

Duratherm has been a leader in the heat transfer industry for more than 25 years, providing comprehensive technical support services and delivering a full range of fluids that achieve optimal performance in every application.

Applications

Duratherm 450 is specifically engineered for applications requiring process heating and cooling efficiently between 30°F and 450°F.

Economical and thermally stable, Duratherm 450 offers an excellent alternative to costly synthetics and aromatic fluids while delivering precise and efficient cooling down to 30°F.

The Difference

Duratherm 450 contains the industries most effective and resilient blend of additives to ensure long-lasting, trouble-free service.

Our exclusive system includes a proprietary, dual stage anti-oxidant and a special blend of metal deactivators, extenders, and other agents that prolong fluid life and help keep systems clean. That also means longer life for parts like pumps and rotary seals.

Lasts longer

Oxidation can cripple your system. Left unchecked, it will ultimately cause catastrophic failure and costly downtime. That's why Duratherm 450 offers unsurpassed levels of protection against oxidation, and a service life that other fluids simply can't match.

Runs Cleaner

Duratherm 450 delivers superior resistance to sludging, a problem plaguing most other fluids. That makes it the best defense against extreme oxidation found in many of today's demanding manufacturing environments, including plastics processing, molding, casting, asphalt, paint, chemical and a wide variety of other applications.

In fact, our exclusive additive technology makes Duratherm 450 the perfect solution for all applications, large or small requiring precise temperature control up to 450° F (232°C).

Environmental

Duratherm 450 is environmentally friendly, non-toxic, non-hazardous and non-reportable. It poses no ill effect to worker safety and does not require special handling. After its long service life, Duratherm 450 can easily be disposed of with other waste oils.

System Cleaning

If your existing fluid has let you down and left you with a system full of sludge or carbon, we've developed a full line of System Cleaners to get your system back to like-new condition. Contact us for complete details.

Synopsis

Duratherm 450 is an oxidative and thermally stable, high performance, long lasting, environmentally friendly heat transfer fluid. Offering precise temperature control and long life at an economical cost.

Properties	Test Method	Duratherm 450
Appearance		Crystal Clear
Maximum use Temperature		232°C 450°F
Density at 38°C, g/ml (lb/ft ³)	ASTM D1298	0.850 (53.1)
at 260°C, g/ml (lb/ft ³)		0.701 (43.8)
at 316° C, g/ml (lb/ft ³)		0.662 (41.3)
Flash Point, °C (°F)	ASTM D92	150°C (302°F)
Fire Point, °C (°F)	ASTM D92	163°C (327°F)
Autoignition Temperature, °C (°F)	ASTM E-659-78	329°C (625°F)
Carbon Residue, % Mass	ASTM D189A	0.005
Sulphur Content, weight %	X-RAY	<.001
Cu Strip Corrosion	ASTM D130	1a
Average Molecular Weight		372
Viscosity, cSt at 40° C (104° F)	ASTM D445	4.8
cSt at 100° C (212° F)		2.6
cSt at 232°C (450° F)		0.60
Pour Point, °C (°F)	ASTM D97	-45°C (-49°F)
Coefficient of Thermal Expansion, %/°C(%/°F)		0.1016 (0.0564)
Thermal Conductivity, W/m K (BTU/hr F ft)		
at 38°C (100° F)		0.141 (0.082)
at 65°C (150°F)		0.140 (0.081)
at 232°C (450° F)		0.128 (0.074)
Heat Capacity, kJ/kg K (BTU/lb F)		
at 38°C (100°F)		2.13 (0.51)
at 65°C (150°F)		2.22 (0.53)
at 232°C (450°F)		2.72 (0.65)
Vapor Pressure, kPa (psi)	ASTM D2879	
at 15°C (60°F)		0.00 (0.00)
at 38°C (100°F)		0.62 (0.09)
at 232°C (450°F)		22.27 (3.23)
Boiling Point °C (°F)		
10%		249 (481)
90%		455 (851)

The values quoted are typical of normal production. They do not constitute a specification.