

### OVERVIEW

**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** heat transfer fluid offers an excellent alternative to costly synthetics and aromatic fluids while delivering precise and efficient cooling down to 30°F.

### APPLICATION

**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. **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.

### THE DIFFERENCE

**Duratherm 450** heat transfer fluid 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** heat transfer fluid offers unsurpassed levels of protection against oxidation, and a service life that other fluids simply can't match.

### RUNS CLEANER

**Duratherm 450** heat transfer fluid 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** heat transfer fluid 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** heat transfer fluid can easily be disposed of with other waste oils.

### DURATHERM 450 PROPERTIES

<b>Appearance:</b> colorless, clear and bright liquid		
<b>Maximum Bulk/Use Temp.*</b>	450°F	232°C
<b>Flash Point ASTM D92</b>	302°F	150°C
<b>Fire Point ASTM D92</b>	327°F	163°C
<b>Autoignition ASTM E-659-78</b>	625°F	329°C
<b>Viscosity ASTM D445</b>		
cSt at 104°F / 40°C	4.8	
cSt at 250°F / 121°C	1.3	
cSt at 450°F / 232°C	0.6	
<b>Pour Point ASTM D97</b>	-49°F	-45°C
<b>Density ASTM D1298</b>	<b>lb/ft<sup>3</sup></b>	<b>g/ml</b>
at 100°F / 38°C	53.1	0.850
at 250°F / 121°C	49.5	0.793
at 450°F / 232°C	44.8	0.717
<b>Average Molecular Weight</b>	372	
<b>Carbon Residue ASTM D189</b>	0.005	% Mass
<b>Sulphur Content X-RAY</b>	<.001	weight %
<b>CU Strip Corrosion ASTM D130</b>	1a	
<b>Thermal Expansion Coefficient</b>	0.0564 %/°F	0.1011 %/°C
<b>Thermal Conductivity</b>	<b>BTU/hr F ft</b>	<b>W/m.K</b>
at 100°F / 38°C	0.082	0.142
at 500°F / 260°C	0.079	0.137
at 600°F / 316°C	0.074	0.128
<b>Heat Capacity</b>	<b>BTU/lb F</b>	<b>kJ/kg K</b>
at 100°F / 38°C	0.510	2.135
at 250°F / 121°C	0.57	2.386
at 450°F / 232°C	0.650	2.721
<b>Vapor Pressure ASTM D2879</b>	<b>psia</b>	<b>kPa</b>
at 100°F / 38°C	0.09	0.62
at 250°F / 121°C	0.33	2.28
at 450°F / 232°C	3.23	22.27
<b>Distillation Range ASTM D2887</b>	10%	481°F (249°C)
	90%	851°F (455°C)
<b>*Maximum Film Temp.</b>	490°F	254°C

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