour pressure of a solvent-dewaxed heavy paraffinic distillate base oil was  $1.7 \times 10^{-4}$  Pa. Since base oils are mixtures of C15 to C50 paraffinic, naphthenic, and aromatic hydrocarbon isomers, representative components of those structures were selected to calculate a range of vapor pressures. The estimated vapor pressure values for these selected components of base oils ranged from  $4.5 \times 10^{-1}$  Pa to  $2 \times 10^{-13}$  Pa. Based on Dalton's Law the expected total vapour pressure for base oils would fall well below minimum levels ( $10^{-5}$  Pa) of recommended experimental procedures.

**Partition Coefficient (log Kow):** In mixtures such as the base oils, the percent distribution of the hydrocarbon groups (i.e., paraffins, naphthenes, and aromatics) and the carbon chain lengths determines in-part the partitioning characteristics of the mixture.

## Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethanolamine	LOW	LOW
diethanolamine	LOW (Half-life = 14 days)	LOW (Half-life = 0.3 days)

## Bioaccumulative potential

Ingredient	Bioaccumulation
triethanolamine	LOW (BCF = 4)
diethanolamine	LOW (BCF = 1)

## Mobility in soil

Ingredient	Mobility
triethanolamine	LOW (KOC = 10)
diethanolamine	HIGH (KOC = 1)

## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>Containers may still present a chemical hazard/ danger when empty.</li> <li>Return to supplier for reuse/ recycling if possible.</li> </ul> Otherwise: <ul style="list-style-type: none"> <li>If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>Where possible retain label warnings and MSDS and observe all notices pertaining to the product.</li> </ul> Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
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## SECTION 14 TRANSPORT INFORMATION

## Labels Required

Marine Pollutant	NO
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Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Continued...

## Humectant

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

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	triethanolamine	Z
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	diethanolamine	Y

## SECTION 15 REGULATORY INFORMATION

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

paraffin oils(8012-95-1.) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Hawaii Air Contaminant Limits", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - Idaho - Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US National Toxicology Program (NTP) 13th Report Part A Known to be Human Carcinogens", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Oregon Permissible Exposure Limits (Z-1)", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "US - Michigan Exposure Limits for Air Contaminants", "US - Alaska Limits for Air Contaminants", "US NIOSH Recommended Exposure Limits (RELs)", "US - Washington Permissible exposure limits of air contaminants", "US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity", "US - Minnesota Permissible Exposure Limits (PELs)", "US - California Proposition 65 - Carcinogens", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory", "US OSHA Permissible Exposure Levels (PELs) - Table Z1"
triethanolamine(102-71-6) is found on the following regulatory lists	"US - California Permissible Exposure Limits for Chemical Contaminants", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "US ACGIH Threshold Limit Values (TLV)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
diethanolamine(111-42-2) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Hawaii Air Contaminant Limits", "US - California Permissible Exposure Limits for Chemical Contaminants", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "US - Michigan Exposure Limits for Air Contaminants", "US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values", "US - Alaska Limits for Air Contaminants", "US NIOSH Recommended Exposure Limits (RELs)", "US - Washington Permissible exposure limits of air contaminants", "US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity", "US - Minnesota Permissible Exposure Limits (PELs)", "US - California Proposition 65 - Carcinogens", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (paraffin oils)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

## Other information

## Ingredients with multiple cas numbers

Name	CAS No
paraffin oils	102819-98-7, 106803-31-0, 115251-26-8, 116357-36-9, 122176-99-2, 146908-77-2, 172307-10-7, 187112-19-2, 188832-17-9, 219686-29-0, 261380-10-3, 331464-54-1, 37231-69-9, 37232-05-6, 37232-06-7, 37232-07-8, 39290-23-8, 39296-25-8, 39355-08-3, 39355-09-4, 39355-35-6, 39464-77-2, 39464-78-3, 50935-85-8, 50935-95-0, 51004-58-1, 51109-96-7, 52012-27-8, 52012-28-9, 53028-74-3, 58391-38-1, 58615-80-8, 60327-80-2, 74870-90-9, 79956-36-8, 8012-95-1., 8015-59-6, 8033-89-4, 8038-04-8, 8039-14-3, 8039-75-6, 8043-78-5, 83046-05-3, 97048-20-9, 99551-14-1

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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