

# TOUGHLIX GREASE MP

## Energy-Saving, Multipurpose Extreme Pressure Grease

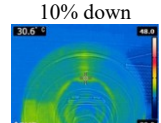
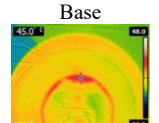
TOUGHLIX GREASE MP is energy-saving multipurpose extreme pressure grease, which is excellent in energy-saving, temperature rise suppression, sticking property and extreme pressure property. Since the lithium complex is adopted as a thickener, it also has excellent heat resistance and water resistance. TOUGHLIX GREASE MP can be used for grease lubrication points of various machines. TOUGHLIX GREASE MP can extend the bearing life and the grease supply interval, and contributes to the reduction of maintenance works because of reducing the temperature rise of the bearing when it is used.

### ● SPECIAL FEATURES

#### 1. Excellent Energy-Saving Property

TOUGHLIX GREASE MP, which is energy-saving multipurpose extreme pressure grease, shows superior energy saving effects in comparison with the market available grease (refer Table 1).

**Table 1 Energy saving test results**

Product		TOUGHLIX GREASE MP 2	Market available grease <sup>2</sup>
Thickener		Lithium complex	Lithium soap
Ball bearing	Electric energy reduction rate, %	11	Base
	Temperature increase* <sup>1</sup> ℃ (Thermography)	10% down 	Base 

\* 1: Measure the temperature rising from the test start temperature (room temperature)  
<Test conditions> Ball bearings, room temperature (conducted by ENEOS laboratory)

#### 2. Suppression of Bearing Temperature Rise

TOUGHLIX GREASE MP suppresses the bearing temperature rise in comparison with the commercially available grease by the effect of reducing friction and stirring resistance (refer Table1). Therefore, it extends the bearing life and the grease supply interval, and also contributes to the reduction of the maintenance works.

#### 3. Outstanding High Extreme Pressure Property

Because TOUGHLIX GREASE MP is formulated with extreme pressure agents, it can be used in the grease lubrication point of various machines.

#### 4. Superior Thermal Stability and Water Resistance

TOUGHLIX GREASE MP can be used in the high temperature lubrication point because of its high dropping point of over 250°C.

In addition, it can be used in the lubrication point where water is easily mixed, because it is hard to be washed away by water and has the property of small penetration change even if water is contaminated.

### ● Application

Ball bearings, roller bearings and gears of following equipment.

- various industrial machines
- various machine tools (main axis, ball screw of feeder, linear guide)
- construction machines
- agricultural machines
- various conveyor machines
- motors (electric machinery)
- air blowers
- pumps.

### ● CONTAINERS

	MP1	MP2
180kg drum	✓	✓
16kg pail can	✓	✓
630g bellows-type tube (6 pcs.)	✓	✓
400g bellows-type tube (20 pcs.)		✓
380g bellows-type tube* (20 pcs.)	✓	

\*: Normal 400 g bellows-type tube is applied due to its small density. The filling amount is 380 g.

## ● Typical Properties of TOUGHLIX GREASE MP

Grade		MP 1	MP 2*2
JIS No.		1	Not applicable to 2*2
Thickeners type		Lithium complex soap	Lithium complex soap
Appearance		Light yellow, Semi solid	Light yellow, Semi solid
Penetration (25°C, 60 strokes)		314	263
Dropping point	°C	Over 250	Over 250
Oil separation (100°C,24h)	mass%	4.5	0.9
High speed four-ball test (1800r/min), Weld load	N	3,090	3,090
Water washout resistance (38°C, 1h)	mass%	5	2
Operating temperature range (approx.)	°C	-20 to 175	-20 to 175

Note 1: The typical properties may be changed without notice. (February 2023)

Note 2: Compared with JIS No. 2 product, we have set it stiff.



## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil(s), Thickener, Additives
<b>Hazard pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Harmful to aquatic life Harmful to aquatic life with long lasting effects
<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>• Avoid release to the environment.</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/doctor.</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>