



PRODUCT DATA SHEET



THERM 600 FLUID

Therm 600 Fluid is a low-cost heat transfer fluid formulated with finely refined petroleum base stocks with a high performance additive package. Thermally unstable components have been removed by special treatment and the resulting product has exceptional resistance to thermal decomposition. It was developed to provide the finest performance and cover a broad range of applications.

Applications

- ◆ Closed heat transfer systems
- ◆ Indirectly fired heat transfer systems
- ◆ Temperatures as high as 316°C (600°F) in low-pressure systems

Features and Benefits

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|---------------------------------|--|
| ◆ High thermal stability | Performs well up to 316°C (600°F). |
| ◆ High heating efficiency | High specific heat and thermal conductivity help keep fuel costs down. |
| ◆ Excellent oxidation stability | Minimizes sludge and acid formation, extends product life. |
| ◆ Low volatility | Reduces potential for pump cavitation. |
| ◆ Compatibility | Compatible with other mineral oil heat transfer fluids. |

General Description

Therm 600 Fluid is recommended for service involving maximum film temperatures to 360°C (680°F) with a typical temperature drop of 44°C (80°F) across the fluid film. This is an equivalent to a maximum bulk temperature of 316°C (600°F). **Therm 600 Fluid** is especially resistant to the formation of oxidation sludge that usually occurs in heat transfer systems. Because of its superior oxidation stability, **Therm 600 Fluid** gives excellent performance in open systems where the fluid temperature does not exceed 66°C (150°F) at the point of exposure. If the oil is exposed to air in an expansion tank, and the temperature of the oil is over 66°C (150°F), it can be blanketed with inert gas or an overflow pipe can be installed into the expansion tank to prevent air from being drawn into the tank.

Therm 600 Fluid has excellent high temperature properties such as volatility, low vapor pressure and a high flash point. It has a typical vapor pressure equivalent to 27 mmHg at 260°C (500°F), which is well below corresponding pressures of other petroleum heat transfer fluids.

Product No. 301517

THERM 600 FLUID

TYPICAL PROPERTIES

<u>Product No.</u>	<u>301517</u>
<u>Old Product No.</u>	<u>28600</u>
ISO Viscosity Grade	32
SAE Engine Oil Grade	10W
Viscosity, ASTM D445	
@ 40°C, cSt	31.0
@ 100°C, cSt	5.33
Viscosity, ASTM D2161	
@ 100°F, SUS	160
@ 210°F, SUS	44.1
Viscosity Index, ASTM D2270	104
Pour Point, ASTM D97	
°C	-18
(°F)	(0)
Total Acid Number, ASTM D974	
mg KOH/g	0.010
Conradson Carbon Residue, ASTM D189	
weight %	<0.01
Aniline Point, ASTM D611	
°C	110
(°F)	(230)
Distillation Range, ASTM D2887	
5%, °C (°F)	363 (685)
50%, °C (°F)	428 (802)
Dry Point, °C (°F)	507 (945)

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TYPICAL PROPERTIES

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Vapor Pressure

@ 93°C (200°F), Pa (mmHg)	0.267 (0.002)
@ 149°C (300°F), Pa (mmHg)	18.7 (0.140)
@ 204°C (400°F), Pa (mmHg)	400 (3.00)
@ 260°C (500°F), Pa (mmHg)	3600 (27.0)
@ 316°C (600°F), Pa (mmHg)	18665 (140)

Thermal Conductivity, ASTM D2717

@ 38°C (100°F), watt/m-K (BTU/hr-ft-°F)	0.133 (0.077)
@ 149°C (300°F), watt/m-K (BTU/hr-ft-°F)	0.125 (0.072)
@ 260°C (500°F), watt/m-K (BTU/hr-ft-°F)	0.118 (0.068)

Specific Heat, ASTM D2766

@ 38°C (100°F), J/g-K (BTU/lb-°F)	2.05 (0.49)
@ 149°C (300°F), J/g-K (BTU/lb-°F)	2.43 (0.58)
@ 260°C (500°F), J/g-K (BTU/lb-°F)	2.85 (0.68)

Density, ASTM D1298

@ 38°C (100°F), g/ml	0.850
@ 149°C (300°F), g/ml	0.770
@ 260°C (500°F), g/ml	0.700

Flash Point, ASTM D92

°C	216
(°F)	(421)

Fire Point, ASTM D92

°C	240
(°F)	(464)

Auto-Ignition Temperature, ASTM E659, °C (°F)

336 (637)

Useful Temperature Range

°C	-15 to 316
(°F)	(5 to 600)

Color

Pale Yellow