

## SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

### DCA-32008

Revision Date: 16-Apr-2015

Revision Number: 4

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

##### 1.1. Product Identifier

Product Name DCA-32008

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

Recommended Use Cleaner

##### 1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services  
Halliburton House, Howemoss Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

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

[www.halliburton.com](http://www.halliburton.com)

For further information, please contact

E-Mail address: [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)

##### 1.4. Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
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
Romania	+40 21 318 36 06
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
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Chronic Aquatic Toxicity	Chronic 2 - H411

**2.2. Label Elements****Hazard Pictograms****Signal Word****Danger****Hazard Statements**

H315 - Causes skin irritation

H318 - Causes serious eye damage

H373 - May cause damage to organs through prolonged or repeated exposure

H411 - Toxic to aquatic life with long lasting effects

**Precautionary Statements - EU (§28, 1272/2008)**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/eye protection/face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

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

P501 - Dispose of contents/container to an approved waste disposal plant

**Contains****Substances**

Ethylene glycol monobutyl ether

Poly(oxy-1,2-ethanediyl),

alpha-hexyl-omega-hydroxy(C<sub>2</sub>H<sub>4</sub>O)<sub>N</sub>(C<sub>6</sub>H<sub>14</sub>O)

2-Ethyl hexanol

Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-

Ethylene glycol

Methanol

**CAS Number**

111-76-2

31726-34-8

104-76-7

9016-45-9

107-21-1

67-56-1

**2.3. Other Hazards**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients****3.2. Mixtures**

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Ethylene glycol monobutyl ether	203-905-0	111-76-2	30 - 60%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	01-2119475108-36
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	500-077-5	31726-34-8	30 - 60%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Aquatic Chronic 2 (H411)	No data available
2-Ethyl hexanol	203-234-3	104-76-7	10 - 30%	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	No data available
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	500-024-6	9016-45-9	5 - 10%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Aquatic Chronic 2 (H411)	No data available

Ethylene glycol	203-473-3	107-21-1	1 - 5%	Acute Tox. 4 (H302) STOT RE 1 (H372)	01-2119456816-28
Methanol	200-659-6	67-56-1	0.1 - 1%	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Repr. 1 (H360) Flam. Liq. 2 (H225)	No data available

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>Inhalation</b>	If inhaled, move victim to fresh air and seek medical attention.
<b>Eyes</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
<b>Skin</b>	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.
<b>Ingestion</b>	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

Causes serious eye damage. Causes skin irritation. May be harmful if swallowed. Potential reproductive hazard.

### 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**

None known.

### 5.2. Special hazards arising from the substance or mixture

#### **Special Exposure Hazards**

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

### 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

Remove sources of ignition. Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. 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. 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

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Wash hands after use. Avoid breathing vapors. Ensure adequate ventilation. Do NOT consume food, drink, or tobacco in contaminated areas. Launder contaminated clothing before reuse. Use appropriate protective equipment.

### 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. Store in a dry location. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store at temperatures between 50 and 100 F (10 and 37.8 C). Do not freeze. Product has a shelf life of 24 months.

### 7.3. Specific End Use(s)

**Exposure Scenario** No information available

**Other Guidelines** No information available

## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

#### Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Ethylene glycol monobutyl ether	111-76-2	Not applicable	TWA: 25 ppm TWA: 123 mg/m <sup>3</sup> STEL: 50 ppm STEL: 246 mg/m <sup>3</sup>	TWA: 100 mg/m <sup>3</sup> STEL: 246 mg/m <sup>3</sup>	2 ppm
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable	Not applicable	Not applicable	Not applicable
2-Ethyl hexanol	104-76-7	Not applicable	Not applicable	270 mg/m <sup>3</sup>	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	Not applicable	TWA: 10 mg/m <sup>3</sup> TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup> STEL: 30 mg/m <sup>3</sup>	TWA: 52 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> STEL: 104 mg/m <sup>3</sup>	20 ppm
Methanol	67-56-1	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 266 mg/m <sup>3</sup> STEL: 250 ppm STEL: 333 mg/m <sup>3</sup>	TWA: 133 mg/m <sup>3</sup> TWA: 100 ppm	200 ppm

Substances	CAS Number	Germany	Spain	Portugal	Finland
Ethylene glycol monobutyl ether	111-76-2	TWA: 10 ppm TWA: 49 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> 50 ppm STEL [VLA-EC]; 245 mg/m <sup>3</sup> STEL [VLA-EC]	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL: 50 ppm STEL: 246 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL: 50 ppm STEL: 250 mg/m <sup>3</sup>
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable	Not applicable	Not applicable	Not applicable
2-Ethyl hexanol	104-76-7	TWA: 20 ppm TWA: 110 mg/m <sup>3</sup> TWA: 10 ppm TWA: 54 mg/m <sup>3</sup>	Not applicable	Not applicable	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> 40 ppm STEL [VLA-EC]; 104 mg/m <sup>3</sup> STEL [VLA-EC]	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 50 mg/m <sup>3</sup> STEL: 40 ppm STEL: 100 mg/m <sup>3</sup>
Methanol	67-56-1	TWA: 200 ppm TWA: 270 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 266 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm	TWA: 200 ppm TWA: 270 mg/m <sup>3</sup> STEL: 250 ppm STEL: 330 mg/m <sup>3</sup>

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
------------	------------	---------	---------	-------------	--------

Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL" 40 ppm STEL" 200 mg/m <sup>3</sup>	20 ppm TWA; 98 mg/m <sup>3</sup> TWA 50 ppm STEL; 246 mg/m <sup>3</sup> STEL	TWA: 10 ppm TWA: 49 mg/m <sup>3</sup> STEL: 20 ppm STEL: 98 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup> STEL: 20 ppm STEL: 75 mg/m <sup>3</sup>
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable	Not applicable	Not applicable	Not applicable
2-Ethyl hexanol	104-76-7	TWA: 50 ppm TWA: 270 mg/m <sup>3</sup> STEL" 100 ppm STEL" 540 mg/m <sup>3</sup>	Not applicable	TWA: 20 ppm TWA: 110 mg/m <sup>3</sup> STEL: 20 ppm STEL: 110 mg/m <sup>3</sup>	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m <sup>3</sup> STEL" 20 ppm STEL" 52 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> TWA (particulate); 20 ppm TWA (vapour); 52 mg/m <sup>3</sup> TWA (vapour) 40 ppm STEL; 104 mg/m <sup>3</sup> STEL	TWA: 10 ppm TWA: 26 mg/m <sup>3</sup> STEL: 20 ppm STEL: 52 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 104 mg/m <sup>3</sup> STEL: 40 ppm
Methanol	67-56-1	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL" 800 ppm STEL" 1040 mg/m <sup>3</sup>	200 ppm TWA; 260 mg/m <sup>3</sup> TWA 600 ppm STEL (calculated); 780 mg/m <sup>3</sup> STEL (calculated)	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 800 ppm STEL: 1040 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 130 mg/m <sup>3</sup> STEL: 150 ppm STEL: 162.5 mg/m <sup>3</sup>

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL: 50 ppm STEL: 246 mg/m <sup>3</sup>	TWA: 98 mg/m <sup>3</sup> STEL: 200 mg/m <sup>3</sup>	TWA: 98 mg/m <sup>3</sup> STEL: 246 mg/m <sup>3</sup>	TWA: 100 mg/m <sup>3</sup>
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable	Not applicable	Not applicable	Not applicable
2-Ethyl hexanol	104-76-7	Not applicable	TWA: 160 mg/m <sup>3</sup> STEL: 320 mg/m <sup>3</sup>	Not applicable	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> STEL: 50 mg/m <sup>3</sup>	TWA: 52 mg/m <sup>3</sup> STEL: 104 mg/m <sup>3</sup>	TWA: 50 mg/m <sup>3</sup>
Methanol	67-56-1	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	TWA: 100 mg/m <sup>3</sup> STEL: 300 mg/m <sup>3</sup>	TWA: 260 mg/m <sup>3</sup>	TWA: 250 mg/m <sup>3</sup>

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup>	TWA: 30 ppm TWA: 150 mg/m <sup>3</sup> STEL: 50 ppm STEL: 250 mg/m <sup>3</sup> STEL: 246 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL: 50 ppm STEL: 246 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 98 mg/m <sup>3</sup> STEL: 50 ppm STEL: 246 mg/m <sup>3</sup>
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable	Not applicable	Not applicable	Not applicable
2-Ethyl hexanol	104-76-7	Not applicable	Not applicable	Not applicable	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup>
Methanol	67-56-1	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 5 ppm	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>

**Derived No Effect Level (DNEL)**  
**Worker**

No information available.

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
Ethylene glycol monobutyl ether	98 mg/m <sup>3</sup>	663 mg/m <sup>3</sup>	Not available	246 mg/m <sup>3</sup>	75 mg/kg bw/day	89 mg/kg bw/day	Not available	Not available	Not available
Ethylene glycol	Not available	Not available	35 mg/m <sup>3</sup>	Not available	106 mg/kg bw/day	Not available	Not available	Not available	Not available
Methanol	260 mg/m <sup>3</sup>	260 mg/m <sup>3</sup>	260 mg/m <sup>3</sup>	260 mg/m <sup>3</sup>	40 mg/kg bw/day	40 mg/kg bw/day	Low hazard (no threshold derived)	Low hazard (no threshold derived)	Low hazard (no threshold derived)

**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
Ethylene glycol monobutyl ether	49 mg/m <sup>3</sup>	426 mg/m <sup>3</sup>	Not available	123 mg/m <sup>3</sup>	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
Ethylene glycol	Not available	Not available	7 mg/m <sup>3</sup>	Not available	53 mg/kg bw/day	Not available	Not available	Not available	Not available	Not available	Not available
Methanol	50 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>	8 mg/kg bw/day	8 mg/kg bw/day	Low hazard (no threshold derived)	Low hazard (no threshold derived)	Other toxicological threshold	Other toxicological threshold	Low hazard (no threshold derived)

**Predicted No Effect Concentration (PNEC)**

No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
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
Ethylene glycol	10 mg/L	1 mg/L	10 mg/L	199.5 mg/L	37 mg/kg sediment dw	3.7 mg/kg sediment dw	Not available	1.53 mg/kg soil dw	Not available
Methanol	20.8 mg/L	2.08 mg/L	1540 mg/L	100 mg/L	77 mg/kg sediment dw	7.7 mg/kg sediment dw	Not available	3.18 mg/kg soil dw	Not available

**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**

Organic vapor respirator.

**Hand Protection**

Impervious rubber 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**

Do not allow material to contaminate ground water system

**SECTION 9: Physical and Chemical Properties**

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid  
**Odor:** Solvent

**Color:** White, opaque  
**Odor Threshold:** No information available

**Property**  
**Remarks/ - Method**  
**pH:**

**Values**  
5-7

Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	171 °C / 340 °F
Flash Point	68 °C / 156 °F
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.94
Water Solubility	Dispersable
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	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

**9.2. Other information**

VOC Content (%)	No data available
-----------------	-------------------

<b>SECTION 10: Stability and Reactivity</b>
---

**10.1. Reactivity**

Not expected to be reactive.

**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**

Carbon monoxide and carbon dioxide.

<b>SECTION 11: Toxicological Information</b>
--

**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**

Causes serious eye damage.

**Skin Contact**

Causes skin irritation.

**Ingestion**

May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression. May cause liver and kidney damage.

**Chronic Effects/Carcinogenicity**

Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage. May contain ethylene oxide in the headspace of the drum. Ethylene oxide is a cancer and reproductive hazard. Prolonged or repeated exposure may cause embryo and fetus toxicity.

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation

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 mg/kg (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 mg/L (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 mg/L (Rat) 4h 925 mg/L (Rat) 4h >633 mg/L (Guinea pig) 1h
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	1400 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rabbit) (similar substance)	> 0.22 mg/L (Rat) 4h
2-Ethyl hexanol	104-76-7	5190 µL/kg (Rat)	5660 µL/kg (Rabbit) 2520 mg/kg (Rabbit) 1980 mg/kg (Rabbit) 1970 mg/kg (Rabbit)	227 mg/L (Rat) 6h
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	1310 mg/kg (Rat) 4290-5000 mg/kg (Rat) 4290 mg/kg (Mouse) (similar substance) 510 mg/kg (Rat) > 2500 mg/kg (Rat)	2 mg/kg (Rabbit) 2500 mg/kg (Rabbit) 2830 mg/kg (Rabbit)	> 0.0213 mg/L (Rat)
Ethylene glycol	107-21-1	4000 mg/kg (Rat) 7712 mg/kg (Rat) > 10000 mg/kg (Rat) 1670 mg/kg (Cat) 1400 – 1600 mg/kg (Human)	9530 µL/kg (Rabbit) > 3500 mg/kg (Mouse)	> 2.5 mg/L (Rat) 6h (saturated concentration)
Methanol	67-56-1	> 1187 - 2769 mg/kg (Rat) 3000 mg/kg (Monkey) 300 mg/kg (Human)	15800 mg/kg (Rabbit) 393 mg/kg (Primate)	87.5 mg/L (Rat) 6h 128.2 mg/L (Rat) 4h 83.2 mg/L (Rat) 4h 64000 mg/L (Rat) 4h 10 mg/L (Human)

Substances	CAS Number	Skin corrosion/irritation
Ethylene glycol monobutyl ether	111-76-2	Causes moderate skin irritation. (Rabbit)
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Causes moderate skin irritation. (Rabbit) (similar substances)
2-Ethyl hexanol	104-76-7	Causes moderate skin irritation. (Rabbit)
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Causes skin irritation. (Rabbit)
Ethylene glycol	107-21-1	Non-irritating to the skin (Rabbit)
Methanol	67-56-1	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Ethylene glycol monobutyl ether	111-76-2	Causes moderate eye irritation. (Rabbit)
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Causes severe eye irritation which may damage tissue. (Rabbit) (similar substances)
2-Ethyl hexanol	104-76-7	Causes moderate eye irritation. (Rabbit)
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Causes moderate eye irritation. (Rabbit)
Ethylene glycol	107-21-1	Non-irritating to the eye (Rabbit)
Methanol	67-56-1	Non-irritating to the eye (Rabbit)

Substances	CAS Number	Skin Sensitization
Ethylene glycol monobutyl ether	111-76-2	Did not cause sensitization on laboratory animals (guinea pig)
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
2-Ethyl hexanol	104-76-7	Patch test on human volunteers did not demonstrate sensitization properties
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Did not cause sensitization on laboratory animals (guinea pig) (mouse)

Ethylene glycol	107-21-1	Did not cause sensitization on laboratory animals (guinea pig) Patch test on human volunteers did not demonstrate sensitization properties
Methanol	67-56-1	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Ethylene glycol monobutyl ether	111-76-2	No information available
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	No information available
2-Ethyl hexanol	104-76-7	Did not cause sensitization on laboratory animals
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No information available
Ethylene glycol	107-21-1	No information available
Methanol	67-56-1	No information available

Substances	CAS Number	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
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
2-Ethyl hexanol	104-76-7	In vitro tests did not show mutagenic effects
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	In vivo tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
Ethylene glycol	107-21-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Methanol	67-56-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Ethylene glycol monobutyl ether	111-76-2	Not regarded as carcinogenic.
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Did not show carcinogenic effects in animal experiments (similar substances)
2-Ethyl hexanol	104-76-7	Did not show carcinogenic effects in animal experiments
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Did not show carcinogenic effects in animal experiments (similar substances)
Ethylene glycol	107-21-1	Did not show carcinogenic effects in animal experiments
Methanol	67-56-1	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Ethylene glycol monobutyl ether	111-76-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Animal testing did not show any effects on fertility. (similar substances)
2-Ethyl hexanol	104-76-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No data of sufficient quality are available.
Ethylene glycol	107-21-1	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.
Methanol	67-56-1	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.

Substances	CAS Number	STOT - single exposure
Ethylene glycol monobutyl ether	111-76-2	No significant toxicity observed in animal studies at concentration requiring classification.
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	No data of sufficient quality are available.
2-Ethyl hexanol	104-76-7	May cause respiratory irritation.
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No information available
Ethylene glycol	107-21-1	No information available

Methanol	67-56-1	May cause disorder and damage to the Central Nervous System (CNS) EYES
Substances	CAS Number	STOT - repeated exposure
Ethylene glycol monobutyl ether	111-76-2	No data of sufficient quality are available.
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
2-Ethyl hexanol	104-76-7	No significant toxicity observed in animal studies at concentration requiring classification.
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol	107-21-1	Causes damage to organs through prolonged or repeated exposure if swallowed: (Kidney)
Methanol	67-56-1	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Ethylene glycol monobutyl ether	111-76-2	No adverse health effects are expected from swallowing.
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy (C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	Not applicable
2-Ethyl hexanol	104-76-7	Not applicable
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Not applicable
Ethylene glycol	107-21-1	Not applicable
Methanol	67-56-1	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
Ethylene glycol monobutyl ether	111-76-2	EC50 839.56 mg/L (Skeletonema costatum) EbC50 (72h) 911 mg/L 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) 100 mg/L (Daphnia magna)
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy(C <sub>2</sub> H <sub>4</sub> O) <sub>N</sub> (C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	EC50 (72h) 475.51 mg/L (Skeletonema costatum)	LC50 (96h) >215 mg/L (Scophthalmus maximus) NOEC (30d) 0.28 mg/L (Pimephales promelas) (similar substance)	LC50 (14d) > 1000 mg/kg (Eisenia fetida, soil) (similar substance)	EC50 (48h) 213.24 mg/L (Acartia tonsa) NOEC (21d) 1.75 mg/L (Daphnia magna) (similar substance)
2-Ethyl hexanol	104-76-7	EC50 11.5 mg/L (Desmodesmus subspicatus)	LC50 32-37 mg/L (Oncorhynchus mykiss) LC50 10 - 33 mg/L (Lepomis macrochirus) LC50( 96h) 17.1 mg/L (Leuciscus idus melanotus)	No information available	TLM96 > 10000 mg/l (Crangon crangon) EC50 39 mg/L (Daphnia magna)
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	EC50 (48h) 20 mg/L (growth inhibition) (Pseudokirchnerella subcapitata) EC50 (48h) 50 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50 (96h) 5.6 mg/L (Brachydanio rerio) LC50 (96h) 1.3 mg/L (Lepomis macrochirus) LC50 (96h) 5 mg/L (Danio rerio)	No information available	EC50 (48h) 1.821 mg/L (Daphnia sp.) (QSAR)

Ethylene glycol	107-21-1	EC50 6500 - 13000 mg/L (Pseudokirchneriella subcapitata) TGK (8d) > 10000 mg/L (Scenedesmus quadricauda)	LC50 41000 mg/L (Oncorhynchus mykiss) LC50 (96h) 72860 mg/L (Pimephales promelas) NOEC (7d) 32000 mg/L (mortality) (Pimephales promelas)	TTC (16h) > 10000 mg/L (Pseudomonas putida) EC20 (30 m) > 1995 mg/L (activated sludge, domestic) (similar substance – diethylene glycol)	EC50 46300 mg/L (Daphnia magna) EC50 (48h) >100 mg/L (Daphnia magna) NOEC (7d) 8590 mg/L (reproduction) (Ceriodaphnia dubia)
Methanol	67-56-1	EC50 (96h) 22000 mg/L (Pseudokirchneriella subcapitata, Growth rate)	LC50 28200 mg/L (Pimephales promelas) LC50 (96h) 12700 – 15400 mg/L (Lepomis macrochirus)	IC50 (3h) > 1000 mg/L (activated sludge)	EC50 (96h) 18260 mg/L (Daphnia magna) NOEC (21d) 122 mg/L (Daphnia magna, Reproduction)

## 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Ethylene glycol monobutyl ether	111-76-2	Readily biodegradable (75-88% @ 28d)
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy(C <sub>2</sub> H <sub>4</sub> O)N(C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	(50% @ 28d)
2-Ethyl hexanol	104-76-7	Readily biodegradable (100 @ 14d)
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	Readily biodegradable (98-99% @ 28d)
Ethylene glycol	107-21-1	Readily biodegradable (100% @ 10d)
Methanol	67-56-1	(95-97% @ 20d)

## 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Ethylene glycol monobutyl ether	111-76-2	0.81
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy(C <sub>2</sub> H <sub>4</sub> O)N(C <sub>6</sub> H <sub>14</sub> O)	31726-34-8	BCF = 12.7 L/kg (Pimephales promelas) (similar substance)
2-Ethyl hexanol	104-76-7	2.73 BCF = 25.33
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9	3.7 @ 25°C
Ethylene glycol	107-21-1	-1.36
Methanol	67-56-1	-0.77 BCF = 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)

## 12.4. Mobility in soil

Substances	Mobility
Ethylene glycol monobutyl ether	No information available
Poly(oxy-1,2-ethanediyl), alpha-hexyl-omega-hydroxy(C <sub>2</sub> H <sub>4</sub> O)N(C <sub>6</sub> H <sub>14</sub> O)	No information available
2-Ethyl hexanol	KOC = 26
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	No information available
Ethylene glycol	No information available
Methanol	KOC = 0.13 - 0.61

## 12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	PBT & vPvB
Ethylene glycol	Not PBT/vPvB
Methanol	Not PBT/vPvB

## 12.6. Other adverse effects

### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Substances	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	Group III	Cat. 1

## SECTION 13: Disposal Considerations

### 13.1. Waste treatment methods

#### Disposal Method

#### **Contaminated Packaging**

Disposal should be made in accordance with federal, state, and local regulations. Follow all applicable national or local regulations.

## SECTION 14: Transport Information

### IMDG/IMO

**UN Number:** UN3082  
**UN Proper Shipping Name:** Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Ethoxylated Hexanol, Ethoxylated Nonylphenol)  
**Transport Hazard Class(es):** 9  
**Packing Group:** III  
**Environmental Hazards:** Marine Pollutant

### RID

**UN Number:** UN3082  
**UN Proper Shipping Name:** Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Ethoxylated Hexanol, Ethoxylated Nonylphenol)  
**Transport Hazard Class(es):** 9  
**Packing Group:** III  
**Environmental hazard:** Yes

### ADR

**UN Number:** UN3082  
**UN Proper Shipping Name:** Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Ethoxylated Hexanol, Ethoxylated Nonylphenol)  
**Transport Hazard Class(es):** 9  
**Packing Group:** III  
**Environmental hazard:** Yes  
  
**Environmental hazard:** Yes

### IATA/ICAO

**UN Number:** UN3082  
**UN Proper Shipping Name:** Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Ethoxylated Hexanol, Ethoxylated Nonylphenol)  
**Transport Hazard Class(es):** 9  
**Packing Group:** III  
**Environmental hazard:** Yes

- 14.1. UN Number:** UN3082
- 14.2. UN Proper Shipping Name:** Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Ethoxylated Hexanol, Ethoxylated Nonylphenol)
- 14.3. Transport Hazard Class(es):** 9
- 14.4. Packing Group:** III
- 14.5. Environmental Hazards:** Marine Pollutant
- 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**

All components listed on inventory or are exempt.

**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/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List**Germany, Water Endangering Classes (WGK)**

WGK 2: Hazard to waters.

**15.2. Chemical Safety Assessment**

No information available

**SECTION 16: Other Information****Full text of H-Statements referred to under sections 2 and 3**

H225 - Highly flammable liquid and vapor

H301 - Toxic if swallowed

H302 - Harmful if swallowed

H311 - Toxic in contact with skin

H312 - Harmful in contact with skin

H315 - Causes skin irritation

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H331 - Toxic if inhaled

H332 - Harmful if inhaled

H372 - Causes damage to organs through prolonged or repeated exposure

H373 - May cause damage to organs through prolonged or repeated exposure

H411 - Toxic to aquatic life with long lasting effects

**Key or legend to abbreviations and acronyms**

bw – body weight

CAS – Chemical Abstracts Service

CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EC – European Commission

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL0 – Lethal Loading 0%

LL50 – Lethal Loading 50%

MARPOL – International Convention for the Prevention of Pollution from Ships

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Revision Date:** 16-Apr-2015

**Revision Note**

SDS sections updated 2 3 4 6 7 8 10 11 12 14 16

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

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**