



**THERMAL  
FLUID  
SOLUTIONS**

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PRODUCT  
INFORMATION

# THERMINOL D-12 HEAT TRANSFER FLUID

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**Therminol D-12 is a synthetic liquid phase heat transfer fluid with high performance heat transfer properties over a wide temperature range. This fluid is ideally suited for applications requiring efficient cooling and heating, along with food manufacturing environments.**

## PERFORMANCE BENEFITS

- **Heating or Cooling Operation** – Therminol D-12 is ideally suited for combination heating and cooling applications, delivering excellent heat transfer rates even at  $-45^{\circ}\text{C}$  ( $-50^{\circ}\text{F}$ ). 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.



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- Low Odour 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.

## PRODUCT SPECIFICATION

|  |  |
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| 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, at 300 mm <sup>2</sup> /s (cSt)   | -1°C (30°F)                                      |
| Pumpability, at 2000 mm <sup>2</sup> /s (cSt)  | -94°C (-137°F)                                   |
| Autoignition temperature (ASTM E-659)  | 247°C (477°F)                                    |
| Autoignition temperature (DIN 51794)   | 277°C (531°F)                                    |
| <b>Minimum liquid temperatures for fully developed turbulent flow (<math>N_{Re} &gt; 10000</math>)</b> |  |
| 10 ft/sec, 1 in tube (3.048 m/s, 2.54 cm tube)   | -37°C (-35°F)                                    |
| 20 ft/sec, 1 in tube (6.096 m/s, 2.54 cm tube)   | -51°C (-59°F)                                    |
| <b>Minimum vapor temperatures for fully developed turbulent flow (<math>N_{Re} &gt; 2000</math>)</b>   |  |
| 10 ft/sec, 1 in tube (3.048 m/s, 2.54 cm tube)   | -64°C (-82°F)                                    |
| 20 ft/sec, 1 in tube (6.096 m/s, 2.54 cm tube)   | -71°C (-96°F)                                    |
| Coefficient of thermal expansion at 100°C  | 0.001116/°C (0.000620/°F)                        |
| Kinematic viscosity at 100°C (ASTM D-445)  | 0.65 mm <sup>2</sup> /s (cSt)                    |
| Kinematic viscosity at 40°C (ASTM D-445)   | 1.23 mm <sup>2</sup> /s (cSt)                    |
| Average molecular weight   | 162  |
| Pseudocritical temperature   | 360°C (680°F)                                    |
| Pseudocritical pressure  | 16.2 bar (235 psia)                              |
| Pseudocritical density   | 229 kg/m <sup>3</sup> (14.1 lb/ft <sup>3</sup> ) |
| Moisture content, maximum (ASTM E-203)   | 80 ppm   |
| Dielectric constant @ 23°C (ASTM D-924)  | 2.02   |

Email the **TFS Team**, [office@thermalfluidsolutions.com](mailto:office@thermalfluidsolutions.com)  
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