



DOWTHERM™ T Heat Transfer Fluid

High-Temperature Thermal Fluid



DOWTHERM™ T Heat Transfer Fluid

- Designed for use in non-pressurized systems in a wide range of heat transfer fluid applications

Synthetic Fluids Offer Benefits

Reduced capital costs due to:

- Lower surface area in heat exchangers
- Lower temperature pumpability compared to some mineral oils

Reduced heat exchanger fouling during operation:

- Lower heater film temperatures
- Lower heat stress on heat transfer fluid
- Reduced fluid degradation

Lower operating costs due to lower make-up rates:

- Longer fluid life
- Reduced fluid degradation

Faster start-up time:

- High heat capacities lead to reduced heat-up time

DOWTHERM™ T vs. Mineral Oil

- Provides heat transfer performance up to 10 times better than mineral oil
- Operation in liquid phase only
- Normal application range of -10°C to 288°C*
- High flash point: 188°C

*Extended to 315°C under certain conditions with higher degradation

Typical Applications

- Mechanical heating, including calender rolling and parts manufacturing
- Chemical processes, including distillation and synthesis
- Plastic processes, including copolymer and fibers
- Textile processes, including dyeing, finishing and spinning
- Oil and gas processes

Dow's Technical Service Solution Approach

- Fluid selection and special fluid properties
- Engineering support during design, commissioning and start-up phases
- After-sales service with regular testing and advice on how to maintain fluid
- Safety training, technical assistance and clear information on how to handle fluids

Typical Properties¹

Composition: C ₁₄ to C ₃₀ alkyl benzene derivatives		
Color: Clear, yellow liquid		
Property	SI Units	English Units
Distillation Range, Initial Boiling Point 20% by Volume	345°C 352°C	653°F 665°F
Flash Point, COC	188°C	370°F
Fire Point, COC	210°C	410°F
Autoignition Temperature ASTM D2155	375°C	707°F
Density at 25°C (77°F)	869.8 kg/m ³	54.36 lb/ft ³
Estimated Critical Temperature	375°C	707°F
Estimated Critical Pressure	10.3 bar	1030 kPa
Estimated Critical Volume	4.32 l/kg	0.069 ft ³ /lb
Average Molecular Weight	318	318
Heat of Combustion	42,808 kJ/kg	18,373 Btu/lb



¹Not to be construed as specifications

Saturation Properties of DOWTHERM™ T Fluid (SI Units)

Temperature °C	Specific Heat kJ/(kg)(K)	Density kg/m ³	Thermal Conductivity W/(m)(K)	Viscosity mPa*s	Vapor Pressure kPa
-10	1.873	893.9	0.141	251.68	0.0
40	2.022	859.5	0.130	12.80	0.0
90	2.171	825.0	0.119	3.28	0.0
140	2.320	790.6	0.108	1.45	0.1
190	2.469	756.1	0.097	0.82	0.6
240	2.618	721.7	0.086	0.54	4.3
290	2.767	687.2	0.075	0.39	19.4
320	2.857	666.5	0.068	0.33	41.2

Saturation Properties of DOWTHERM™ T Fluid (English Units)

Temperature °F	Specific Heat Btu/lb °F	Density lb/ft ³	Thermal Conductivity Btu/hr.ft ³ (°F/ft)	Viscosity cP	Vapor Pressure psia
20	0.450	55.66	0.0813	184.8	0.0
100	0.482	53.75	0.0756	13.9	0.0
180	0.513	51.84	0.0699	3.87	0.0
260	0.545	49.93	0.0642	1.74	0.0
340	0.577	48.02	0.0585	1.00	0.0
420	0.608	46.11	0.0528	0.65	0.3
500	0.640	44.19	0.0471	0.47	1.2
580	0.672	42.28	0.0414	0.36	4.1
600	0.680	41.80	0.0400	0.33	5.4

Make the Right Fluid Decision

To assist in your fluid decision-making, Dow's FLUIDFILE™ Software provides an overview of our fluids line, guidance in choosing a fluid chemistry based on your actual system conditions and profiles of the individual fluids. It makes choosing the right fluid easier and more convenient.

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