



DOWTHERM T

Synthetic Organic Heat Transfer Fluid

DOWTHERM* T heat transfer fluid is a mixture of C₁₄-C₃₀ alkyl benzenes intended for use in applications that require liquid phase heat transfer. DOWTHERM T fluid can be used in non-pressurized systems, and is pumpable below -10°C (14°).

Recommended use temperature range:

DOWTHERM T fluid has an optimum maximum use temperature of 288°C (550°F). It can be used to an extended bulk temperature of 315°C (600°F).

Features

- Designed for use in non-pressurized systems
- Liquid phase operation only
- Good low temperature properties allow for low temperature start-up
- Has a high flash point
- Good thermal stability at the maximum use temperature
- Single dose oral toxicity is considered to be extremely low, LD₅₀ in rats >15,800 mg/kg.

Expansion Tank Design: Even though DOWTHERM T fluid can be operated in a non-pressurized system, it is recommended that the tank have an inert atmosphere. Nitrogen padding should be used on the expansion tank to exclude oxygen from the heat transfer system. The presence of oxygen will cause accelerated fluid degradation, which will considerably shorten the fluid lifetime.

For additional system design information please consult *Equipment for Systems Using DOWTHERM Heat Transfer Fluids* (Form No. 176-01335).

For safety and handling information, please refer to the product Material Safety Data Sheet.

Typical Properties of DOWTHERM T Fluid†

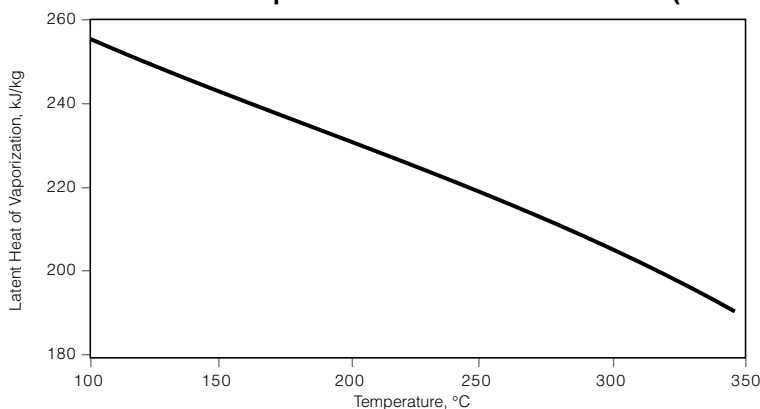
Composition: C₁₄ to C₃₀ alkyl benzene derivatives

Color: Clear, yellow liquid

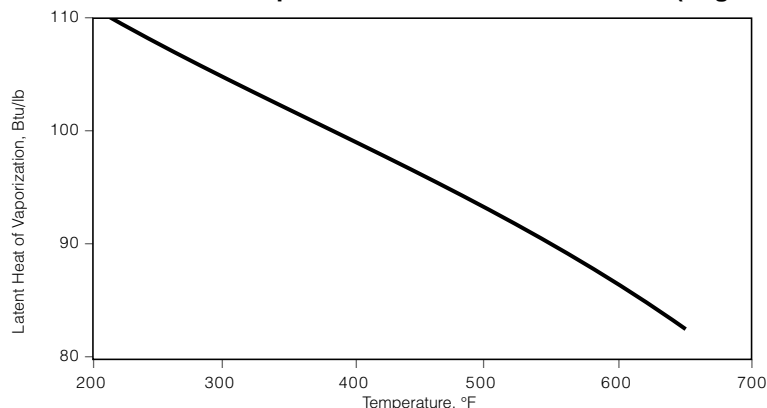
Property	SI Units	English Units
Distillation Range,		
Initial Boiling Point	345°C	653°F
20% by volume	210°C	410°F
Flash Point, COC	188°C	370°F
Fire Point, COC	352°C	665°F
Autoignition Temperature	375°C	707°F
ASTM D-2155		
Density @ 25°C (77°F)	869.8 kg/m ³	54.36 lb/ft ³
Estimated Critical Temperature	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	42808 kJ/kg	18373 Btu/lb

† Not to be construed as specifications

Calculated Latent Heat of Vaporization for DOWTHERM T Fluid (SI Units)



Calculated Latent Heat of Vaporization for DOWTHERM T Fluid (English Units)



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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 mPas	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 ² (°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

For further information, call...

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