



OAT PG 25 Heat Transfer Fluid Technical Data Sheet



Product Overview

SOLUTHERM™ OAT PG Heat Transfer Fluid is a ready-to-use, propylene glycol-based thermal management fluid designed for the unique needs of Direct Liquid Cooling (DLC) in data centers, supercomputers, and adjacent end uses. The fluid offers excellent heat transfer and corrosion protection in these applications. **SOLUTHERM™ OAT PG Heat Transfer Fluid** is a robust 25% PG formulation for direct-to-chip cooling systems. PG 25 fluids have been shown to improve facility PUE (Power Usage Effectiveness), increase computing density and decrease data center footprint when compared with air-cooled systems.

Product Technical Information

SOLUTHERM™ OAT PG Heat Transfer Fluid leverages a proprietary Organic Acid Technology inhibitor system that offers long-life corrosion protection for copper, brass, steel, cast iron, and aluminum alloys. **SOLUTHERM™ OAT PG 25 Heat Transfer Fluid** offers great performance, as evidenced by results from the modified ASTM 8040 industry-standard test designed by *Open Compute Project (OCP)* for corrosion protection. **SOLUTHERM™ OAT PG 25 Heat Transfer Fluid** is compatible and well suited for systems which use HNBR, NBR, VMQ, FKM, EPDM, PP, and rubbers/elastomers[†]. Additional material compatibility information may be available upon request. **SOLUTHERM™ OAT PG Heat Transfer Fluid** uses a propylene glycol-based formula, which is less toxic than traditional ethylene glycol-based HTFs.

Performance Features and Benefits

- For direct liquid cooling computer applications.
- Protects copper, stainless steel, aluminum, brass, and cast iron against corrosion.
- Formulated without 2-EHA, molybdate and BNAS (borate, nitrite, amine, silicate).
- Product can be maintained with easy, periodic health monitoring and treatment as needed.
- Product offers high temperature corrosion protection for aluminum components and is compatible with aluminum heat exchangers.

*The OCP ACCEPTED mark is owned by the Open Compute Project Foundation and is used under license.

[†]As noted in the Open Compute Project Whitepaper: *Guidelines to Rack Manifold Requirements and Qualification*
www.opencompute.org/documents/ocp-white-paper-rackmanifold-requirements-and-qualification-v3-pdf

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Product Use

SOLUTHERM™ OAT PG Heat Transfer Fluid is intended for use in Direct Liquid Cooling applications where a water or propylene glycol-based coolant is required. Before the initial fill with **SOLUTHERM™ OAT PG Heat Transfer Fluid**, the system should be prepared by an appropriate flushing procedure, followed by complete removal of flushing fluid. There is no need for additional bio treatment with proper maintenance of glycol concentration at or above 25%.

Once filled in cooling system, it is natural for **SOLUTHERM™ OAT PG Heat Transfer Fluid** inhibitor levels to slowly depreciate over time. Maintaining fluid quality within the system, as defined by **SOLUTHERM™** monitoring and maintenance protocols, is essential for sustained performance. This includes the periodic addition of **SOLUTHERM™** recommended booster packages to preserve fluid integrity. For more information, visit www.solutherm.com/services.

Storage and Disposal

Store **SOLUTHERM™ OAT PG Heat Transfer Fluid** in the original container in a cool, dry environment away from direct sunlight. Do not use galvanized steel for storage or handling systems. Refer to SDS for product safety information. Discard unused or end of life product in accordance with local, regional, or national regulations.

Specifications

The corrosion inhibitor package in **SOLUTHERM™ OAT PG 25 Heat Transfer Fluid** was designed to meet the following OEM and industrial specifications:

- ASTM D8039
- CoolIT 756-00003

PRODUCT SPECIFICATIONS:

TYPICAL PROPERTIES	SOLUTHERM™ OAT PG 25	SOLUTHERM™ OAT PG 25 Booster Pack	SOLUTHERM™ OAT PG Concentrate
Propylene glycol % weight	25%	Can be customized to restore critical fluid parameters, such as pH and corrosion inhibitors, to original levels of fluid in existing systems	Can be used to raise reduced propylene glycol concentrations of in-service fluid without affecting its inhibitor concentrations
Corrosion inhibitors and water % weight	75%		
Color	Fluorescent green		
ASTM Corrosion specification	D8039*		
pH of solution	8.6		
Pounds per gallon 68°F (20°C)	8.57		
Boiling point†	220.1°F (104.5°C)		
Freezing point**	14°F (-10°C)		

*ASTM D8039 specification states that Heat Transfer Fluids must contain 30% or more glycol content; fluids not meeting the ASTM specified amount are tested as is using ASTM D8040 and ASTM D1881, held to the same corrosion and foam control protection specifications stated in the standard.

**Per ASTM D1177

†Per ASTM D1120



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