HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

BaraMul™ IE-660

Revision Date: 06-Aug-2014 **Revision Number:** 2

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

1.1. Product Identifier

Product Name BaraMul™ IE-660

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

Recommended Use	Emulsifier
Sector of use	SU2 - Mining, (including offshore industries)
Product category	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific
Process categories	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Skin Corrosion / irritation	Category 2 - (H315)
Serious Eye Damage / Eye Irritation	Category 1 - (H318)
Skin Sensitization	Category 1 - (H317)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

Classification Xi - Irritant.

Risk Phrases
R43 May cause sensitization by skin contact.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P362 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

Contains

Substances	**CAS Number**
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6
Hydrotreated light petroleum distillate	64742-47-8
Ethylene glycol monobutyl ether	111-76-2
Diethylene glycol monobutyl ether	112-34-5

2.3. Other Hazards
None known

SECTION 3: Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	Not applicable	57635-48-0	30 - 60%	Xi; R38-41	Skin Irrit. 2 (H315) Eye Dam.1 (H318)	No data available

Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	273-601-0	68990-47-6	30 - 60%	Xi; R43	Skin Sens. 1 (H317)	01-2119496070-42
Hydrotreated light petroleum distillate	265-149-8	64742-47-8	10 - 30%	Xn; R65 R67	STOT-SE 3 (H336) Asp. Tox. 1 (H304)	01-2119484819-18
Ethylene glycol monobutyl ether	203-905-0	111-76-2	1 - 5%	Xn; R20/21/22 Xi; R36/38	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	01-2119475108-36
Diethylene glycol monobutyl ether	203-961-6	112-34-5	1 - 5%	Xi; R36	Eye Irrit. 2 (H319)	01-2119475104-44

For the full text of the R-phrases mentioned in this Section, see Section 16

3.1. Substances Not applicable
3.2. Mixtures Mixture

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

4.2. Most Important symptoms and effects, both acute and delayed

May cause irreversible eye damage. May cause skin irritation. May cause allergic skin reaction. May be harmful if swallowed. May be harmful if inhaled

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing mist. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store in a cool, dry location. Store in a well ventilated area. Store locked up.

7.3. Specific End Use(s)

Exposure Scenario Please refer to the attached Annex for a listing of exposure scenarios.

Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable	STEL: 50 ppm STEL: 246 mg/m³ TWA: 25 ppm TWA: 123 mg/m³	TWA: 100 mg/m³ STEL: 246 mg/m³	2 ppm
Diethylene glycol monobutyl ether	112-34-5	STEL: 15 ppm STEL: 101.2 mg/m³ TWA: 10 ppm TWA: 67.5 mg/m³	STEL: 15 ppm STEL: 101.2 mg/m³ TWA: 10 ppm TWA: 67.5 mg/m³	TWA: 50 mg/m³ STEL: 100 mg/m³	10 ppm

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³ MAK: 10 ppm MAK: 49 mg/m³	50 ppm VLA-EC; 245 mg/m³ VLA-EC VLA-ED: 20 ppm VLA-ED: 98 mg/m³	TWA: 20 ppm	STEL: 50 ppm STEL: 250 mg/m³ TWA: 20 ppm TWA: 98 mg/m³
Diethylene glycol monobutyl ether	112-34-5	TWA: 100 mg/m³ MAK: 10 ppm MAK: 67 mg/m³	15 ppm VLA-EC; 101.2 mg/m³ VLA-EC VLA-ED: 10 ppm VLA-ED: 67.5 mg/m³	Not applicable	TWA: 10 ppm TWA: 68 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway

Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 75 mg/m³ TWA: 10 ppm TWA: 50 mg/m³
Diethylene glycol monobutyl ether	112-34-5	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 102 mg/m³ TWA: 10 ppm TWA: 68 mg/m³

Substances	**CAS Number**	**Italy**	**Poland**	**Hungary**	**Czech Republic**
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol monobutyl ether	111-76-2	STEL: 50 ppm STEL: 246 mg/m³ TWA: 20 ppm TWA: 98 mg/m³	NDSCh: 200 mg/m³ NDS: 98 mg/m³	TWA: 98 mg/m³ STEL: 246 mg/m³	TWA: 100 mg/m³
Diethylene glycol monobutyl ether	112-34-5	STEL: 15 ppm STEL: 101.2 mg/m³ TWA: 10 ppm TWA: 67.5 mg/m³	NDSCh: 100 mg/m³ NDS: 67 mg/m³	TWA: 67.5 mg/m³ STEL: 101.2 mg/m³	TWA: 100 mg/m³

Substances	**CAS Number**	**Denmark**
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m³
Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm TWA: 67.5 mg/m³

Derived No Effect Level (DNEL)

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	14693 µg/m³	29386 µg/m³	14693 µg/m³	14693 µg/m³	16666 µg/kg bw/day	33332 µg/kg bw/day	1388 µg/cm²	1388 µg/cm²	Not available
Ethylene glycol monobutyl ether	98 mg/m³	663 mg/m³	Not available	246 mg/m³	75 mg/kg bw/day	89 mg/kg bw/day	Not available	Not available	Not available

Diethylene glycol monobutyl ether	67.5 mg/m³	Not available	67.5 mg/m³	101.2 mg/m³	20 mg/kg bw/day	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	3623 µg/m³	7246 µg/m³	3623 µg/m³	3623 µg/m³	8333 µg/kg bw/day	16666 µg/kg bw/day	694 µg/cm²	694 µg/cm²	8333 µg/kg bw/day	16666 µg/kg bw/day	Not available
Ethylene glycol monobutyl ether	49 mg/m³	426 mg/m³	Not available	123 mg/m³	38 mg/kg bw/day	44.5 mg/kg bw/day	Not available	Not available	3.2 mg/kg bw/day	13.4 mg/kg bw/day	Not available
Diethylene glycol monobutyl ether	34 mg/m³	Not available	34 mg/m³	50.6 mg/m³	10 mg/kg bw/day	Not available	Not available	Not available	1.25 mg/kg bw/day	Not available	Not available

Predicted No Effect Concentration (PNEC)

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	0.00217 mg/L	0.000217 mg/L	0.0217 mg/L	1 mg/L	180 mg/kg sediment dw	18 mg/kg sediment dw	Not available	146 mg/kg soil dw	33.34 mg/kg food
Ethylene glycol monobutyl ether	8.8 mg/L	0.88 kg/L	9.1 mg/L	463 mg/L	34.6 mg/kg	3.46 mg/kg	Not available	3.13 mg/kg soil dw	0.02 g/kg food
Diethylene glycol monobutyl ether	1.0 mg/L	0.1 mg/L	3.9 mg/L	200 mg/L	4.0 mg/kg	0.4 mg/kg	Not available	0.4 mg/kg	56 mg/kg food

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator with a dust/mist filter. (A2P2/P3) In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Impervious rubber gloves. Nitrile gloves. Neoprene gloves. Butyl rubber gloves. Use Viton or 4H gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color: Amber
Odor: Mild hydrocarbon
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	3.2
Freezing Point/Range	
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	> 100 °C PMCC
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.929
Water Solubility	No data available
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	210-228 cps @ 25C
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity
Not applicable

10.2. Chemical Stability
Stable

10.3. Possibility of Hazardous Reactions
Will Not Occur

10.4. Conditions to Avoid
Keep away from heat, sparks and flame.

10.5. Incompatible Materials
Strong oxidizers.

10.6. Hazardous Decomposition Products
Oxides of nitrogen. Hydrocarbons. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact May cause severe eye irritation.

Skin Contact May cause an allergic skin reaction. May cause moderate skin irritation.

Ingestion Irritation of the mouth, throat, and stomach. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation

Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9 Z)-9-octadecenyloxy]-	57635-48-0	No data available	No data available	No data available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	> 2020 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available
Hydrotreated light petroleum distillate	64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	5.28 mg/L (Rat) 4h
Ethylene glycol monobutyl ether	111-76-2	470 mg/kg (Rat) 1414 mg/kg (Guinea pig) 1746 mg/kg (Rat) 320 mg/kg (Rabbit) 530 mg/kg (Rat) 560 mg/kg (Rat) 3000 mg/kg (Rat) 2400 (Rat)	220 mg/kg (Rabbit) 2270 mg/kg (Rat) 200 mg/kg (Guinea pig) >2000 mg/kg (Rabbit) 841 mg/kg (Rabbit) 435 mg/kg (Rabbit) >2000 mg/kg (Guinea pig) >2000 mg/kg (Rat) 100 mg/kg (Rabbit) 207 mg/kg (Guinea pig) 400-500 mg/kg (Rabbit)	450 ppm (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 ppm (Rat) 4h 925 ppm (Rat) 4h >633 ppm (Guinea pig) 1h
Diethylene glycol monobutyl ether	112-34-5	3384 mg/kg (Rat) 6560 mg/kg (Rat) 5660 mg/kg (Rat) 2406 mg/kg (Mouse) 2000 mg/kg (Guinea pig)	2700 mg/kg (Rabbit) 2764 mg/kg (Rabbit)	No data available

Substances	**CAS Number**	**Skin corrosion/irritation**
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the skin
Hydrotreated light petroleum distillate	64742-47-8	Non-irritating to the skin
Ethylene glycol monobutyl ether	111-76-2	Causes moderate skin irritation. (rabbit)
Diethylene glycol monobutyl ether	112-34-5	Mild skin irritation (rabbit)

Substances	**CAS Number**	**Eye damage/irritation**
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the eye
Hydrotreated light petroleum distillate	64742-47-8	Non-irritating to the eye
Ethylene glycol monobutyl ether	111-76-2	Causes moderate eye irritation. (rabbit)
Diethylene glycol monobutyl ether	112-34-5	Causes moderate eye irritation. (rabbit)

Substances	**CAS Number**	**Skin Sensitization**
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Skin sensitizer in guinea pig.
Hydrotreated light petroleum distillate	64742-47-8	Did not cause sensitization on laboratory animals (guinea pig)
Ethylene glycol monobutyl ether	111-76-2	Did not cause sensitization on laboratory animals (guinea pig)
Diethylene glycol monobutyl ether	112-34-5	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No information available
Hydrotreated light petroleum distillate	64742-47-8	No information available
Ethylene glycol monobutyl ether	111-76-2	No information available
Diethylene glycol monobutyl ether	112-34-5	No information available

Substances	CAS Number	Mutagenic Effects
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	In vivo tests did not show mutagenic effects.
Hydrotreated light petroleum distillate	64742-47-8	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Ethylene glycol monobutyl ether	111-76-2	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Diethylene glycol monobutyl ether	112-34-5	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Did not show carcinogenic effects in animal experiments
Hydrotreated light petroleum distillate	64742-47-8	The full refining history is known and it can be shown that the production substance is not carcinogen, therefore the classification as a carcinogen need not apply.
Ethylene glycol monobutyl ether	111-76-2	Not regarded as carcinogenic.
Diethylene glycol monobutyl ether	112-34-5	No information available.

Substances	CAS Number	Reproductive toxicity
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Animal testing did not show any effects on fertility.
Hydrotreated light petroleum distillate	64742-47-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Ethylene glycol monobutyl ether	111-76-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Diethylene glycol monobutyl ether	112-34-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.
Hydrotreated light petroleum distillate	64742-47-8	May cause headache, dizziness, and other central nervous system effects.

Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.
Diethylene glycol monobutyl ether	112-34-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.
Hydrotreated light petroleum distillate	64742-47-8	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol monobutyl ether	111-76-2	None under normal use conditions
Diethylene glycol monobutyl ether	112-34-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Ethylene glycol monobutyl ether	111-76-2	No adverse health effects are expected from swallowing.
Diethylene glycol monobutyl ether	112-34-5	Not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	EC50 (72 h): 25.21 mg/L (Skeletonema costatum)	EC50 (96 h): 29.25 mg/L (Scopthalmus maximus) NOEC (10d): 416.78 mg/kg (Corophium volutator)	No information available	EC50 (48 h): 597.37 mg/L (Acartia tonsa)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	EC50(72h): > 100 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): > 100 mg/L (Danio rerio)	EC50(3h): > 100 mg/L (respiration rate) (Activated sludge)	IC50(48h): > 100 mg/L (Daphnia magna)
Hydrotreated light petroleum distillate	64742-47-8	EC50(72h): > 10,000 mg/L (Skeletonema costatum) (ISO 10253)	LC50(96h): > 10,000 mg/L (Scophthalmus maximus) (OSPARCOM 1995)	No information available	LC50(48h): > 10,000 mg/L (Acartia tonsa) (ISO 14669) EC50(48h): 1100 mg/L (mobility) (Daphnia pulex)

Ethylene glycol monobutyl ether	111-76-2	EC50: 839.56 mg/l (Skeletonema costatum) EC50(72h): 911 mg/L (biomass) EC50: > 500 mg/l (Scenedesmus subspicatus) NOEC(72h): 88 mg/L (biomass)(Pseudokirchnerella subcapitata)	LC50: > 1000 mg/l (Scophthalmus maximus juvenile) LC50(96h): 1474 mg/L (Oncorhynchus mykiss) NOEC(21d): > 100mg/L (Danio rerio)	TT/EC3(48h): 463 mg/L (Uronema parduzci) TT/EC3(72h): 73 mg/L (Entosiphon sulcatum) TT/EC3(16h): 700 mg/L (Pseudomonas putida)	EC50: >1000 mg/L (Daphnia magna) EC50 (48h): 1800 mg/L (Daphnia magna) EC50: 1875 mg/l (Daphnia magna) NOEC(21d)(reproduction): 100 mg/L (Daphnia magna)
Diethylene glycol monobutyl ether	112-34-5	EC50: > 100 mg/L (Desmodesmus subspicatus)	LC50: 1300 mg/L (Lepomis macrochirus)	EC10: >1995 mg/L (Activated sludge, industrial)	EC50: > 100 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	Readily biodegradable (83% @ 28d)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Readily biodegradable (71% @ 28d)
Hydrotreated light petroleum distillate	64742-47-8	Readily biodegradable (87% @ 28d)
Ethylene glycol monobutyl ether	111-76-2	Readily biodegradable (75-88% @ 28d)
Diethylene glycol monobutyl ether	112-34-5	Readily biodegradable (71% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Poly(oxy-1,2-ethanediyl), a-(carboxymethyl)-w-[(9Z)-9-octadecenyloxy]-	57635-48-0	No information available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	2.4
Hydrotreated light petroleum distillate	64742-47-8	7.5
Ethylene glycol monobutyl ether	111-76-2	0.81
Diethylene glycol monobutyl ether	112-34-5	1.0

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6. Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations

13.1. Waste treatment methods
Disposal Method
Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

SECTION 14: Transport Information

IMDG/IMO
UN Number: Not restricted.

UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

RID

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	Not applicable

ADR

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	Not applicable

IATA/ICAO

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	Not applicable

14.1. UN Number: Not restricted.

14.2. UN Proper Shipping Name: Not restricted

14.3. Transport Hazard Class(es): Not applicable

14.4. Packing Group: Not applicable

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory Information

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

International Inventories

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	Product contains one or more components not listed on the inventory.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 1: Low hazard to waters.

List of the carcinogenic, mutagenic and toxic for reproduction substances SZW
(Complex) petroleum and coal derivatives

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of R-phrases referred to under Sections 2 and 3
R20/21/22 Harmful by inhalation, by contact with skin and if swallowed.
R36 - Irritating to eyes
R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.

Full text of H-Statements referred to under sections 2 and 3
H317 - May cause an allergic skin reaction
H336 - May cause drowsiness or dizziness
H304 - May be fatal if swallowed and enters airways
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H318 - Causes serious eye damage

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

Revision Date: 06-Aug-2014
Revision Note
Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet