PRODUCT BULLETIN

The Future of Energy, Resources and Materials
JX Nippon Oil & Energy Corporation
6-3, Otemachi 2-chome, Chiyoda-ku
Tokyo 100-8162 JAPAN TEL +81-3-6275-5152

IND-4503-0206E

HITHERM

HIGH-QUALITY HEAT TRANSFER OILS

In recent years, the synthetic fiber, pharmaceutical, plastic, and other chemical and foodstuff industries have seen increases in the size and heating capacity of equipment, improvements in product quality, and the streamlining of the operation and management of factories. As a result, heat control in chemical reactors has become very important, and in many fields heating methods have been shifting away from electrical heating and direct flames to indirect heating methods using heat transfer oils.

Indirect heating using heat transfer oils offers many advantages:

1. High temperatures can be obtained at low pressures.
2. An even heat can be obtained without hot or cold spots.
3. The temperature and amount of heat transferred can be controlled freely and precisely.
4. Both rapid heating and rapid cooling are possible.

With HITHERM, all of these advantages can be obtained completely.

HITHERM is a mineral-oil-based heat transfer oil that has been solvent refined to a very high level. Its excellent high-temperature oxidation stability ensures very long use with little sludge formation. Its superior stability and anticorrosion properties also mean that it will not corrode metal even at high temperatures, so there are no special restrictions on what materials it can be used with.

● SPECIAL FEATURES

1. Excellent Heat and Oxidation Stability

The most important properties of a heat transfer oil are its decomposition caused by the heat it absorbs while being circulated and its stability with regard to high-temperature oxidation. If tar containing sludge, resin, asphalt, etc., resulting from these factors adheres to pipe surfaces, then the heat transfer efficiency of the oil will decrease and oil circulation will be impaired.

Since materials that are unstable with respect to heat have been removed from HITHERM with a special sophisticated refining process and other special additives have been blended into the oil, there is very little sludge formation even when the oil is used for long periods at high temperatures.

Thus equipment operates smoothly with easy maintenance.

2. High Flash Point, Low Volatility and Vapor Pressure

An oil with high evaporation loss during use is not suitable as a heat transfer oil.

HITHERM has appropriate fractional distillation components, so there is little evaporation loss. Its low vapor pressure and the lack of vapor blockage in the circulating system eliminate any worry about cavitation inside pumps.

3. Good Low-Temperature Flow Properties with Little Change in Viscosity

Oils with bad flow properties during low-temperature starts can impair pump operation and cause partial overheating. Since HITHERM has a low flow point and high viscosity indexes, it experiences very little change in viscosity due to temperature changes.

● TYPICAL PROPERTIES OF HITECTHERM 32

		32	68	100
Density (15°C)	g/cm^3	0.867	0.886	0.886
Flash point (COC)	°C	222	268	274
Kinematic viscosity (40°C)	mm^2/s	32.0	65.2	110
Viscosity index		107	98	98
Pour point	°C	−12.5	−12.5	−12.5
TAN	mgKOH/g	0.04	0.03	0.03
Copper strip corrosion (100°C,3h)		1	1	1
Color (ASTM)		L1.0	L1.5	L3.0

⚠ Handling Precautions

▼ Follow the following precautions when handling this product.

- Read this product's Material Safety Data Sheet before using the product.
- Obey all applicable laws and regulations concerning the handling and disposal of this product, particularly laws and regulations related to fire safety, the treatment and disposal of waste and sewage, the prevention of water and ocean pollution, and workplace safety and hygiene.
  Please request the Material Safety Date Sheet where you purchased this product.