



Dowtherm A

Synthetic Organic Heat Transfer Fluid-Liquid and Vapor Phase Data

DOWTHERM* A heat transfer fluid is a eutectic mixture of two very stable compounds, biphenyl (C₁₂H₁₀) and diphenyl oxide (C₁₂H₁₀O). These compounds have practically the same vapor pressures, so the mixture can be handled as if it were a single compound. DOWTHERM A fluid may be used in systems employing either liquid phase or vapor phase heating.

Recommended use temperature range: Liquid phase: 60 °F to 750 °F (15 °C to 400 °C)

Vapor phase: 495 °F to 750 °F (257 °C to 400 °C)

Suitable applications: Indirect heat transfer

Typical Properties of Dowtherm A Fluid***

DOWTHERM A Fluid

Composition: Diphenyl Oxide/Biphenyl Blend

Color: Clear to light yellow

| Property | English Units | SI Units |
|--------------------------------|----------------------------|------------------------|
| Freeze Point | 53.6°F | 12.0°C |
| Atmospheric Boiling Point | 494.8°F | 257.1°C |
| Flash Point (1) | 236°F | 113°C |
| Fire Point (2) | 245°F | 118°C |
| Autoignition Temperature(3) | 1110°F | 599°C |
| Density @ 75°F (25°C) | 66.0 lb/ft ³ | 1056 kg/m ³ |
| Surface Tension in Air @ | | |
| 68°F (20°C) | 40.1 Dynes/cm | 40.1 Dynes/cm |
| 104°F (40°C) | 37.6 Dynes/cm | 37.6 Dynes/cm |
| 140°F (60°C) | 35.7 Dynes/cm | 35.7 Dynes/cm |
| Estimated Critical Pressure | 30.93 atm | 31.34 bar |
| Estimated Critical Temperature | 927°F | 497°C |
| Estimated Critical Volume | 0.0508 ft ³ /lb | 3.17 l/kg |
| Molecular Weight (average) | 166 | |

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|--------------------|---------------|--------------|
| Heat of Combustion | 15,500 Btu/lb | 36,053 kJ/kg |
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*** Not to be construed as specifications

- (1) SETA
- (2) C.O.C.
- (3) ASTM E659-78