SAFETY DATA SHEET

1. Product and Company Identification

Product Name: P-DT-5
Product Code: PDT5
Product Use: Heat Transfer Fluid

Chemical Type: Solvent Blend

Manufacturer: Chemical Solvents Inc.
Address: 3751 Jennings Rd.
Cleveland, Ohio 44109

Revision Date: 12/8/2016
Emergency: Chemtrec (800)424-9300
Phone: (800) 362-0693

NOTE: The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. Chemical Solvents Inc provides this information as guidance for providing personal protection to your employees. The user should supplement this MSDS and recommendations. The user has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. The user must meet all applicable safety and health standards.

2. Hazards Identification

2.1 Classification of the substance or mixture under GHS
This material is NOT HAZARDOUS by OSHA Hazard Communication definition.

2.2 GHS Label elements, including precautionary statements
Not a hazardous substance or mixture.

Signal Word Caution.
Hazards: Slightly combustible liquid. Do not handle near heat, sparks, or open flame. May cause minor eye irritation. High aerosol concentrations may cause mild irritation of the nose and throat as well as central nervous system depression. Not expected to cause skin irritation. Not expected to be a sensitizer.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

Potential health effects

Routes of Exposure: Eye Skin. Inhalation

Signs and Symptoms of Acute Exposure
Propylene Glycol 57-55-6
May cause minor eye irritation. High aerosol concentrations may cause mild irritation of the nose and throat as well as central nervous system depression.

Skin Not a skin irritant. Not expected to be a sensitizer.

Inhalation High aerosol concentrations may cause mild reversible irritation of the nose and throat as well as CNS depression (primarily fatigue, dizziness and possibly loss of concentration, with collapse, coma and death possible in cases of severe over exposure).

Eye May cause minor eye irritation. Effects of eye irritation are reversible.

Ingestion Ingestion of high doses may cause discomfort and irritation of the gastrointestinal tract and CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).

Chronic Health Effects

Propylene Glycol 57-55-6

Repeated or prolonged exposure of the skin to this material may cause defatting and drying of the skin. Prolonged or repeated breathing of high concentrations may cause symptoms of central nervous system depression.

Conditions Aggravated by Exposure This material or its emissions may aggravate pre-existing eye disease.

3. Composition / Information on Ingredients

Ingredients	CAS #	Percent	Exposure Limits
Propylene Glycol	57-55-6	>90%	OSHA (TWA)- N/E ACGIH (TWA)- N/E WEEL (TWA)- 10 mg/m3
Inhibitor package		1-10 %	None

4. First Aid Measures

General Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.

Skin Not expected to present a significant skin hazard under anticipated conditions of normal use. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

Inhalation Not expected to present a significant inhalation hazard under anticipated conditions of normal use. If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain medical attention if breathing difficulty persists.

Eye Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion Ingestion unlikely. If large quantity swallowed, give lukewarm water (pint/ 1/2 litre) if victim completely conscious/alert. Obtain medical attention.

Note to Physician Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Flammable Properties

Classification OSHA/NFPA Class IIIB combustible liquid.
Flash Point: ~ 109 °C (228.2 °F) (PMCC) (Aqueous solution).
Auto-Ignition Temperature ~ 371 °C (699.8 °F)
Lower Flammable Limit ~ 2.4 vol% **Upper Flammable Limit** ~ 17.4 vol%

Extinguishing Media

Suitable: SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. **Unsuitable:** Do not use solid water stream

Protection of Firefighters

Protective Equipment/Clothing: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.
Fire Fighting Guidance: 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. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Aqueous solutions containing less than 95% propylene glycol by weight have no flash point as obtained by standard test methods. However aqueous solutions of propylene glycol greater than 22% by weight, if heated sufficiently, will produce flammable vapors. Always drain and flush systems containing propylene glycol with water before welding or other maintenance. Refer to NFPA Code 13 for guidance in using propylene glycol in sprinkler system applications. Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Hazardous Combustion Products: Incomplete combustion may produce carbon monoxide and other toxic gases.

6. Accidental Release Measures

Release Response
In case of accidental spill, may contaminate water supplies/pollute public waters. Evacuate/limit access. Equip responders with proper protection. Extinguish ignition sources; stop release; prevent flow to sewers or public waters. Notify fire and environmental authorities. Restrict water use for cleanup. Slippery walking/spread granular covers or soaks up. Impound/recover large land spill; soak up small spill with inert solids. Use suitable disposal containers. On water, material is soluble and will disperse rapidly unless contained and collected quickly to minimize dispersion. Report per regulatory requirements.

7. Handling and Storage

Handling: FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN

Handling Hygroscopic. Handle with care. After handling, always wash hands thoroughly with soap and water. Always drain and flush systems containing propylene glycol with water before welding or other maintenance. Wear recommended personal protective equipment. Observe precautions pertaining to confined space entry.

Storage Hygroscopic. Keep drums tightly closed to prevent contamination. Store away from heat, sparks, open flames, strong oxidizing agents and direct sunlight. Store at 65-90°F (18-32°C). Stainless steel containers. Lined steel. Mild steel. Reinforced plastic. Use dry nitrogen or low dew point air for tank padding.

8. Exposure Controls / Personal Protection

Engineering Controls
No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.

Personal Protection
Inhalation No special respiratory protection is recommended under anticipated conditions of normal use with adequate ventilation. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. Skin Wear chemical resistant gloves such as: Neoprene. Where use can result in skin contact, practice good personal hygiene.

The equipment must be cleaned thoroughly after each use. Eye Use splash goggles when eye contact due to splashing or spraying liquid is possible.

Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse.

9. Physical and Chemical Properties

Appearance: Liquid.,Pink
Odor: Little or no odor.
pH: ~ 7
Boiling Point/Boiling Range: ~ 188 °C (370.4 °F) @ 760 mm Hg
Freezing Point/Melting Point: ~ -60 °C (-76 °F)
Flash Point: ~ 109 °C (228.2 °F) (PMCC) (Aqueous solution).
Auto-ignition: ~ 371 °C (699.8 °F)
Flammability: OSHA/NFPA Class IIIB combustible liquid.
Lower Flammable Limit: ~ 2.4 vol%
Upper Flammable Limit: ~ 17.4 vol%
Vapor Pressure: < 0.1 mm Hg @ 25 °C (77 °F)
Evaporation Rate: 0.01 (butyl acetate = 1)
Relative Density: ~ 1.04 @ 25 °C (77 °F)
Relative Vapor Density: ~ 2.6 @ ~ 15 - 32 °C (59 - 89.6 °F) (Air = 1.0)
Viscosity: ~ 46 mPa.s @ 25 °C (77 °F) (Brookfield).
Solubility (Water): Complete
Additional Physical and Chemical Properties: Volatile Characteristics: Slight: 0.1 to 1.0% Hygroscopic.

10. Stability and Reactivity

Chemical Stability: Stable.
Conditions to Avoid: High temperatures, oxidizing conditions. May degrade when exposed to light or other radiation sources.
Substances to Avoid: Reacts with strong oxidizing agents. Strong acids. Isocyanates.
Decomposition Products: Carbon Monoxide and other toxic vapors.
Hazardous Polymerization: Not expected to occur.

11. Toxicological Information

COMPONENT INFORMATION
□ *Propylene Glycol 57-55-6*
Acute Toxicity - Lethal Doses
LD50 (Oral) Rat 22,000 MG/KG BWT
LD50 (Skin) Rabbit. 20,800 MG/KG BWT

Irritation Skin Not a skin irritant. Repeated or prolonged contact with skin may cause dermatitis.
Eye May cause minor eye irritation. Effects of eye irritation are reversible.

Sensitization Not expected to cause sensitization by skin contact, however skin reactions of unknown etiology have been described in some hypersensitive individuals following topical application.

Target Organ Effects Skin. Repeated or prolonged contact with skin may cause defatting and drying of the skin which may result in dermatitis.

Repeated Dose Toxicity No adverse systemic changes were reported in rats or dogs following repeated dietary exposure to high concentrations of propylene glycol. Cats responded with species-specific hematological changes (Heinz body formation) yet all other tissues were unaffected. No systemic effects, but mild eye and nasal irritation were noted in rats following sub-chronic exposure to high concentrations of

propylene glycol aerosol. Overall propylene glycol is of low inherent toxicity following repeated oral or inhalation exposure.

Reproductive Effects No adverse effect on reproductive performance was seen in male and female mice exposed continuously to high doses of propylene glycol in drinking water for up to 3 months.

Developmental Effects Results from studies in pregnant rats, mice, hamsters and rabbits demonstrate that propylene glycol is not teratogenic or fetotoxic.

Genetic Toxicity Negative for genotoxicity both in vitro and in vivo tests.

Carcinogenicity No increase in tumors was noted in rats and dogs exposed to high concentrations of propylene glycol via the diet for up to 2 years. The incidence of skin tumors was unaltered in mice following dermal application over a lifetime. Not listed by IARC, NTP, or OSHA.

12. Ecological Information

Environmental Fate and Pathway

COMPONENT INFORMATION

□ *Propylene Glycol 57-55-6*

Ecotoxicity

This material is expected to be non-hazardous to aquatic species.

Acute toxicity to fish
LC50 / 96 HOUR fathead minnow 51,400 mg/l
LC50 / 96 HOUR salmon 51,600 mg/l

Acute toxicity to aquatic invertebrates
EC50 / 48 HOUR Daphnia magna. 43,500 mg/l
EC50 / 48 HOUR saltwater mysid. 27,300 mg/l

Toxicity to aquatic plants
EC50 / 72 HOUR Freshwater Algae. 24,200 mg/l
EC50 / 72 HOUR Marine algae 19,300 mg/l

Toxicity to microorganisms	Summary: No Data Available.	
Chronic toxicity to fish	Summary: No Data Available.	
Chronic toxicity to aquatic invertebrates	IC25 / waterflea. 13,470 mg/l	Summary: A three generation reproductive study.

Mobility
Transport between environmental compartments: Environmental releases of propylene glycol will tend to partition to water and soil, with little potential for evaporation.

Persistance and Degradability
Biodegradation: Readily biodegradable in aerobic conditions. There is evidence that it is degraded under anaerobic conditions.
Bioaccumulation: This material is not expected to bioaccumulate. BCF < 1.5

13. Disposal Considerations

Comply with federal, state, or local regulations for disposal. Landfill solids at permitted sites. Burn concentrated liquids, diluting with clean, low viscosity fuel. Avoid flameouts and assure that emissions comply with all applicable standards/regulations. Dilute aqueous waste may biodegrade. Assure effluent complies with applicable regulations.

14. Transport Information

Special Requirements
If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in the composition section of this sheet, based on final composition of your product.

Proper Shipping Name PROPYLENE GLYCOL SOLUTION, Not Regulated by D.O.T.

15. Regulatory Information

Environmental Regulations

SARA 302/304
Chemicals with provided CAS numbers in this material are not subject to the reporting requirements of CERCLA.
SARA 311/312
Based upon available information, this material is not classified as a health and/or physical hazard according to Section 311 & 312.
SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.
Component Reporting Threshold

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

All the chemicals used in this product are TSCA listed.
Check with your local regulators to be sure all local regulations are met.

16. Other Information

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Health: 0 Flammability: 1 Reactivity: 0
HMIS: Health: 0 Flammability: 1 Reactivity: 0
RATING: 4-EXTREME 3-HIGH 2-MODERATE 1-SLIGHT 0-INSIGNIFICANT

Revision Date: Revision Date: 12/8/2016

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