CITGO CITCOOL® SS-HD

DESCRIPTION: CITGO CITCOOL SS-HD is a water extendable semi-synthetic coolant recommended for heavy-duty applications. The product is suitable for job shops where one coolant is needed to machine a variety of metals in multiple operations.

FEATURES: • Forms stable emulsions in various water hardness up to 1000ppm
  • Low foaming tendencies
  • Medium oil content
  • Free of chlorine, secondary amines, phenols, nitrates, PCB’s, and heavy metals

BENEFITS: • Product performance is constant and machine remains clean
  • Reliable in-service performance and long sump life
  • Heavy-duty machining capability
  • Ease of disposal and friendly work environments

APPLICATIONS: CITGO CITCOOL SS-HD is recommended for general machining including thread cutting and forming, deep hole drilling and boring, reaming, and grinding of cast irons, ferrous alloys and stainless steels, free cutting aluminum alloys, oil resistant plastics, and other non-ferrous materials.

Material Compatibility

<table>
<thead>
<tr>
<th>Material</th>
<th>Recommended</th>
<th>Highly Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>P - Steels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M - Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K - Cast Iron</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N - Non-ferrous *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Might stain some sensitive aluminum alloys. e.g. 2000 and 7000 series

Refractometer Chart

Refractometer Reading at 10% = 6.8 °Brix
Refractometer Factor = 1.47

(Continued)
## TYPICAL PROPERTIES - CITGO CITCOOL® SS-HD

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Code</td>
<td>639335001</td>
</tr>
<tr>
<td>Appearance, Concentrate (neat)</td>
<td>Amber Fluid</td>
</tr>
<tr>
<td>Dilution (5% in DI water)</td>
<td>Semi-Translucent</td>
</tr>
<tr>
<td>Gravity, Specific, ASTM D1298, 60/60°F</td>
<td>1.02</td>
</tr>
<tr>
<td>Mineral Oil Content %</td>
<td>20</td>
</tr>
<tr>
<td>pH at 3% concentration</td>
<td>9.5 (5%)</td>
</tr>
<tr>
<td>Defoaming mL (5% in 50 ppm water)</td>
<td>Nil (60 sec.)</td>
</tr>
</tbody>
</table>

## METAL MACHINABILITY GROUPS

1. **Non-Ferrous, Soft Metals**
   - Turning, Boring, Milling, Forming, Drilling, Sawing: 5-7%
   - Tapping, Thread Rolling, Reaming, Screw Cutting, Broaching: 5-7%
   - Gear Shaping, Form and Thread Milling, Shaving, Hobbing, and Trepnning: 5-7%
   - Internal and External Grinding, Form and Thread Grinding: 5-7%
   - Stamping: 5-20%

2. **Nickel Alloys, Nitrality Steels, Cast Irons and Alloy Steels (up to 200 Brinell)**
   - Machining Operation: 5-7%
   - 8-10%

3. **Stainless Steels, "Monel" Metals, Cast Irons and Alloy Steels (200 to 300 Brinell)**
   - Machining Operation: 5-7%
   - 5-20%

4. **Titanium Alloys, High Tensile Nickel Alloys, Austentic Stainless Steels, Tool Steel and High Tensile Alloy Steels (300 to 400 Brinell)**
   - Machining Operation: 5-7%
   - 5-20%

**Notes:**
1. Dilution ratios shown are approximate and may require higher or lower water concentrations depending on a number of factors including the type of metal cut, machine speed, the severity of the operation, metal hardness, etc.
2. CITCOOL SS-HD might stain sensitive aluminum alloys such as 2000 and 7000 series alloys.

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