HEAT TRANSFER OILS

PRODUCT DESCRIPTION

Hi-Tec Heat Transfer Oils are high performance fluids intended for use in closed indirect heating installations. They are formulated from highly refined base stocks that are resistant to thermal cracking and chemical oxidation.

Hi-Tec Heat Transfer Oils have good heat transfer efficiency and the viscosities are such that they can be pumped readily at both start-up and operating temperatures. The flash point of these fluids will not decrease significantly in service because of the fluid's resistance to thermal cracking at the operating temperatures for which they are recommended.

Hi-Tec Heat Transfer Oils are very thermally stable and capable of an extremely long service life without deposit formation or viscosity increase. They demonstrate specific heats and thermal conductivities that provide more rapid heat dissipation.

Hi-Tec Heat Transfer Oils are may be used in open, cold-oil sealed and indirect heating and cooling systems in all kinds of industrial processes. **Hi-Tec Heat Transfer Oils** have excellent GM Quenchometer (ASTM D-3520) performance.

APPLICATIONS

Hi-Tec Heat Transfer Oils can be used in open installations where fuming of the oil could be a problem. Specific application ranges and advice are (temperature range for bulk fluids):

- Closed systems: up to 300°C
- Open systems: up to 160°C

APPLICATION CONSIDERATIONS:

Ideally **Hi-Tec Heat Transfer Oils** should not be mixed with other oils since this may impair the excellent thermal and oxidation stability of the **Hi-Tec Heat Transfer Oils** and may cause changes in other properties; thus complicating the interpretation of analyses made to determine the fluid's useful life.

If the fluid is used above the recommended maximum temperatures, vapor lock may result unless the system is designed to operate at the higher temperature by pressurizing with an inert gas such as nitrogen. However, at higher temperatures, fluid life will be shortened because the rate of thermal degradation increases markedly as temperatures rise above the recommended limit.

In well-designed systems the temperature of the oil film surrounding the heating element should be about 15°C to 30°C above the bulk oil temperature. If higher than this, the service life of the fluid may be shortened and sludge and coke may be deposited, which would interfere with the heat transfer rates.

As with other mineral oils, **Hi-Tec Heat Transfer Oils** should be used only in systems with forced circulation. Systems that depend on convection for circulation of the heat transfer medium do not provide a rapid enough flow to prevent local overheating, resulting in a rapid deterioration of the fluid.

Further, these fluids are not recommended for use in open systems where hot fluid is exposed directly to the air. If hot fluid sprays or escapes from leakage points, it may spontaneously ignite.

Hi-Tec suggests that the equipment manufacturers' recommendations for viscosity grade, performance requirements and general operating conditions should be checked prior to use.

TYPICAL PROPERTIES

Property	Units	ASTM Method	Typical Results					
ISO Viscosity	-	-	**12**	**21**	**25**	**32**	**68**	**90**
Product Code (HI6-)	-	-	2872	2876	2877	2873	2880	2874
Density @ 15℃	kg / L	D1298	834	850	858	871	873	879
Viscosity @ 40℃	cSt	D445	12	21	25	32	68	90
Viscosity @ 100℃	cSt	D445	3	4.25	4.5	5.4	8.8	11
Flash Point	℃	-	200	200	200	220	250	260
Spontaneous Ignition Temperature	℃	-	>400	>400	>400	>400	>400	>400
Recommended Temperature Maximum	℃	-	250	300	300	300	300	300