



|                     |   |
|---------------------|---|
| Health              | 1 |
| Fire                | 1 |
| Reactivity          | 0 |
| Personal Protection | C |

## Material Safety Data Sheet

### Dowtherm SR1 MSDS

#### Section 1: Chemical Product and Company Identification

**Product Name:** Dowtherm SR1

**Catalog Codes:** SLD4267

**CAS#:** Mixture.

**RTECS:** Not applicable.

**TSCA:** TSCA 8(b) inventory: Ethylene glycol; Water; Potassium phosphate dibasic

**CI#:** Not available.

**Synonym:** Dowtherm\* SR-1 Heat Transfer Fluid; Dowtherm\* SR-1

**Chemical Name:** Not applicable.

**Chemical Formula:** Not applicable.

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**

1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

#### Section 2: Composition and Information on Ingredients

**Composition:**

| Name                        | CAS #     | % by Weight |
|-----------------------------|-----------|-------------|
| Ethylene glycol             | 107-21-1  | >95         |
| Water                       | 7732-18-5 | <3          |
| Potassium phosphate dibasic | 7758-11-4 | <3          |

**Toxicological Data on Ingredients:** Ethylene glycol: ORAL (LD50): Acute: 4700 mg/kg [Rat]. 5500 mg/kg [Mouse]. 6610 mg/kg [Guinea pig]. VAPOR (LC50): Acute: >200 mg/m 4 hours [Rat].

#### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant). Severe over-exposure can result in death.

**Potential Chronic Health Effects:**

**CARCINOGENIC EFFECTS:** Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethylene glycol]. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Ethylene glycol]. Non-mutagenic for bacteria and/or yeast. [Ethylene glycol]. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs

damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

## Section 4: First Aid Measures

### Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

### Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

### Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation:** Not available.

### Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

### Serious Ingestion:

Medical Conditions Aggravated by Exposure: Persons with pre-existing kidney, respiratory, eye, or neurological problems might be more sensitive to Ethylene Glycol. Notes to Physician: 1. Support vital functions, correct for dehydration and shock, and manage fluid balance. 2. The currently recommended medical management of Ethylene Glycol poisoning includes elimination of Ethylene Glycol and metabolites. Elimination of Ethylene Glycol may be achieved by the following methods: a. Emptying the stomach by gastric lavage. It is useful if initiated within < 1 of ingestion. b. Correct metabolic acidosis with intravenous administration of sodium bicarbonate, adjusting the administration rate according to repeated and frequent measurement of acid/base status. c. Administer ethanol (orally or by IV (intravenously)) or fomepizole (4-methylpyrazole or Antizol) therapy by IV as an antidote to inhibit the formation of toxic metabolites. d. If patients are diagnosed and treated early in the course with the above methods, hemodialysis may be avoided if fomepizole or ethanol therapy is effective and has corrected the metabolic acidosis, and no renal failure is present. However, once severe acidosis and renal failure occurred, however, hemodialysis is necessary. It is effective in removing Ethylene Glycol and toxic metabolites, and correcting metabolic acidosis.

## Section 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** The lowest known value is 398°C (748.4°F) (Ethylene glycol).

**Flash Points:** CLOSED CUP: 111°C (231.8°F). (Tagliabue.)

**Flammable Limits:** LOWER: 3.2% (Ethylene Glycol)

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>). Some metallic oxides.

**Fire Hazards in Presence of Various Substances:** Slightly flammable to flammable in presence of open flames and sparks, of heat.

**Explosion Hazards in Presence of Various Substances:** Non-explosive in presence of open flames and sparks, of shocks.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:**

Explosive decomposition may occur if combined with strong acids or strong bases and subjected to elevated temperatures. (Ethylene glycol)

### Section 6: Accidental Release Measures

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Poisonous liquid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### Section 7: Handling and Storage

**Precautions:**

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area.

### Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:** Safety glasses. Synthetic apron. Gloves (impervious).

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**

Ethylene glycol STEL: 120 (mg/m<sup>3</sup>) [Australia] TWA: 100 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] CEIL: 125 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] CEIL: 50 (ppm) from OSHA (PEL) [United States] TWA: 52 STEL: 104 (mg/m<sup>3</sup>) [United Kingdom (UK)] Inhalation TWA: 10 (mg/m<sup>3</sup>) [United Kingdom (UK)] SKINConsult local authorities for acceptable exposure limits.

### Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Glycol like

**Taste:** Not available.

**Molecular Weight:** Not applicable.

**Color:** Colored

**pH (1% soln/water):** Not available

**Boiling Point:** 163°C (325.4°F)

**Melting Point:** May start to solidify at -13°C (8.6°F) based on data for: Ethylene glycol.

**Critical Temperature:** Not available.

**Specific Gravity:** 1.1295 (Water = 1)

**Vapor Pressure:** 0.3 kPa (@ 20°C)

**Vapor Density:** >1 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether, acetone.

**Solubility:**

Soluble in cold water, hot water, acetone. Partially soluble in diethyl ether.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, incompatible materials

**Incompatibility with various substances:** Reactive with oxidizing agents, acids, alkalis.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:**

Hygroscopic. Absorbs moisture from the air. Avoid contamination with materials with hydroxyl compounds. Also incompatible with aliphatic amines, isocyanates, chlorosulfonic acid, and oleum (Ethylene glycol)

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Ingestion.

**Toxicity to Animals:**

Acute oral toxicity (LD50): >8200 mg/kg [Rat]. Acute dermal toxicity (LD50): >2000 mg/kg [Rabbit].

**Chronic Effects on Humans:**

CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethylene glycol]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Ethylene glycol]. Non-mutagenic for bacteria and/or yeast. [Ethylene glycol]. May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

**Other Toxic Effects on Humans:**

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

**Special Remarks on Toxicity to Animals:**

Lowest Published Toxic Dose/Conc: TDL [Man] - Route: oral; Dose: 15gm/kg Lethal Dose/Conc 50% Kill LD50 [Rabbit] - Route: dermal; Dose: 9530 ul/kg (Ethylene glycol)

**Special Remarks on Chronic Effects on Humans:**

May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. No human data has been reported at this time. May affect genetic material (mutagenic) (Ethylene glycol)

**Special Remarks on other Toxic Effects on Humans:**

### Section 12: Ecological Information

**Ecotoxicity:**

Ecotoxicity in water (LC50): 41000 mg/l 96 hours [Trout]. 46300 mg/l 48 hours [water flea]. 34250 mg/l 96 hours [bluegill fish]. 34250 mg/l 72 hours [Goldfish]. (Ethylene Glycol)

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

### Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

### Section 15: Other Regulatory Information

**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. Illinois toxic substances disclosure to employee act: Ethylene glycol Illinois chemical safety act: Ethylene glycol New York release reporting list: Ethylene glycol Rhode Island RTK hazardous substances: Ethylene glycol Pennsylvania RTK: Ethylene glycol Minnesota: Ethylene glycol Massachusetts RTK: Ethylene glycol Massachusetts spill list: Ethylene glycol New Jersey: Ethylene glycol Louisiana spill reporting: Ethylene glycol California Director's List of Hazardous Substances: Ethylene Glycol TSCA 8(b) inventory: Ethylene glycol; Water; Potassium phosphate dibasic TSCA 4(a) proposed test rules: Ethylene glycol SARA 313 toxic chemical notification and release reporting: Ethylene glycol 95.95% CERCLA: Hazardous substances.: Ethylene glycol: 5000 lbs. (2268 kg);

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC):**

R22- Harmful if swallowed. S46- If swallowed, seek medical advice immediately and show this container or label.

**HMIS (U.S.A.):**

**Health Hazard:** 1

**Fire Hazard:** 1

**Reactivity:** 0

**Personal Protection:** C

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

**Health:** 1

**Flammability:** 1

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves. Synthetic apron. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

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