

Initial Preparation Date: 1/15/2010
Last Revision Date: None
Effective Date: 7/23/2010

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTITY: THERMAL CHARGE PGSE HEAT TRANSFER FLUID

1. SUPPLIER

OLD WORLD INDUSTRIES, INC.
4065 COMMERCIAL AVENUE
NORTHBROOK, ILLINOIS 60062
PHONE: 847-559-2000
EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

2. INGREDIENTS

<u>Material</u>	<u>CAS#</u>	<u>% By Wt.</u>	<u>PEL Mist</u>	<u>PEL Vapor</u>
Propylene Glycol	57-55-6	94-96	None Established	None Established
Water	7732-18-5	3		
Proprietary Additives		1-3		

(Does not contain IARC, NTP, OSHA and ACGIH listed carcinogens greater than 0.1%)

3. HAZARDS IDENTIFICATION

NPFA: HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0
HMIS: HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0

KEY: 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Eye Contact, Skin Contact, Inhalation, Ingestion, Signs and Symptoms of Overdose

Eye: May cause minor eye irritation.

Skin: No significant adverse effects are expected under anticipated conditions of normal use. Repeated, prolonged exposure may cause slight flaking, tenderness, and softening of skin.

Inhalation: No significant adverse effects are expected under anticipated conditions of normal use. If effects do occur, refer to FIRST AID section.

Ingestion: No significant adverse effects are expected under anticipated conditions of normal use. Excessive ingestion may cause central nervous system effects.

Signs and Symptoms of Overexposure: Same as above.

Medical Conditions Generally Aggravated by Exposure: Material and/or its emissions may aggravate preexisting eye disease.

Other Health Information: None.

4. FIRST AID MEASURES

Eyes: Immediately rinse eyes with clean water for 20-30 minutes. Retract eyelids often. Obtain medical attention if pain, blinking, tears or redness persist.

Skin: Product is not expected to present a significant skin hazard under anticipated conditions of normal use.

Inhalation: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

Ingestion: If large quantity is swallowed, give a pint of luke warm water if victim is completely conscious and alert. If large quantities are consumed, induce vomiting. Obtain emergency medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: (deg F): 211

Flammable or Explosive Limits (approximate % by volume in air) LEL: 2.4 UEL: 17.4

Extinguishing Media: Carbon dioxide, dry chemical, alcohol type foam, water spray, water fog.

Special Fire Fighting Procedures: Wear positive pressure, self contained breathing apparatus and other protective apparatus as warranted. Fight fire from distance or protected location - heat may build up pressure and rupture closed containers. Liquid may form slippery film. Use water spray or fog for cooling, solid stream may spread fire as burning liquid will float on water. Avoid frothing/steam explosion. Notify authorities if liquid enters sewers/public waters.

Unusual Fire and Explosion Hazards: Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air and travel long distances along ground before igniting and flashing back. Fine sprays and mists may be combustible at temperatures below normal flash point.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material Is Released or Spilled: Prevent flow to sewers and public waters as it may contaminate said water. Restrict water usage to prevent slip/fall hazard. Soak up small spills with inert solids. Dike and recover large land spills. Notify appropriate authorities if product enters any waterway.

7. HANDLING AND STORAGE

Precautions to be Taken in Handling and Storage: Store in tightly closed and properly vented containers, away from heat, sparks, open flame, and strong oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: No special respiratory protection equipment is recommended under normal conditions of anticipated use with adequate ventilation.

Ventilation: Adequate general ventilation is required, local exhaust is recommended if possible.

Protective Gloves: Not required.

Eye Protection: Chemical splash goggles or full face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

Other Protective Equipment: None

Work Practices/Engineering Controls: Keep containers closed when not in use.

Personal Hygiene: If product-handling results in skin contact, wash hands and other exposed areas with mild soap and water before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse.

9. PHYSICAL PROPERTIES

Boiling Point (deg F):	365
Specific Gravity (Water =1):	1.04
Vapor Pressure (mm of Hg):	<0.1
Vapor Density (air=1):	2.6
Freezing Point:	Product will not freeze
Water Solubility:	Complete
Evaporation Rate (n-butyl acetate=1):	Slight
Melting Point (deg F):	-76
Appearance:	Pink
Odor:	Slightly viscous, almost odorless liquid

10. STABILITY and REACTIVITY

Stability:	Stable
Conditions to Avoid:	Heat, sparks, open flame
Materials to Avoid:	Strong alkalis, strong oxidizing agents
Hazardous Decomposition or Byproducts:	Carbon monoxide and other toxic vapors
Hazardous Polymerization:	Not expected to occur

11. TOXICOLOGICAL INFORMATION

Skin: The LD50 for skin absorption in rabbits is >10,000 mg/kg.

Ingestion: The oral LD50 for rats is 20,000-34,000 mg/kg.

Mutagenicity: In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION

Movement & Partitioning: Based largely or completely on information for similar material (s), i.e. propylene glycol. Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is -0.92. Henry's Law Constant (H) is 1.2E-8 atm.m³/mole.

Degradation & Persistence: Based largely or completely on information for similar material (s), i.e. propylene glycol. Biodegradation under aerobic static laboratory conditions is high (BOD20 OR BOD28/Th0D greater than 40%). Biodegradation is expected to be achievable in a secondary wastewater treatment plant. 5-Day biochemical oxygen demand (BOD5) is 1.16 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.45 p/p. theoretical oxygen demand (Th0D) is calculated to be 1.68 p/p. Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is greater than 1 gm/L. Degradation is expected in the atmospheric environment within minutes to hours.

Ecotoxicity: Based largely or completely on information for similar material (s), i.e. propylene glycol. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species).

Acute LC50 for fathead minnow (*Pimephales promelas*) is 4600-54900 mg/L.

Acute LC50 for guppy (*Poecilia reticulata*) is greater than 10000 mg/L.

Acute LC50 for water flea *Daphnia magna* is 4850-34400 mg/L.

Acute LC50 for rainbow trout (*Oncorhynchus mykiss*) is 44mL/L (about 44000 mg/L).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Landfill solids at permitted sites using registered transporters. Burn concentrated liquids, avoiding flameouts, and assuring emissions comply with applicable regulations. Diluted aqueous waste may biodegrade, but avoid overloading plant biomass and assure effluent complies with applicable regulations.

14. TRANSPORT INFORMATION

This product is not regulated by DOT.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization of 1988 (SARA), Title III

Section 302/304

Requires emergency planning based on “Threshold Planning Quantities” (TPQs) and release reporting based on Reportable Quantities (RQs) of “Extremely Hazardous Substances” (EHS) listed in Appendix A of 40 CFR 355. There are no components of this material with known CAS numbers that are on the EHS list.

Section 311 and 312

Based upon available information, this material and/or components are not classified as any of the specific health and/or physical hazards defined by Section 311 & 312.

Section 313

The material does not contain any chemical components with known CAS numbers that exceeded the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

OSHA Regulations

“Chemical-specific” U.S. Occupational Safety and Health Administration (OSHA) regulations (1910.1002 to 1910.1050) presented under 29 U.S. Code of Federal Regulations (CFR) 1910 do not apply to this material or its components.

Department of Transportation (DOT)

Other than the normal shipping instructions and information given in this MSDS, there are no other specific U.S. Department of Transportation (DOT) regulations governing the shipment of this material.

State Regulations:

California Safe Drinking Water and Toxic Enforcement Act of 1988 – Proposition 65

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels that would be subject to the proposition.

California South Coast Air Quality Management District (SCAWMD) Rule 443.1 (VOCs)

A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, 1, 1, 1-trichlorethane, methylene chloride (FC-23), (CFC-113), (CFC-12), (CFC-11), (CFC-22), (CFC-114) and (CFC-115). By this definition, this is a VOC material.

Massachusetts Right to Know Substance List (MSL) (105 CMR Section 670.000)

Extraordinarily Hazardous Substances (MSL-EHS) must be identified when present in materials at levels greater than state specified criterion. The criterion is $\geq 0.0001\%$. Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers present in this material, at levels specified in Section 9 – Components do not require reporting under the statute.

New Jersey Registration

The New Jersey Registry 3. Registration law does not apply to this material, as none of its components are trade secrets.

Pennsylvania Right to Know Hazardous Substance List

Hazardous Substances (PA-HS) must be identified when present in material at levels greater than the state specified criterion. The criterion is $\geq 1\%$. Components with CAS numbers in this material at a level which could require reporting under the statute are:

<u>Chemical</u>	<u>CAS #</u>
Propylene Glycol	57-5506

Special Hazardous Substances (PA-SHS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is $\geq 0.01\%$. Components with CAS numbers in this material, at levels specified in Section 9 Components do not require reporting under the statute.

UNITED STATES - TSCA - Inventory: Listed

WHMIS classification for product: n/a

This product has been classified in accordance with the hazard criteria of the CFR and the MSDS contains all the information required by the CFR.

16. OTHER INFORMATION

Contact: Thomas Cholke

Phone: (847) 559-2225

Old World Industries, Inc. makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, Inc. assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.