

## **THERMIC FLUIDS**

HPCL markets thermic fluids under the brand names of HYTHERM. These specially formulated oils provide excellent performance in a very broad range of applications. These grades are formulated from specially derived petroleum base stocks having exceptional resistance to degradation during high temperature use.

### **HYTHERM 500**

This is a heat transfer oil indigenously developed to provide the finest performance and broadest range of applications in Textile, Chemical, Paint & Varnish and Petrochemical industries. The product is manufactured from petroleum stocks produced by special refining process in which the thermally unstable components are removed. Hytherm 500 is recommended in service involving a maximum bulk temperature of 290°C.

In addition it has the following characteristics.

- Excellent oxidation & chemical stability
- Good heat transfer properties.
- Low volatility
- Non-corrosive and non toxic

### **HYTHERM 600**

This is a superior oil developed for heat transfer systems where bulk operating temperature go up to 310°C. This product is derived from the finest quality petroleum base stocks and is fortified with high performance additives to enhance performance at higher temperatures.

It has the following outstanding features.

- Ability to withstand higher temperature upto 310°C
- Increased life, reduced oxidation and thermal degradation
- Minimal fouling and deposit formation on heat transfer surface. Hence sustained heat transfer characteristics.

Hytherm 600 gives excellent performance in high temperature heat transfer systems. It can even replace synthetic products with a few minor systems modifications and operate satisfactorily subject to the above temperatures limit.

## FLUSHING/FILLING OF HEAT TRANSFER SYSTEMS

Heat transfer systems should be flushed before initial start up and at each oil change. Flushing is desirable because deposits within the systems can reduce the rate of heat transfer and cause degradation of the oil.

The necessity of properly cleaning the heat transfer system prior to initial start up and at the time of system oil change can be significant factor in extending the life of heat transfer system operation. Flushing agents used for cleaning should be chosen carefully. Diesel, kerosene and solvents should not be used as flushing fluids.

The flushing oil, when flushing the system, should be heated to approximately 80°C and circulated for sufficient time to completely disperse the deposits. It may be necessary to provide a clean out trap to physically remove the sludge that is deposited in the expansion tank and heating unit. When severe choking is not present, flushing results in satisfactory cleaning. However when severe choking is present, mechanical cleaning may be necessary.

### **HYTHERM**

<b>CHARACTERISTICS</b>	<b>500</b>	<b>600</b>
Viscosity Kin, cSt, @ 40°C	30	33
Flash Point, COC, °C	>200	>200
Pour Point, °C	0	0
Copper Strip Corrosion 3 hrs @100°C	1	1
Neut.No. mg KOH/gm	0.15	0.15
Specific Heat, K cal/kg°C		
@ 260°C	0.629	0.630
@ 280°C	0.647	0.640
@ 300°C	0.665	0.666
Thermal Conductivity		
Kcal/hr-mt-°C		
@ 260°C	99.7	96.6
@ 280°C	98.4	95.3
@ 300°C	97.2	94.1