EASTMAN

# Technical Data Sheet

## Therminol® SP Heat Transfer Fluid

## Applications

- Asphalt
- Asphalt storage
- Biomass - orc
- Cement - waste heat recovery + orc
- Desalination
- Gas to liquid (gtl)
- Hot mix asphalt
- Htf - production of bioalcohol
- Htf - production of biodiesel
- Natural gas purification
- Oil or gas processing
- Oil recycling
- Polymer & plastic
- Waste heat recover + orc
- Wood panels

## Key Attributes

- Excellent Low Temperature Pumpability
- Excellent resistance to fouling
- Long Life

## Product Description

Therminol SP is a synthetic heat transfer fluid used in moderate temperature applications. Therminol SP fluid is designed for use in non-pressurized /low-pressure, indirect heating systems. It delivers efficient, dependable, uniform process heat with no need for high pressures.

**Performance Benefits**

- **Long Life—**You will get years of reliable, cost-effective performance, even when operating your system continuously at 290°C (550°F). This means you do not have to overspecify your fluid.
- **Excellent resistance to fouling—** Because Therminol SP is a synthetic fluid, it resists the effects of oxidation 10 times better than mineral oils meaning less oxidation and solids formation. For systems without nitrogen inerting, the performance advantages are significant.
- **Excellent Low Temperature Pumpability—**Therminol SP is still pumpable at -28°C (-18°F), compared to some mineral oils that will not pump at temperatures below -7°C (20°F). With Therminol SP, your heat transfer fluid system can start up quickly and easily.

## Typical Properties

| Property | Test Method | Typical Value, Units |
|---|---|---|
| **General** | | |
| Appearance | | Clear yellow liquid |
| Composition | | Synthetic hydrocarbon mixture |
| Maximum bulk temperature | | 290 °C (550 °F) |
| Extended maximum use temperature | | 315 °C (600 °F) |
| Maximum film temperature | | 335 °C (635 °F) |
| Normal Boiling Point | | 351 °C (664 °F) |
| Pumpability | | |
| @300 mm2/s (cSt) | | -8 °C (17 °F) |
| @ 2000 mm2/s (cSt) | | -28 °C (-18 °F) |

| | | |
|---|---|---|
| Flash Point | | |
| COC | ASTM D92 | 177 °C (350 °F) |
| Autoignition Temperature | ASTM E659 | 343 °C (650 °F) |
| | DIN 51794 | 366 °C (691 °F) |
| Pour Point | ISO 3016 | -54 °C (-65 °F) |
| Minimum liquid temperatures for fully developed turbulent flow (NRe > 10000) | | |
| 10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube) | | 67 °C (152 °F) |
| 20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube) | | 45 °C (114 °F) |
| Minimum liquid temperatures for transitional region flow, (NRe > 2000) | | |
| 10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube) | | 24 °C (75 °F) |
| 20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube) | | 11 °C (52 °F) |
| Heat of Vaporization[a] | | 228 kJ/kg (98.1 Btu/lb) |
| Viscosity, Kinematic | | |
| @ 100°C | ASTM D 445 | 3.52 cSt, $mm^2/s$ |
| @ 40°C | ASTM D 445 | 19 cSt, $mm^2/s$ |
| Liquid Density | | |
| @ 25°C | ASTM D 4052 | 868 $kg/m^3$ (7.25 lb/gal) |
| Molecular Weight (Average) | | 320 |
| Pseudocritical temperature | | 512 °C (953 °F) |
| Pseudocritical pressure | | 13.2 bar (191 psia) |
| Pseudocritical density | | 258 $kg/m^3$ (16.1 $lb/ft^3$) |
| Copper Corrosion | ASTM D 130 | <<1a |
| Moisture Content, maximum | ASTM E-203 | 150 ppm |
| Dielectric Constant | | |
| @ 23°C | ASTM D-924 | 2.23 |

[a]*at maximum use temperature*

# Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.



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