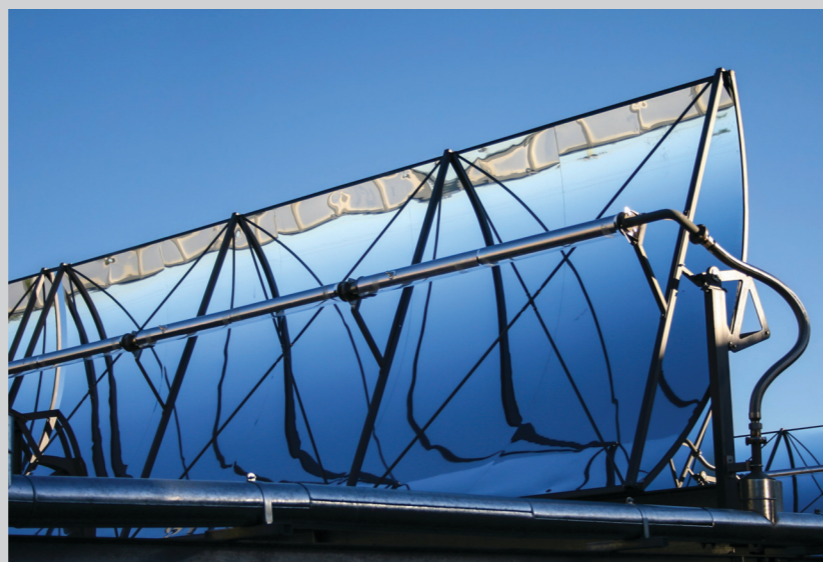


PREMIUM SYNTHETIC THERMIC FLUID

HP HYTHERM ALPHA

HP HYTHERM GAMMA



Applications

- As a heat transfer fluid in solar collector field to transfer the thermal energy for storage / process heat/steam generation/ heat exchange with fluid mediums with heat exchanger arrangements in **concentrated solar thermal** and power applications
- As a heat transfer medium in **waste heat recovery (WHR)** power plants in cement industry to transfer thermal energy from heat generating equipment such as rotary kilns
- As a heat transfer medium in **chemical process industries** with applications such as tank heating and adhesive manufacturing with mentioned temperature range
- Heat transfer medium in waste heat recovery in **steam Organic Rankine cycle** applications
- As a heat transfer medium in crude oil refinery in the areas of solvent de-asphalting units
- Used as the heat exchange fluid in Concentrated Solar Thermal Plant, Concentrated Solar Power Plant, Waste heat recovery, Chemical process industries, polymer process industries and refining applications



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HP HYTHERM ALPHA PREMIUM SYNTHETIC THERMIC FLUID

DESCRIPTION

HP HYTHERM ALPHA is a high performance synthetic heat transfer fluid designed to meet the demands of liquid or vapour phase systems with indirect heat transfer.

FEATURES & BENEFITS

- Operating temperature is 20 °C to 240 °C (68 °F to 464 °F) in liquid phase systems
- Operating temperature is 241 to 370 °C (465 °F to 698 °F) in vapour phase systems with low freeze point 15 °C (59 °F)
- Excellent for use in heat transfer fluid systems, which require precise temperature control, because of its ability to operate in vapour phase
- Low viscosity and exceptional thermal stability for consistent performance
- Mixture of synthetic aromatic compounds that provide heat transfer fluid flexibility performing vapour and liquid phases

PHYSICO-CHEMICAL PROPERTIES (Typical)

Temperature (°C)	Viscosity (cSt)	Conductivity (kcal/m hr.C)	Specific Heat (Kcal/g°C)	Specific Heat (J/g°C)	Density (g/cc)
25	3.10	0.1763	0.00046	1.962	1.05
100	0.82	0.1496	0.00051	2.152	0.97
150	0.62	0.135	0.00054	2.278	0.93
200	0.46	0.1221	0.00057	2.404	0.88
250	0.39	0.1109	0.00060	2.530	0.83
300	0.35	0.097	0.00064	2.658	0.79
320	0.34	0.096	0.00065	2.708	0.77

Maximum bulk temperature	370 °C
Maximum film temperature	390 °C
Specific Gravity @29.5 oC	1.046
Color	Water white liquid
Kin. Viscosity. @ 100°C, cSt	0.886
Viscosity Index	95
Flash Point. COC. °C	120.5
Fire Point. °C	125
Auto ignition Point °C	-
Pour Point. °C	15
TAN. Mg KOH/g	<0.2 mg KOH/g

Carbon Residue. Wt %	0
Copper Corrosion	1A
Distillation Properties	
Initial Boiling Point, °C	213
10% off, °C	220
50% off, °C	239.3
90% off, °C	244.18
Final Boiling Point, °C	405.9

HP HYTHERM GAMMA PREMIUM SYNTHETIC THERMIC FLUID

DESCRIPTION

HP HYTHERM GAMMA is a high performance synthetic heat transfer fluid designed to meet the demands of liquid or vapour phase systems and indirect heat transfer.

FEATURES & BENEFITS

- Operating temperature is 12 °C to 257 °C (54 °F to 495 °F) in liquid phase systems
- Operating temperature is 258 to 400 °C (496 °F to 752 °F) in vapour phase systems with low freeze point 12 °C (64.4 °F)
- Excellent for use in heat transfer fluid systems, which require precise temperature control, due to its ability to operate in vapour phase
- Low viscosity and exceptional thermal stability for consistent performance
- Mixture of synthetic aromatic compounds that provide heat transfer fluid flexibility performing vapour and liquid phases

PHYSICO-CHEMICAL PROPERTIES (Typical)

Temperature (°C)	Viscosity (cSt)	Conductivity (kcal/m hr.C)	Specific Heat (Kcal/g°C)	Specific Heat (J/g°C)	Density (g/cc)
25	3.27	0.118	0.00039	1.635	1.030
100	0.85	0.102	0.00043	1.830	0.952
150	0.562	0.092	0.00046	1.962	0.911
200	0.403	0.834	0.00052	2.094	0.863
250	0.312	0.075	0.00054	2.216	0.804
300	0.257	0.068	0.00056	2.346	0.755
320	0.240	0.065	0.00057	2.398	0.736

Maximum bulk temperature	380 °C
Maximum film temperature	400 °C
Specific Gravity @29.5 °C	1.030
Color	Water white liquid
Kin. Viscosity. @ 100°C, cSt	0.85
Viscosity Index	98
Flash Point. COC. °C	118
Fire Point. °C	127
Auto ignition Point °C	-
Pour Point. °C	15
TAN. Mg KOH/g	<0.2 mg KOH/g

Carbon Residue. Wt %	0
Copper Corrosion	1A
Distillation Properties	
Initial Boiling Point, °C	229.79
10% off, °C	236
50% off, °C	244.6
90% off, °C	250.14
Final Boiling Point, °C	328