

Technical Data Sheet

Therminol® XP Heat Transfer Fluid

Applications

- Adhesives
- Desalination
- Dryer heating
- Fatty acid
- Htf - bakery
- Htf - deodorizing
- Htf - deodorizing oil and fat
- Htf - edible oil
- Htf - food production
- Htf - food/feed/beverage processing
- Htf - production of bioalcohol
- Htf - production of biodiesel
- Industrial
- Peek (polyether ether ketone)
- Phthalic anhydride
- Polyester (pet)
- Specialty and batch chemical production
- Specialty chemicals

Key Attributes

- Environmentally Friendly
- Low Fouling
- Practically Non-Toxic
- Thermal Stability

Product Description

Therminol XP heat transfer fluid is an extremely pure white mineral oil which provides reliable heat transfer.

Performance Benefits

- **Low Fouling**— The chemical composition of Therminol XP has been carefully selected to minimize system fouling resulting from oxidation and degradation of the fluid.
- **Practically Non-Toxic**—Meets the purity specifications in U.S. Food and Drug Administration Regulation 21 CFR 172.878. Listed as a Registered Nonfood Compound by NSF International (Category Code HT-1: Heat transfer fluids - Incidental contact).
- **Thermal Stability**—Users can expect many years of reliable, trouble-free operation, even when operating Therminol XP continuously at the recommended maximum temperature of 315°C (600°F).
- **Environmentally Friendly**—Therminol XP has outstanding regulatory status for those seeking heat transfer fluids which have minimum environmental reporting requirements.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Appearance		Colorless, odorless liquid
Composition		White mineral oil
Maximum bulk temperature		315 °C (600 °F)
Maximum film temperature		330 °C (625 °F)
Normal Boiling Point		358 °C (676 °F)
Pumpability		
@300 mm ² /s (cSt)		-1 °C (30 °F)
@ 2000 mm ² /s (cSt)		-20 °C (-4 °F)

Flash Point		
COC	ASTM D92	199 °C (390 °F)
Autoignition Temperature	ASTM E659	346 °C (655 °F)
	DIN 51794	363 °C (685 °F)
Pour Point	ISO 3016	-29 °C (-20 °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)		72 °C (162 °F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		51 °C (123 °F)
Minimum liquid temperatures for transitional region flow, (NRe > 2000)		
10 ft/s, 1-in. tube (3.048 m/s, 2.54-cm tube)		30 °C (85 °F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		17 °C (63 °F)
Coefficient of thermal expansion		
@ 200°C		0.000892 /°C (0.000495 /°F)
Heat of Vaporization ^a		214 kJ/kg (91.9 Btu/lb)
Viscosity, Kinematic		
@ 100°C	ASTM D 445	4.06 cSt, mm ² /s
@ 40°C	ASTM D 445	23.7 cSt, mm ² /s
Liquid Density		
@ 25°C	ASTM D 4052	875 kg/m ³ (7.3 lb/gal)
Molecular Weight (Average)		350
Pseudocritical temperature		542 °C (1007 °F)
Pseudocritical pressure		15.2 bar (220 psia)
Pseudocritical density		280 kg/m ³ (17.5 lb/ft ³)
Dielectric Constant		
@ 23°C	ASTM D-924	2.14

^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.

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