RELACUT AS Series

Active Sulfur Type, Chlorine-free Anti-mist Cutting and Grinding Fluid

RELACUT AS series is a chlorine-free anti-mist type cutting fluid blended with properly-selected active sulfurized extreme-pressure agents combined with new friction modifiers. RELACUT AS series is an oil agent that is well-balanced between processability, cooling performance and permeability (cleanliness), and is suitable for general machining using machining centers and lathes. It is suitable for processing various steel materials such as carbon steel and alloy steel. RELACUT AS5 corresponds to JIS K 2241 Type N4, No.5. RELACUT AS10 and RELACUT AS30 correspond to JIS K 2241 Type N4, No.7.

● Special Features

1. Excellent cutting and grinding performances
   RELACUT AS Series exhibits excellent machining performance in cutting and grinding processing where machinability is required, because it contains new special active sulfur type extreme pressure agents and friction modifiers in highly refined base oil.

2. Excellent Anti-mist Performance
   RELACUT AS Series contains special mist prevention agents that reduce the amount of oil mist formed during machining. The result is an improved working environment.

3. Low odor
   Since the additives of RELACUT AS Series are low odor, the work environment is improved.

4. Contribution to the viewing of the processing point
   RELACUT AS Series enables users to observe the processing point easily because of the light color and reduced floating mist.

● Applications

RELACUT AS5
Cutting processing (such as fine hole drilling) and honing processing that require permeability to common steel materials

RELACUT AS10
General-purpose cutting such as lathe, drill and milling, and machining center processing for general steel materials

RELACUT AS30
General-purpose cutting such as lathe and milling, and machining center processing for general steel materials

● Containers

200-liter drums and 20-liter cans
Typical Properties of RELIACUT AS Series

<table>
<thead>
<tr>
<th></th>
<th>AS 5</th>
<th>AS10</th>
<th>AS30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Light brown, Liquid</td>
<td>Yellow, Liquid</td>
<td>Yellow, Liquid</td>
</tr>
<tr>
<td>Color(ASTM)</td>
<td>L1.5</td>
<td>L2.5</td>
<td>L1.5</td>
</tr>
<tr>
<td>Density</td>
<td>0.832</td>
<td>0.862</td>
<td>0.882</td>
</tr>
<tr>
<td>Kinematic viscosity(40°C)</td>
<td>mm²/s</td>
<td>4.65</td>
<td>11.9</td>
</tr>
<tr>
<td>Kinematic viscosity(100°C)</td>
<td>mm²/s</td>
<td>1.69</td>
<td>3.08</td>
</tr>
<tr>
<td>Flash point(COC)</td>
<td>°C</td>
<td>138</td>
<td>174</td>
</tr>
<tr>
<td>Pour point</td>
<td>°C</td>
<td>-25</td>
<td>-15</td>
</tr>
<tr>
<td>Acid number</td>
<td>mgKOH/g</td>
<td>0.32</td>
<td>0.30</td>
</tr>
<tr>
<td>Copper corrosion(100°C, 1h)</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Fatty content</td>
<td>mass%</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Sulfur content</td>
<td>mass%</td>
<td>0.93</td>
<td>1.13</td>
</tr>
</tbody>
</table>

Note: The typical properties may be changed without notice. (July 2016)

Handling Precautions

Follow these precautions when handling this product.

RELIACUT AS5, RELIACUT AS10

Composition: Base Oil, Additives

Precautionary pictograms:

Signal word: Danger

Hazard Statement: May be fatal if swallowed and enters airways

Precautionary Statements:

Prevention
- 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.
- 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.
- Do NOT induce vomiting.

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.
- Store locked up.

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.
<table>
<thead>
<tr>
<th>Composition:</th>
<th>Base Oil, Additives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautionary pictograms:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Signal word:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hazard Statement:</td>
<td>Not applicable</td>
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