



Mobiltherm® 610

Heat Transfer Oils

Product Description

Mobiltherm 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. They have good heat transfer efficiency and their viscosities are such that they can be pumped readily at both start-up and operating temperatures. The flash points of these oils will not decrease significantly in service because of their resistance to thermal cracking at the operating temperatures for which they are recommended. The Mobiltherm products are very thermally stable and are 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. Mobiltherm 610 heat transfer oil is recommended for use in open, cold-oil sealed, indirect heating and cooling systems in all kinds of industrial processes.

Features and Benefits

Mobiltherm oils are important members of the Mobil brand of specialty fluids that have gained a reputation for performance and reliability, even in severe applications. Application of modern refining techniques is a key factor in the excellent features of these products.

Applications

Mobiltherm 610 can be used in open installations where fuming of the oil could be a problem. Specific application ranges and advice are:

Bulk Oil Temperature Ranges

Closed systems -

Open systems 0°C to 250°C

Application Considerations: Mobiltherm heat transfer oils should not be mixed with other oils since this may impair the excellent thermal and oxidation stability of the Mobiltherm oils, cause a change in other properties, and complicate the interpretation of analyses made to determine the oils useful life. If the oils are used above their 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 15oC to 30oC 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, Mobiltherm 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 they spray or escape from leakage points, hot Mobiltherm oils may spontaneously ignite.

- Open systems provided the bulk temperatures do not exceed the maximum temperatures quoted in the table above.

Typical Properties

Mobiltherm 610	
Viscosity, ASTM D 445	
cSt @ 40°C	113
cSt @ 100°C	11.5
Pour Point, °C, ASTM D 97 (MAX.)	-6
Flash Point, °C, ASTM D 92 (TYP.)	250
Specific Gravity @15 °C kg/l, ASTM D 4052	0.880

Health and Safety

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. MSDS's are available upon request through your

sales contract office, or via the Internet on (insert Internet address here). This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

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Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit www.exxonmobil.com

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