

Technical Data Sheet

Therminol® 59 Heat Transfer Fluid

Applications

- Biomass - orc
- Desalination
- Gas to liquid (gtl)
- Htf - production of biodiesel
- Natural gas purification
- Oil or gas processing
- Polymer & plastic
- Specialty chemicals
- Waste heat recover + orc

Key Attributes

- Heating or Cooling Operation
- Long Life Means Low Cost
- Superb Low Temperature Pumpability

Product Description

Therminol 59 is a synthetic heat transfer fluid with excellent low temperature pumping characteristics and thermal stability.

Performance Benefits

- **Heating or Cooling Operation**—Therminol 59 has surprisingly low viscosity for a high-temperature heat transfer fluid. It is ideally suited for combination heating and cooling applications, delivering excellent heat transfer rates even at 20°C (70°F). Batch processes will benefit from the excellent cooling performance Therminol 59 delivers.
- **Superb Low Temperature Pumpability**—Low viscosity at exceptionally cold temperatures makes this an ideal fluid for northern climates. In fact, Therminol 59 was originally developed for use on the North Slope in Alaska, a supreme test of low temperature pumpability.
- **Long Life Means Low Cost**—Users can expect many years of reliable, trouble-free operation even when operating continuously at the recommended upper temperature limit of 315°C (600°F). Long life means fewer fluid change-outs and that means low operating costs, which are critical in today's highly competitive business environment.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Appearance		Clear yellow to dark amber liquid
Composition		Alkyl substituted aromatic
Maximum bulk temperature		315 °C (600 °F)
Maximum film temperature		345 °C (650 °F)
Normal Boiling Point		289 °C (553 °F)
Pumpability		
@300 mm ² /s (cSt)		-37 °C (-35 °F)
@ 2000 mm ² /s (cSt)		-49 °C (-56 °F)
Flash Point		
COC	ASTM D92	146 °C (295 °F)
PMCC	ASTM D93	132 °C (270 °F)
Autoignition Temperature	ASTM E659	372 °C (702 °F)
	DIN 51794	404 °C (760 °F)

Pour Point	ISO 3016 ASTM D 97	-68 °C (-90 °F) -61 °C (-78 °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)		17 °C (63 °F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		0 °C (32 °F)
Minimum liquid temperatures for transitional region flow, (NRe > 2000)		
10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube)		-16 °F (4 °C)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		-24 °C (12 °F)
Coefficient of thermal expansion @ 200°C		0.000946 /°C (0.000525 /°F)
Heat of Vaporization ^a		227 kJ/kg (97.5 Btu/lb)
Viscosity, Kinematic		
@ 100°C	ASTM D 445	1.44 cSt, mm ² /s
@ 40°C	ASTM D 445	4.00 cSt, mm ² /s
Liquid Density		
@ 15°C	ASTM D 4052	978 kg/m ³ (8.16 lb/gal)
@ 25°C	ASTM D 4052	971 kg/m ³ (8.10 lb/gal)
Acidity	ASTM D 664	<0.2 mg KOH/g
Molecular Weight (Average)		207
Pseudocritical temperature		514 °C (957 °F)
Pseudocritical pressure		22.3 bar (323 psia)
Pseudocritical density		287 kg/m ³ (17.9 lb/ft ³)
Copper Corrosion	ASTM D 130	<<1a
Moisture Content, maximum	ASTM E-203	200 ppm
Dielectric Constant		
@ 23°C	ASTM D-924	2.52

^aat 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.

Eastman and its marketing affiliates shall not be responsible for the use of this information, or of any product, method, or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. No warranty is made of the merchantability of fitness of any product, and nothing herein waives any of the Seller's conditions of sale.

10/24/2019 4:03:08 PM