EASTMAN

Technical Data Sheet

Therminol® D12 Heat Transfer Fluid

Applications

- Environmental test chambers
- Htf - active pharmaceutical ingredients
- Htf - food/feed/beverage processing
- Htf - pharmaceutical processing
- Specialty and batch chemical production
- Specialty chemicals

Key Attributes

- Easy Operation
- Heating or Cooling Operation
- Low Cost
- Low Odor and Excellent Toxicity Profile

Product Description

Therminol D-12 is a synthetic liquid phase heat transfer fluid with excellent heat transfer properties over a wide temperature range. This fluid is ideally suited for applications requiring efficient cooling and heating.

Performance Benefits

- **Heating or Cooling Operation—**Therminol D-12 is ideally suited for combination heating and cooling applications and delivers excellent heat transfer rates even at -45°C (-50°F). Batch processes will benefit from the excellent cooling performance Therminol D-12 delivers. Therminol D-12 also may be used as a secondary coolant or "brine" in refrigeration loops where a broad range of properties is desired.
- **Easy Operation—**Using Therminol D-12 avoids problems of using multiple fluids in the same piece of equipment.
- **Low Cost—**Therminol D-12 delivers better thermal performance at lower cost than competing fluids.
- **Low Odor and Excellent Toxicity Profile—**Therminol D-12 is NSF registered with HT1 status, surpassing requirements for use where there is the possibility of incidental food contact.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Appearance		Clear, water-white liquid
Composition		Synthetic hydrocarbons
Maximum bulk temperature		230 °C (450 °F)
Maximum film temperature		245 °C (475 °F)
Normal Boiling Point		192 °C (378 °F)
Pumpability		
@300 mm2/s (cSt)		-82 °C (-116 °F)
@ 2000 mm2/s (cSt)		-94 °C (-137 °F)
Autoignition Temperature	ASTM E659	247 °C (477 °F)
	DIN 51794	277 °C (531 °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)		-37 °C (-35 °F)
20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		-51 °C (-59 °F)
Minimum liquid temperatures for transitional region flow, (NRe > 2000)		
10 ft/s, 1-in. tube (3.048 m/s,		-64 °C (-82 °F)

2.54-cm tube) 20 ft/s, 1-in. tube (6.096 m/s, 2.54-cm tube)		-71 °C (-96 °F)
Coefficient of thermal expansion @ 100°C		0.001122 /°C (0.00062 /°F)
Viscosity, Kinematic @ 100°C @ 40°C	 ASTM D 445 ASTM D 445	 0.65 cSt, mm^2/s 1.23 cSt, mm^2/s
Molecular Weight (Average)		162
Pseudocritical temperature		360 °C (680 °F)
Pseudocritical pressure		16.2 bar (235 psia)
Pseudocritical density		229 kg/m^3 (14.1 lb/ft^3)
Moisture Content, maximum	ASTM E-203	80 ppm
Dielectric Constant @ 23°C	 ASTM D-924	 2.02

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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