

Technical Data Sheet

Therminol® VLT Heat Transfer Fluid

Applications

- Htf - chiral chemistry processes
- Htf - pharmaceutical processing
- Specialty and batch chemical production
- Specialty chemicals
- Specialty heat-sensitive polymers
- Styrene

Key Attributes

- Cooling and/or Heating Operation
- Easy Operation
- Very Low Temperature Operation

Product Description

Therminol VLT is a synthetic liquid phase heat transfer fluid with excellent heat transfer and fluid properties for extremely low temperature applications. This fluid is ideally suited for single fluid heating and cooling systems.

Performance Benefits

- **Very Low Temperature Operation**—Therminol VLT has excellent heat transfer performance at extremely low temperatures and offers the benefits of liquid coolant temperature control.
- **Cooling and/or Heating Operation**—Therminol VLT allows a single fluid to be used in many general purpose processes where both cooling and heating are required. The properties of Therminol VLT allow the same equipment to be used over its wide range of operation.
- **Easy Operation**—Using Therminol VLT avoids problems of using multiple fluids in the same piece of equipment and allows low temperature operation with normal centrifugal pumps.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Appearance		Water-white liquid
Composition		Methylcyclohexane/trimethylpentane mixture
Maximum bulk temperature		175 °C (350 °F)
Maximum film temperature		210 °C (410 °F)
Normal Boiling Point		99 °C (211 °F)
Pumpability		
@300 mm ² /s (cSt)		-126 °C (-195 °F)
Cloud Point		-135 °C (-211 °F)
Autoignition Temperature	ASTM E659	264 °C (507 °F)
	DIN 51794	294 °C (562 °F)
Pour Point	ASTM D 97	-135 °C (-211 °F)
Minimum liquid temperatures for fully developed turbulent flow (NRe > 10000)		
10 ft/s, 1-in. tube (3.048 m/s,		-76 °C (-105 °F)
2.54-cm tube)		
20 ft/s, 1-in. tube (6.096 m/s,		-93 °C (-135 °F)
2.54-cm tube)		
Minimum liquid temperatures for transitional region flow, (NRe > 2000)		
10 ft/s, 1-in. tube (3.048 m/s,		-108 °C (-163 °F)

2.54-cm tube) 20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		-118 °C (-180 °F)
Coefficient of thermal expansion @ 200°C		0.001420 /°C (0.000786 /°F)
Heat of Vaporization ^a		252.3 kJ/kg (108.6 Btu/lb)
Viscosity, Kinematic @ 100°C	ASTM D 445	0.41 cSt, mm ² /s
@ 40°C	ASTM D 445	0.71 cSt, mm ² /s
Liquid Density @ 25°C	ASTM D 4052	744 kg/m ³ (6.21 lb/gal)
Acidity	ASTM D 664	<0.2 mg KOH/g
Molecular Weight (Average)		102
Pseudocritical temperature		299 °C (570 °F)
Pseudocritical pressure		35 bar (521.7 psia)
Pseudocritical density		267.8 kg/m ³ (16.72 lb/ft ³)
Copper Corrosion	ASTM D 130	<<1a
Moisture Content, maximum	ASTM E-203	80 ppm
Dielectric Constant @ 23°C	ASTM D-924	1.99

^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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