

# Material Safety Data Sheet

## Caleffi Solar HD 50

### Heat Transfer Fluid

#### Section 1. Product and Company Identification

**Product Name:** Caleffi Solar HD 50 Heat Transfer Fluid

**Effective Date:** July 2013

**Manufacturer Information:**

Douglas Products and Packaging Company

1550 East Old 210 Highway

Liberty, Missouri 64068

Information Phone: (816) 781-4250

Emergency Phone: Chemtrec (800) 424-9300

#### Section 2. Ingredients and Hazards Identification

Hazardous Components		Occupational Exposure Limits			
Component	CAS Number	OSHA PEL	ACGIH TLV	Weight Percent	Section 313
Propylene Glycol	57-55-6	10 mg/m3	N/A	≤ 50	No
Dipotassium Phosphate (DKP)	11/4/7758			<02.0	No
DI1006 Chromatint Uranine HS Liquid	Blend			<.005	No

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### Section 3. Hazard Identification

**Potential Health Effects:**

**Eyes:** May cause slight temporary eye irritation. Corneal injury is unlikely.

**Skin:** Propanediol is highly hygroscopic and may cause skin irritation in its pure form. A 75% solution of propanediol did not cause dermal irritation in human skin patch test.

#### Section 4. First Aid Measures

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Skin Contact:** Wash skin with plenty of water.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Ingestion:** If swallowed, do not induce vomiting. Immediately give 2 glasses of water.

Never give anything by mouth to an unconscious person. Call a physician.

**Notes to Physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

#### Section 5. Fire Fighting Measures

Flash Point: -37° C (-34° F)

**Extinguishing Media:** Water for or fine spray. Dry chemical fire extinguishers. CO2. Foam Dry Chemical. **Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**Unusual Fire and Explosion Hazard:** Container may rupture from gas generation in a fire situation.

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

#### Section 6. Accidental Release Measures

**Steps to be Taken if Material is Released or Spilled:** Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. See Section 13, Disposal Considerations, for additional information.

**Personal Precautions:** Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or ground water. See Section 12, Ecological Information.

#### Section 7. Handling and Storage

**General Handling:** No special precautions required. Keep container closed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the Autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, Exposure Control and Personal Protection.

**Storage:** Do not store in: Galvanized Steel. Opened or unlabeled containers. Store in the following material(s): Carbon steel. Stainless steel Plastic HDPE. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

#### Section 8. Exposure Control/Personal Protection

Component List	Type	Value
Propanediol	WEEL TWA Aerosol	10 mg/m3

**Personal Protection**

**Eye/Face Protection:** Use safety glasses

**Skin Protection:** Wear clean, body-covering clothing.

**Hand Protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber (latex). Neoprene. Nitrile/butadiene rubber (nitrile or NBR). Polyethylene. Ethyl vinyl alcohol laminate (EVAL). Polyvinyl alcohol (PVA). Polyvinyl chloride (PVC or vinyl). **Respiratory Protection:** Wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particular pre-filter.

**Ingestion:** Use good personal hygiene. Do not consume or store food in work area. Wash hands before smoking or eating.

**Engineering Controls**

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

#### Section 9. Physical and Chemical Properties

<b>Odor</b>	Characteristic	<b>Vapor Pressure</b>	0.08 mm Hg @ 20° C (68° F) 9.8 mm Hg @ 100° C (212° F)
<b>Color</b>	Yellow/Dye	<b>% Volatiles by Volume</b>	ND
<b>Physical State</b>	Liquid	<b>Specific Gravity (H<sub>2</sub>O=1)</b>	1.053
<b>pH</b>	Neutral	<b>Solubility</b>	Miscible with water
<b>Freeze Point</b>	-40° F	<b>Boiling Point</b>	108° C (226.4° F) (closed cup)
<b>Flow Point</b>	-30° F	<b>Vapor Density (air=1)</b>	>1.0
<b>Burst Point</b>	-75° F		

#### Section 10. Stability and Reactivity

**Stability/Instability**

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.

**Conditions to Avoid:** Exposure to elevated temperatures can cause product to decompose.

Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

**Incompatible Materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

**Hazardous Polymerization:** None

**Thermal Decomposition:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

#### Section 11. Toxicological Information

**Acute Toxicity**

**Ingestion**

LD50, Rat, female 20,300 mg/kg

**Skin Absorption**

For similar material(s): LD50, Rabbit >10,000 mg/kg

**Repeated Dose Toxicity**

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

**Chronic Toxicity and Carcinogenicity**

Similar formulations did not cause cancer in laboratory animals.

**Developmental Toxicity**

For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive Toxicity**

For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

**Genetic Toxicity**

In vitro genetic toxicity studies were negative. For the major component(s): Animal genetic toxicity studies were negative.

#### Section 12. Ecological Information

**Ecotoxicity:** For the major component(s): Material is practically non-toxic to aquatic organisms on an acute basis (LOC50/E50>100 mg/L in the most sensitive species tested).

**Movement and Partitioning**

For the major component(s): Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

**Persistence and Degradability**

For the major component(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

#### Section 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOUGLAS PRODUCTS AND PACKAGING HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR USED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler.

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Reclaimer, Incinerator or other thermal destruction device. As a service to its customers, Douglas Products and Packaging can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums.

Reactivity/Instability 4 – May detonate 3 Explosive 2 Unstable 1 Normally stable 0 Stable

**Disclaimer:**  
The information is furnished without warranty, representation, inducement, or license of any kind, except that it is accurate to the best of Douglas Products and Packaging Company knowledge. Because use conditions and applicable laws may differ from one location to another and may change with time, Recipient is responsible for determining whether the information is appropriate for recipient's use. Since Douglas Products and Packaging has no control over how this information may be ultimately used, all liability is expressly disclaimed and Douglas Products and Packaging Company assume no liability.

#### Section 14. Transport Information

**D.O.T. Classification:** Not regulated by US DOT  
**IMDG:** Not regulated  
**ICAO/IATA:** Not regulated  
**Shipping Name:** Caleffi Solar HD50 Heat Transfer Fluid  
**Technical Shipping Name:** Susterra Propanediol  
**UNFIC:** None  
**ID Number:** None  
**Packaging Group:** None  
**Labels:** No US DOT Labels

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

#### Section 15. Regulatory Information

EPCRA 311/312 Categories: Immediate (Acute) Health Effects: No  
 Delayed (Chronic) Health Effects: No  
 Fire Hazard: No  
 Sudden Release of Pressure: No  
 Reactivity: No

Right to know classification: Propylene glycol is listed in CA, PA, MN, MA, MI, FL and NJ.

TSCA: Propylene glycol. All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

Reportable Quantity (RQ): None

CEPA: This product contains one or more substances which are not listed on the Canadian Domestic Substances List (DSL).

Propylene glycol is listed in chemical inventories in: AICS, ECL, EEC, ENCS, EU, Israel, MAC, MAK, MITI, PICCS, SWISS, Taiwan, USA and UK

Abbreviations:

	AICS	Australian Inventory of Chemical Substances
Number	CAS #	Chemical Abstract Service
	°C	Celsius temperature scale
	°F	Fahrenheit temperature scale
List	ECL	Korean Existing Chemicals
Commission	EEC	European Economic
Chemical List	ENCS	Japanese Existing and New
Substances Number	EINECS #	European Inventory of Existing Chemical
	EU	European Union
chemical substances to be regulated under Israel	(Israel)	2001 proposed list of
List		Hazardous Substances Law and Regulations
	MAC	Netherlands
	MAK	Germany
trade and Industry	MITI	Ministry of International
	NA	Not applicable
	PEL	Permissible Exposure Limit
Chemicals and Chemical Substances	PICCS	Philippines Inventory of
Equipment	PPE	Personal Protective
	Prop.	Proprietary
	NA	Not applicable
	ND	Not determined
	STEL	Short Term Exposure Limit
	SWISS	Giftlist 1
Substances	SWISS	Inventory of Notified New
	TLV	Threshold Limit Value
	TSCA	Toxic Substance Control Act
	TWA	Time Weighted Average
under Taiwan Toxic Chemical	(Taiwan)	List of Toxic Chemical Substances regulated
Substances Control Act of 1086		
	USA	United States of America
	UK	United Kingdom

#### Section 16. Other Information

**Hazard Rating System**

Health	0
Fire	1
Reactivity	0

Health 4 Deadly 3 Extreme Danger 2 Dangerous 1 Slight hazard 0 No hazard

Fire 4 < 73 °C 3 < 100 °C 2 < 200 °C 1 > 200 °C 0 Will not burn