

## HEAT TRANSFER OILS

**Heat Transfer Oils** are high performance products 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.

The 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 oils will not decrease significantly in service because of the resistance to thermal cracking at the operating temperatures for which they are recommended.

**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.

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

### Applications

**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 oils):

Closed systems: up to 300C

Open systems: up to 160°C

**Application Considerations: Heat Transfer Oils** should not be mixed with other oils since this may impair the excellent thermal and oxidation stability of the **Heat Transfer Oils**; cause a change in other properties; and complicate the interpretation of analyses made to determine the oils useful life.

If the oil 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 oil may be shortened and sludge and coke may be deposited which would interfere with the heat transfer rates.

As with other mineral oils, **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 and rapid deterioration of the oil. Further, these oils are not recommended for use in open systems where hot oil is exposed directly to the air.

If the oil sprays or escapes from leakage points, hot **Heat Transfer Oils** may spontaneously ignite.

### TYPICAL CHARACTERISTICS

Properties	Method	32	100
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Viscosity @ 40°C cSt	ASTM D7042	32	90
Viscosity @ 100°C cSt	ASTM D7042	5	11
Density @ 15 °C kg/l	ASTM D4052	0.87	0.89
Flash Point °C	ASTM D92	>200	>200
Spontaneous Ignition Temperature °C		>400	>400
Recommended Temperature °C max		300	300
Neutralisation Value mg KOH/g	ASTM D974	<0.01	<0.01
Copper Corrosion (3 hr/100 °C)	ASTM D130	1A	1A

### Packs

**1000 litre IBC**  
**205 litre Metal drum**  
**20 litre Plastic drum**