HALLIBURTON

# SAFETY DATA SHEET

**according to Regulation (EC) No. 453/2010**

# SEM-8™ EMULSIFIER

**Revision Date:** 24-Apr-2015 **Revision Number:** 33

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

**1.1. Product Identifier**

**Product Name** SEM-8™ EMULSIFIER

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

**Recommended Use** Emulsifier

**Sector of use** Refer to the Annex for a listing of uses.

**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

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** |
| **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) |

| | |
|---|---|
| Chronic Aquatic Toxicity | Chronic 3 - (H412) |
| Flammable liquids. | Category 3 - (H226) |

### 2.2. Label Elements

**Hazard Pictograms**

**Signal Word** **Danger**

**Hazard Statements**
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements - EU (§28, 1272/2008)**
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
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

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 |
| Isopropanol | 67-63-0 |
| Alcohols, C6-10, ethoxylated | 70879-83-3 |

### 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. |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | Not applicable | 68037-05-8 | 60 - 100% | Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>Aquatic Chronic 3 (H412)<br>Flam. Liq. 3 (H226) | No data available |
| Isopropanol | 200-661-7 | 67-63-0 | 10 - 30% | Eye Irrit. 2 (H319)<br>STOT SE 3 (H336)<br>Flam. Liq. 2 (H225) | 01-2119457558-25 |
| Alcohols, C6-10, ethoxylated | 615-189-0 | 70879-83-3 | 1 - 5% | Acute Tox. 4 (H302)<br>Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 3 (H412) | 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

**Inhalation** If inhaled, move victim to fresh air and seek medical attention.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

**Ingestion** 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.

### 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. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

### 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. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.
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

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. 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. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store in a dry location. Store in a cool well ventilated area. Product has a shelf life of 24 months.

### 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 | Netherlands | France |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | Not applicable | TWA: 400 ppm<br>TWA: 999 mg/m³<br>STEL: 500 ppm<br>STEL: 1250 mg/m³ | Not applicable | STEL: 400 ppm<br>STEL: 980 mg/m³ |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances | CAS Number | Germany | Spain | Portugal | Finland |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | TWA: 200 ppm<br>TWA: 500 mg/m³ | TWA: 200 ppm<br>TWA: 500 mg/m³<br>400 ppm STEL [VLA-EC]; 1000 mg/m³ STEL [VLA-EC] | TWA: 200 ppm<br>STEL: 400 ppm | TWA: 200 ppm<br>TWA: 500 mg/m³<br>STEL: 250 ppm<br>STEL: 620 mg/m³ |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances | CAS Number | Austria | Ireland | Switzerland | Norway |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | TWA: 200 ppm<br>TWA: 500 mg/m³<br>STEL" 800 ppm<br>STEL" 2000 mg/m³ | 200 ppm TWA<br>400 ppm STEL | TWA: 200 ppm<br>TWA: 500 mg/m³<br>STEL: 400 ppm<br>STEL: 1000 mg/m³ | TWA: 100 ppm<br>TWA: 245 mg/m³<br>STEL: 150 ppm<br>STEL: 306.25 mg/m³ |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances | CAS Number | Italy | Poland | Hungary | Czech Republic |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | Not applicable | TWA: 900 mg/m³<br>STEL: 1200 mg/m³ | TWA: 500 mg/m³<br>STEL: 2000 mg/m³ | TWA: 500 mg/m³ |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Not applicable | Not applicable | Not applicable | Not applicable |

| Substances | CAS Number | Denmark | Romania | Croatia | Cyprus |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable | Not applicable | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | TWA: 200 ppm<br>TWA: 490 mg/m³ | TWA: 81 ppm<br>TWA: 200 mg/m³<br>STEL: 203 ppm<br>STEL: 500 mg/m³ | TWA: 400 ppm<br>TWA: 999 mg/m³<br>STEL: 500 ppm<br>STEL: 1250 mg/m³ | Not applicable |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Not applicable | Not applicable | Not applicable | Not applicable |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Isopropanol | 500 mg/m³ | Not available | Not available | Not available | 888 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropanol | 89 mg/m³ | Not available | Not available | Not available | 319 mg/kg bw/day | Not available | Not available | Not available | 26 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 |
|---|---|---|---|---|---|---|---|---|---|
| Isopropanol | 140.9 mg/L | 140.9 mg/L | 140.9 mg/L | 2251 mg/L | 552 mg/kg sediment dw | 552 mg/kg sediment dw | Not available | 28 mg/kg soil dw | 160 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.
In high concentrations, supplied air respirator or a self-contained breathing apparatus.

**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**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
**Color:** Clear light yellow
**Odor:** Alcohol
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | 7.0-8.5 @ 5% | |
| **Freezing Point/Range** | -29 °C | |

| | |
|---|---|
| **Melting Point/Range** | No data available |
| **Boiling Point/Range** | No data available |
| **Flash Point** | 33.9 °C / 93 °F Seta closed cup |
| **Flammability (solid, gas)** | No data available |
| **upper flammability limit** | No data available |
| **lower flammability limit** | No data available |
| **Evaporation rate** | < 1 (BuAc = 1) |
| **Vapor Pressure** | 15.7 mmHg @ 20C |
| **Vapor Density** | < 1 (Air=1) |
| **Specific Gravity** | 1.054 |
| **Water Solubility** | Soluble in water |
| **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

## SECTION 10: Stability and Reactivity

**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. Strong alkalis.

**10.6. Hazardous Decomposition Products**

Oxides of nitrogen. Oxides of sulfur. 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** | Causes serious eye damage. |
| **Skin Contact** | Causes skin irritation. May cause skin defatting with prolonged exposure. |
| **Ingestion** | Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. 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. May affect the heart and cardiovascular system. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 0.1% are chronic health hazards. |

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | > 2,000 mg/kg (Rat) (similar substance) | > 2,000 mg/kg (Rat) (similar substance)<br>4000-12000 mg/kg (Rats) (similar substance) | No data available |

| | | | | |
|---|---|---|---|---|
| Isopropanol | 67-63-0 | 4396 mg/kg (Rat)<br>5840 mg/kg (Rat)<br>3600 mg/kg (Mouse) | 12,800 mg/kg (Rat)<br>12,870 mg/kg (Rabbit)<br>6280 mg/kg (Rabbit) | 72.6 mg/L (Rat) 4h<br>> 10,000 mg/L (Rat) 6h |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | 600 mg/kg (Rat) (similar substances)<br>1600 mg/kg (Rat) (similar substance)<br>> 5000 mg/kg (Rat) (similar substance) | > 5200 mg/kg (rabbit) (similar substances)<br>> 2000 mg/kg (rat) (similar substance)<br>2500 mg/kg (rabbit) (similar substance) | > saturated concentration (similar substance) |

| **Substances** | **CAS Number** | **Skin corrosion/irritation** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Causes moderate skin irritation. (Rabbit) (similar substances) |
| Isopropanol | 67-63-0 | Non-irritating to the skin (Rabbit) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | May cause moderate skin irritation. (Rabbit) (similar substances) |

| **Substances** | **CAS Number** | **Eye damage/irritation** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Causes severe eye irritation. (Rabbit) (similar substances) |
| Isopropanol | 67-63-0 | Causes severe eye irritation. (Rabbit) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Causes severe eye irritation. (Rabbit) (similar substances) |

| **Substances** | **CAS Number** | **Skin Sensitization** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |
| Isopropanol | 67-63-0 | Did not cause sensitization on laboratory animals (guinea pig) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Did not cause sensitization on laboratory animals (similar substances) |

| **Substances** | **CAS Number** | **Respiratory Sensitization** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | No information available |
| Isopropanol | 67-63-0 | No information available |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | No information available |

| **Substances** | **CAS Number** | **Mutagenic Effects** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances) |
| Isopropanol | 67-63-0 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances) |

| **Substances** | **CAS Number** | **Carcinogenic Effects** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Did not show carcinogenic effects in animal experiments (similar substances) |
| Isopropanol | 67-63-0 | Did not show carcinogenic effects in animal experiments |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Did not show carcinogenic effects in animal experiments (similar substances) |

| **Substances** | **CAS Number** | **Reproductive toxicity** |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Did not show teratogenic effects in animal experiments. (similar substances) |
| Isopropanol | 67-63-0 | No significant toxicity observed in animal studies at concentration requiring classification. |

| | | |
|---|---|---|
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Isopropanol | 67-63-0 | May cause headache, dizziness, and other central nervous system effects. |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Isopropanol | 67-63-0 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Not applicable |
| Isopropanol | 67-63-0 | Not applicable |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | 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 |
|---|---|---|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | EC50 (72h) 73.52 mg/L (Skeletonema costatum)<br>ErC50 (72h) 32 mg/L (Selenstrum capriconutum) (similar substance)<br>NOErC (72h) 9 mg/L (Selenastrum capricornutum)<br>NOEC (72h) 32 mg/L (Skeletonema costatum) | LC50 (96h) 1 - 2.5 mg/L (Salmo trutta) (similar substance)<br>LC50 (96h) 7.8 mg/L (Scophthalmus maximus)<br>NOEC (30d) 0.88 mg/L (Pimephales promelas) (similar substance) | No information available | EC50 (48h) 1.17 mg/L (Daphnia magna) (similar substance)<br>LC50 (96h) 232.5 mg/L (Acartia tonsa)<br>NOEC (21d) 0.37 mg/L (Daphnia magna) (similar substance) |
| Isopropanol | 67-63-0 | EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus)<br>EC50 (7d) 1800 mg/L (Scenedesmus quadricauda) | LC50 (96h) 9640 mg/L (Pimephales promelas)<br>LC50 (7d) 7060 mg/L (Poecilia reticulata) | TT (16h) 1050 mg/L (Pseudomonas putida) | EC50 (48h) 13,299 mg/L (Daphnia magna)<br>EC50 (24h) > 10,000 mg/L (Daphnia magna) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | EC50 (72h) 0.7 mg/L (Selenestrum capriconutum) (similar substance)<br>EC50 (72h) 1.1 mg/L (Scenedesmus subspicatus) (similar substance) | EC50 (96h) 1.4 mg/L (Pimephales promelas) (similar substance)<br>EC50 (96h) 3 mg/L (Brachydanio rerio) (similar substance)<br>NOEC (30d) 0.28 mg/L (Pimephales promelas) (similar substance)<br>NOEC (16d) 0.16 mg/L (Lepomis macrochirus) (similar substance) | No information available | EC50 (48h) 0.2 mg/L (Daphnia magna) (similar substance)<br>EC50 (48h) 0.39 mg/L (Ceriodaphnia dubia) (similar substance) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | Readily biodegradable (87% @ 28d) (similar substances) |
| Isopropanol | 67-63-0 | Readily biodegradable (53% @ 5d) |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | Readily biodegradable |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Log Pow |
|---|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | 68037-05-8 | No information available |
| Isopropanol | 67-63-0 | 0.05 |
| Alcohols, C6-10, ethoxylated | 70879-83-3 | 12.7 - 237 L/kg (similar substance) |

### 12.4. Mobility in soil

| Substances | Mobility |
|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | No information available |
| Isopropanol | KOC = 1.5 |
| Alcohols, C6-10, ethoxylated | No information available |

### 12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

| Substances | PBT and vPvB assessment |
|---|---|
| Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt | No data available |
| Isopropanol | Not PBT/vPvB |
| Alcohols, C6-10, ethoxylated | Not PBT/vPvB |

### 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:** UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Isopropanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

### RID

**UN Number:** UN1993
**UN Proper Shipping Name:** Flammable Liquid, N.O.S. (Contains Isopropanol)

**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

**ADR**

**UN Number:** UN1993
**UN Proper Shipping Name:** Flammable Liquid, N.O.S. (Contains Isopropanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number:** UN1993
**UN Proper Shipping Name:** Flammable Liquid, N.O.S. (Contains Isopropanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

**14.1. UN Number:** UN1993

**14.2. UN Proper Shipping Name:** Flammable Liquid, N.O.S. (Contains Isopropanol)

**14.3. Transport Hazard Class(es):** 3

**14.4. Packing Group:** III

**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** | 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/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

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

**15.2. Chemical Safety Assessment**
Yes

## SECTION 16: Other Information

**Full text of H-Statements referred to under sections 2 and 3**
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life
H412 - Harmful 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/
NZ CCID
HERA
OSHA

**Revision Date:** 24-Apr-2015
**Revision Note**
Update to Format SECTION: 2 3 4 6 7 8 10 11 12 16

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

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**End of Safety Data Sheet**