

# HITHERM

## HEAT TRANSFER OILS

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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.

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### ●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.

#### 4. Low Toxicity and Low Bad Smell

**HITHERM** is low toxicity and low bad smell since it is carefully selected mineral oil type hydrocarbon.

#### 5. High Heat Transfer Coefficients

**HITHERM** has higher specific heat and thermal

conductivity compared to the conventional mineral oils.

**●APPLICATIONS**

**HITHERM** is not recommended for use in open systems where hot oil is exposed directly to the air.(Purging with inactive gas, such as nitrogen, is preferable.)

**HITHERM** is recommended for use in

closed, indirect heating and cooling systems at bulk oil temperatures up to a maximum of 260°C.

**●CONTAINERS**

200-liter drums and 20-liter cans

**●TYPICAL PROPERTIES OF HITHERM**

ISO Viscosity Grade		32	68
Color (ASTM)		L1.0	L1.0
Density (15°C)	g/cm <sup>3</sup>	0.867	0.882
Kinematic viscosity (40°C)	mm <sup>2</sup> /s	32.0	65.2
Viscosity index		107	102
Flash point (COC)	°C	222	252
Pour point	°C	-12.5	-12.5
Acid number	mgKOH/g	0.04	0.04
Copper strip corrosion (100°C,3h)		1	1

Note: The typical properties may be changed without notice. (Feb. 2015)



**Handling  
Precautions**

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Not applicable
<b>Precautionary Statements:</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>