Orfom® and Molyflo® Collectors

**Orfom® and Molyflo® Collectors** are highly effective hydrocarbon based reagents for molybdenum and copper-molybdenum mineral sulfides flotation operations. These commercially proven collectors provide maximum sulfide mineral recoveries when added to the primary grinding stage. These products are very effective as the principal collector in primary molybdenum concentrators or as a co-collector in mixed mineral sulfide flotation operations. Our products are compatible with all conventional collectors like Orfom® MC collectors, xanthates, frothers, and depressants (such as Orfom® D8 depressant and NaSH). These products are stable over typical pH ranges.

### Typical Values of Oil Based Collectors

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Orfom® MCS Collector Oil</th>
<th>Molyflo® Collector Oil</th>
<th>Orfom® MCO Collector Oil</th>
<th>Orfom® MCX Collector Oil</th>
<th>ASTM Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity at 15.6 °C (g/ml)</td>
<td>0.825</td>
<td>0.942</td>
<td>1.01</td>
<td>0.811</td>
<td>D1298</td>
</tr>
<tr>
<td>Density Conversion (lbs/gal)</td>
<td>6.88</td>
<td>7.86</td>
<td>8.43</td>
<td>6.77</td>
<td>D1298</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>79</td>
<td>56</td>
<td>59</td>
<td>113</td>
<td>D93</td>
</tr>
<tr>
<td>Viscosity at 25 °C (mm²/sec)</td>
<td>2.3</td>
<td>3.4</td>
<td>45.6</td>
<td>7.4</td>
<td>D445</td>
</tr>
<tr>
<td>Pour Point (°C)</td>
<td>-16</td>
<td>-28</td>
<td>-35</td>
<td>-51</td>
<td>D97</td>
</tr>
</tbody>
</table>

**Orfom® MCS Collector**
- A highly effective, economical, high flashpoint reagent for optimum recovery as a primary collector in molybdenum sulfide mineral flotation
- Maximizes molybdenite recovery while minimizing pyrite recovery
- High flashpoint and non-seasonal variation provides benefits over typical streams like diesel and kerosene
- REACH compliant and classified as non-carcinogenic

**Molyflo® Collector**
- Considered the industry standard collector for molybdenite ores
- A medium viscosity collector which provides superior recovery for wide range particle size ores
- Maximizes molybdenite recovery while minimizing pyrite recovery
- REACH compliant

**Orfom® MCO Collector**
- Specially formulated higher viscosity reagent with proven recovery advantages as a co-collector in copper-molybdenum porphyry ores
- Demonstrates superior performance when added with secondary sulfide based collectors like Orfom® MC collectors directly into the primary grinding circuit.

**Orfom® MCX Collector**
- High flashpoint, synthetically produced, collector for use in fine grind sulfide-containing ores
- The absence of aromatics and nitrogen/sulfur oxides emission components provides exceptional recoveries where stringent environmental conditions are required
- Classified as non-carcinogenic, non-hazardous and is REACH compliant

Do not hesitate to contact us for Technical Support at miningtech@cpchem.com or for Customer Assistance at mining@cpchem.com. Product Safety information and Safety Data Sheets are available on our website at www.cpchem.com/mining.