Hyrando FRZ
Fire-Resistant Water-Glycol Hydraulic Fluid

Hydraulic equipment is being used more and more widely as the equipment’s performance improves. Now hydraulic devices are often used near flames and high-temperature objects, where there is a risk of fire if the hydraulic fluid leaks out or the equipment ruptures. An effective method for preventing such fires and improving work safety is to use a fire-resistant hydraulic fluid. Hyrando FRZ is a water-glycol hydraulic fluid with a water content of about 40%, and it provides excellent fire resistance, chemical stability, and lubricating properties.

● SPECIAL FEATURES
1. Excellent Fire Resistance
   Because about 40% of Hyrando FRZ is water, it resists combustion and reduces the danger of fire.

2. Outstanding Lubricity
   Thanks to its outstanding wear prevention, Hyrando FRZ prevents wear to pumps and the interiors of hydraulic systems for long periods of time. It also has long rolling fatigue life, so it prevents fatigue wear to the bearings of piston pumps and other machinery.

3. Superb Corrosion Prevention
   Hyrando FRZ is very effective at preventing corrosion, so it provides superb rust and corrosion prevention for cast iron, steel, copper alloys, aluminum alloys, and other types of metal.

4. Excellent Thermal and Oxidative Stability
   Hyrando FRZ is blended with carefully chosen oxidation inhibitors that ensure excellent oxidative stability.

5. Extremely Good Temperature Characteristics
   Hyrando FRZ has a high viscosity index, so it undergoes little change in viscosity due to variations in temperature. It also has a low pour point. As a result, it maintains sufficient viscosity and keeps hydraulic pumps operating smoothly even when the ambient temperature changes sharply.

● PRECAUTIONS FOR USE
1. Materials
   Although Hyrando FRZ has low corrosivity against most metals, it may form sediment or sticky substances in the presence of zinc, magnesium and cadmium. Refrain from using Hyrando FRZ with these metals.

2. Sealing Materials
   Choose the optimal sealing material from among nitrile rubber, butyl rubber, ethylene propylene rubber, fluorinated rubber, silicone rubber, etc. Avoid using urethane rubber and absorptive materials such as asbestos, leather, and cork.

● APPLICATIONS
   Die cast machines, iron and steel casting equipment, hot rolling mills, and furnaces.

● CONTAINERS
   200-liter drums and 20-liter pail cans.

● TYPICAL PROPERTIES OF HYRANDO FRZ

<table>
<thead>
<tr>
<th>Grades</th>
<th>32</th>
<th>46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear red</td>
<td>Clear red</td>
</tr>
<tr>
<td>Density(15°C) g/cm³</td>
<td>1.054</td>
<td>1.079</td>
</tr>
<tr>
<td>Kinematic viscosity(40°C) mm²/s</td>
<td>31.7</td>
<td>51.2</td>
</tr>
<tr>
<td>Kinematic viscosity(100°C) mm²/s</td>
<td>6.23</td>
<td>9.92</td>
</tr>
<tr>
<td>Viscosity index</td>
<td>150</td>
<td>184</td>
</tr>
<tr>
<td>Pour point</td>
<td>&lt; -45</td>
<td>&lt; -45</td>
</tr>
<tr>
<td>pH</td>
<td>10.3</td>
<td>10.3</td>
</tr>
<tr>
<td>Reserve alkalinity</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Moisture content (KF method) %</td>
<td>40</td>
<td>41</td>
</tr>
</tbody>
</table>

Note: The typical properties may be changed without notice. (Sep. 2009)
## Handling Precautions

Follow these precautions when handling this product.

<table>
<thead>
<tr>
<th>Composition</th>
<th>Propylene glycol, Water, Additives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautionary</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Signal word</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard Statement</td>
<td>Causes eye irritation</td>
</tr>
</tbody>
</table>

### Precautionary Statements:

- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not allow the eyes to become exposed to the product. Do not swallow the product.
- Obtain special instructions before use.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

### Response:

- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.
- IF ON SKIN: Wash with plenty of soap and water.
- IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

### Storage:

- The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.
- Containers that have been opened must be tightly sealed.

### Disposal:

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.