

# HTF SERIES & SYNTEC HTF (HEAT TRANSFER OIL) THERMIC FLUID

(HTF-32 is Equivalent of Shell Thermia B Heat Transfer Oil, Hytherm 500& 600 & Therminol 55)

## DESCRIPTION

**HTF SERIES** heat transfer fluids with highly refined paraffinic base oils to provide excellent heat conduction thermal properties in chemical processing plants. It contains oxidation stability & non-corrosive to equipment. Designed to minimize coking and varnish build up. It provides extended oil life, provided efficient fluid heating and good pump circulation is ensured, such that film temperatures on the heater surface do not exceed the limits below.

**SYNTEC HTF** uses the hydrogenated terphenyls chemistry of the most popular high temperature liquid phase heat transfer fluid. A superior synthetic heat transfer fluid that delivers outstanding performance and thermal stability. **SYNTEC HTF** Heat transfer fluid offers excellent heat transfer properties over extended periods operating at continuously high operating temperatures.

## OPERATING TEMPERATURE

- **HTF SERIES**: operating temperature up to 305°C to 335°C
- **SYNTEC HTF**: operating temperature upto -3 °C to 345 °C (27 to 653 F)

## APPLICATIONS

- **HTF SERIES** are designed for use in closed system boilers and other transfer systems equipped with expansion tanks where temperatures do not exceed 600°F.
- **HTF SERIES** versatile applications are for all types of extensive product finds in textile, Constructions & Mining, pharmaceuticals, chemical and processing industries.
- **SYNTEC HTF** is suitable for use in heat transfer systems of food, feed and drink plants.

## PROPERTIES

ISO GRADE	HTF-22	HTF-32	HTF-42	HTF-46	HTF-68	SYNTEC HTF
Appearance	C & B	C & B	C & B	C & B	C & B	Pale Yellow
Density, @15 °C.	0.852	0.857	0.862	0.867	0.872	0.88
Viscosity @ 40 °C cSt	22.0	32.0	41.0	46.0	68.0	30.7
Viscosity @ 100°C cSt	3.8	4.65	6.2	6.2	8.6	3.7
Viscosity Index	100	104	106	105	95	114
Flash Point	190	215	225	221	230	260
Pour Point	-17	-15	-13	-15	-12	-27
Color	1.0	1.0	1.0	1.0	1.0	1.0
Conradson Carbon, %	Nil	Nil	Nil	Nil	Nil	Nil
API Gravity	32	32	32.5	32	30.1	32

## BENEFITS & ADVANTAGES

- Capable of an extremely long service life without deposit formation or viscosity increase.
- High heat transfer rates with improved operating efficiency.
- Flexible for combined heating and cooling cycles
- Capable of an extremely long service life without deposit formation or viscosity increase.
- Provides good low temperature fluidity which helps easy starting of cold system.
- High heat transfer rates with improved operating efficiency.
- Protection against corrosion & Flexible for combined heating and cooling cycles.

## POWERMAXX HTF TYPICAL THERMAL PROPERTIES

ISO grade	HTF 21 (32/46)	ISO 32	HTF 46
<b>Vapor Pressure, psio (kpo)</b>			
@15.6°C(60°F)	0.0036(.025)	0.0036 (.025)	0.0036 (.025)
@38°C(100°F)	0.0043(.03)	0.0043 (.03)	0.0043 (.03)
@160°C(320°F)	0.032(.022)	0.032 (.022)	0.032 (.022)
@288°C(550°F)	0.730(.03)	0.860 (5.93)	0.730 (.03)
<b>Coeficiente/Thermal Expansion, vol%/°C(X/°F)</b>			
@15.6°C(60°F)	0.102(.056)	0.102(.056)	0.102(.056)
@38°C(100°F)	0.102(.056)	0.102(.056)	0.102(.056)
@160°C(320°F)	0.102(.056)	0.102(.056)	0.102(.056)
@288°C(550°F)	0.102(.056)	0.102(.056)	0.102(.056)
<b>Thermal Conductivity, Btu/hr•ft•°F</b>			
@15.6°C(60°F)	0.079	0.079	0.081
@38°C(100°F)	0.079	0.079	0.079
@160°C(320°F)	0.074	0.074	0.074
@288°C(550°F)	0.07	0.07	0.07
<b>Specific Heat Capacity, Cp, Btu/hr-lbs-°F</b>			
@15.6°C(60°F)		0.573	
@38°C(100°F)		0.583	0.450 0.468
@160°C(320°F)	0.581	0.664	0.581
@228°C	0.683	0.747	0.683

### POWERMAXX HTF Charging Procedure

If you simply need to recharge **POWERMAXX HTF SERIES** into your system, the following procedure can be used.

1. Operate the system at 230°F (110°C) to 255°F (124°C) or just below the flash point of the HTF. This will ensure that particulates are adequately suspended in the HTF so they can be removed when the fluid is drained.
2. Turn off the heater and continue to run the circulating pump to keep the particle suspended as you allow the system temperature to cool to an acceptable temperature to allow the HTF to be safely drained from the system.
3. Stop the circulating pump and drain the HTF quickly from all low points.
4. Recharge the system with POE from all the low point drains in the system to prevent the formation of air pockets. Open the high point vents in the system to purge the air from the system and close them once the air is removed.
5. Start the circulating pump without heat to help remove any air pockets (you will hear them working their way into the expansion tank). When all air pockets are removed, you can apply heat.

### POWERMAXX HTF Heat Transfer Maintenance Fluids

Maintaining the cleanliness of your heat transfer equipment is essential for efficient operation. Periodically the heat transfer system should be cleaned to remove varnish, carbon, sludge and other process contaminants that accumulate over time. Cleaning the system is also recommended before charging the system with a new type of heat transfer fluid

**POWERMAXX LUBE INDIA**

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