

## MATERIAL SAFETY DATA SHEET

*Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards*

**PART I** *What is the material and what do I need to know in an emergency?*

### 1. PRODUCT IDENTIFICATION

<u>TRADE NAME (AS LABELED):</u>	<b>Dynalene Solar Glycol - XT</b>
<u>CHEMICAL NAME/CLASS:</u>	Heat Transfer Fluids
<u>SYNONYMS:</u>	Inhibited Glycol
<u>DISTRIBUTOR'S NAME:</u>	<b>Dynalene Heat Transfer Fluids</b>
<u>ADDRESS:</u>	5250 West Coplay Road Whitehall, PA 18052
<u>EMERGENCY PHONE:</u>	1 -800-424-9300 (CHEMTREC)
<u>BUSINESS PHONE:</u>	1-610-262-9686
<u>DATE OF PREPARATION:</u>	June 27, 2007
<u>DATE OF REVISION:</u>	October 27, 2009

### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% v/v	EXPOSURE LIMITS IN AIR					
			ACGIH			OSHA		
			TLV	STEL	PEL	STEL	IDLH	OTHER
			mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>	mg/m <sup>3</sup>
1,3 Propanediol	504-63-2		NE	NE	NE	NE	NE	NE
Inhibitor Solution			None of the ingredients in the Inhibitor Solution contribute any significant, additional hazard to these products. All pertinent hazard information has been provided in this Material Safety Data Sheet, per the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					
Water	7732-18-15		NE	NE	NE	NE	NE	NE

NE = Not Established      C = Ceiling Level      See Section 16 for Definitions of Terms Used.

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

### 3. HAZARD IDENTIFICATION

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE:

The most significant routes of exposure to this product are by inhalation of the vapors and contact with the skin and eyes.

CONTACT WITH SKIN or EYES

Based on animal data, skin contact with pure 1,3-propanediol may cause dermatitis with itching or rash. No adverse effects are expected from incidental eye contact with 1,3-propanediol.

INGESTION

Based on animal data, ingestion of 1,3-propanediol may cause liver abnormalities.

CARCINOGENICITY INFORMATION

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

**HMIS Rating**

**Health                    0**

Flammability 0  
Reactivity 0

---

**PART II**      *What should I do if a hazardous situation occurs?*

---

#### 4. FIRST-AID MEASURES

SKIN EXPOSURE

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE EXPOSURE

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INHALATION

If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call physician.

Notes to Physician: No antidote or specific regimens known. Use supportive measures as needed.

---

#### 5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method):

None.

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES (cooling only)

Carbon Dioxide: YES

Foam: YES

Dry Chemical: YES

Other: Any "ABC" Class

Halon: YES

SPECIAL FIRE-FIGHTING PROCEDURES:

Evacuate personnel to safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Avoid breathing vapor. Use water spray to knock down vapor.

NFPA Rating

Health 0

Flammability 0

Reactivity 0

---

#### 6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of an uncontrolled release, clear the affected area, protect people, and respond with trained personnel.

SMALL SPILL:

Cover with absorbent material (floor absorbent, vermiculite, etc.) Soak up spill and place material into a drum.

LARGE SPILL:

Personnel involved with large releases should wear protective equipment. Stop spill at source, dike the area surrounding the spill to prevent further exposure. Prevent material from entering sewer system. If necessary, absorbents such as vermiculite, clay floor absorbent may be used on spill and shoveled into drums.

---

**PART III**      *How can I prevent hazardous situations from occurring?*

---

#### 7. HANDLING AND STORAGE

STORAGE AND HANDLING PRACTICES:

Avoid breathing vapor or mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure. Keep container tightly closed. Keep away from heat, sparks and flames. Store in a cool, dry place

---

#### 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS

---

Keep container tightly closed. Mechanical exhaust required. Keep away from heat and open flames. Store in a cool dry place

**RESPIRATORY PROTECTION:**

Where there is a potential for airborne exposure, wear appropriate NIOSH approved respiratory protection.

**EYE PROTECTION:**

Wear overall chemical splash goggles or safety glasses.

**HAND/BODY PROTECTION:**

Where there is potential for skin contact have available, and wear as appropriate, impervious gloves, apron, pants, and jacket.

**PERSONAL PROTECTIVE EQUIPMENT LEVEL: D**

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**MELTING POINT**

-27°C (-16.6°F)

**EVAPORATION RATE**

<1 (Butyl Acetate=1.0)

**SPECIFIC GRAVITY (water = 1)**

1.046

**SOLUBILITY IN WATER**

Soluble

**VAPOR PRESSURE**

0.08 mm Hg @ 20 °C(68°F)

**BOILING POINT:**

>100°C (212°F)

**pH:**

8.8

**APPEARANCE AND COLOR:**

This product is a colorless, odorless, syrupy liquid with a faint, chemical odor. Alternate colors are available, pending customer preferences.

---

## 10. STABILITY AND REACTIVITY

**STABILITY**

Stable at normal temperatures and storage conditions

**DECOMPOSITION PRODUCTS:**

No decomposition under normal operating conditions.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE**

None reasonably foreseeable

**HAZARDOUS POLYMERIZATION**

No polymerization under normal operating conditions.

---

**PART IV**

*Is there any other useful information about this material?*

---

## 11. TOXICOLOGICAL INFORMATION

**TOXICITY DATA**

Additional toxicology information for components listed in Section 2 (Composition and Information on Ingredients) is provided below.

Animal Data for 1,3-propanediol:

Oral LD50:	15,000 mg/kg in rats
Dermal LD50:	> 20,000 mg/kg in rabbits
Inhalation 4 hour ALC:	> 5.0 mg/L in rats

**SUSPECTED CANCER AGENT**

The ingredients of this product are not listed on the following lists: OSHA Z list, NTP, IARC or CAL/OSHA, and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

---

## IRRITANCY OF PRODUCT

This product is not an eye irritant, is a slight skin irritant, and is not a skin sensitizer.

## REPRODUCTIVE TOXICITY INFORMATION

Animal data shows that 1,3-propanediol is not uniquely toxic to the fetus. Information about reproductive toxicity potential is limited to information from the oral repeated dose study in rats where no adverse effect to sperm and reproductive organs were observed. 1,3-propanediol is not likely to be a genetic toxin. In vitro, it was not mutagenic in bacterial or mammalian cells. 1,3-propanediol was also negative in the vivo mouse micronucleus assay.

## MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Repeated exposure of rats by oral gavage caused no toxicologically important changes in clinical pathology, pathology (including sperm analysis), or in-life measurements. The NOEL for this study was 1000 mg/kg/day, the highest dose tested. These results suggest that changes to testicular DNA and liver substructure observed in earlier studies are unlikely to cause adverse effects.

## INHALATION EXPOSURE

Repeated inhalation exposure in rats caused no toxicologically important changes in clinical pathology, or in-life measurements. The NOEL was 1800mg/m<sup>3</sup>.

## BIOLOGICAL EXPOSURE INDICES

Currently, there are no Biological Indices (BEIs) associated with the components of this product.

---

## **12. ECOLOGICAL INFORMATION**

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

### ENVIRONMENTAL STABILITY

If released into an uncontrolled environment, components of this product can be microbially or chemically degraded into other inorganic and organic compounds.

### AQUATIC TOXICITY

1,3-propanediol: low toxicity  
40 hour EC50 - Daphnia magna: 7417 mg/L  
72 hour EC50 - algae: 1600 mg/L  
96 hour LC50 - fathead minnow: >9720 mg/L

---

## **13. DISPOSAL CONSIDERATIONS**

### PREPARING WASTES FOR DISPOSAL

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

### EPA WASTE NUMBER

Not applicable.

---

## **14. TRANSPORTATION INFORMATION**

### SHIPPING INFORMATION

Not regulated as a hazardous material by DOT, IMO, or IATA

---

## **15. REGULATORY INFORMATION**

### **U.S. FEDERAL REGULATIONS**

#### TSCA INVENTORY STATUS

The components of this product are listed on the TSCA Inventory.

---

## **16. OTHER INFORMATION**

### **PREPARED BY:**

DYNALENE INC  
5250 West Coplay Road

---

Date of Printing:

November 1, 2010.

---

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Dynalene Inc assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Dynalene Heat Transfer Fluids assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

---

## DEFINITIONS OF TERMS

### Key/Legend

ppm = parts per million; mg/m<sup>3</sup> = milligrams per cubic meter of air; mppcf = million of particles per cubic foot of air; f/cc = fibers per cubic centimeter of air; OSHA = Occupational Safety and Health Administration; ACGIH = American Conference of Governmental Industrial Hygienists; TLV = Threshold Limit Value; TWA = 8-hour, time-weighted average; STEL = short-term exposure limit; EPA = Environmental Protection Agency; TSCA = Toxic Substances Control Act; DSL = Canada Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; ECL = Korea Existing and Evaluated Chemical Substances Inventory; ENCS = Japan Existing and New Chemical Substances Inventory; PICCS = Philippines Inventory of Chemicals and Chemical Substances; AICS = Australia Inventory of Chemical Substances; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; PMN = Premanufacture Notification; DSL = Domestic Substances List; NFPA = National Fire Protection Association; WHMIS = Workplace Hazardous Materials Identification System; HEPA = High Efficiency Particulate Air; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; NJTSR = New Jersey Trade Secret Registry; EPCRA = Emergency Planning and Community Right-to-Know Act (SARA, Title III); 302 = Extremely Hazardous Substance; HAP = Clean Air Act Hazardous Air Pollutant; TPQ = Threshold Planning Quantity; RQ = Reportable Quantity; NA = Not Available; NR = Not Regulated