Description

Capstone™ FS-83 is a solvent-borne additive that provides low surface tension in solvent-based paints. It is compatible with most organic solvent-based systems. The low surface tension enables better wetting, spreading, leveling to correct solvent-borne coating defects, such as fisheyes, crackers, pinholes, and orange peel. When cured into a coating, it provides water and oil repellency, as well as chemical resistance, to the film.

Even at very low use rates, FS-83 can deliver excellent repellency to the film, which can be measured by water and hexadecane contact angle. The typical use rate of FS-83 for most coating applications is from 0.02–0.1% on an active ingredient (A.I.) basis. For solvent-based paints, the typical use rate is 0.05 to 0.1%.

Applications

Paints and Coatings
- Improves wetting and leveling to eliminate craters, pinholes, fisheyes, and orange peel
- Improves water and oil repellency of dried film
- Compatible with wide range of solvent-based paints, such as alkyd, 1K, and 2K polyurethane systems

Waxes and Varnishes
- Improves wetting and leveling
- Reduces cratering and other coating defects
- Increases surface water and oil repellency
- Compatible with many solvent-based waxes and polishes

Fluoropolymer and PTFE Dispersion
- Improved dispersion stability

Typical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Light pale to yellow liquid</td>
</tr>
<tr>
<td>Composition</td>
<td>35% solids in butyl acetate (BuOAc)</td>
</tr>
<tr>
<td>Structure</td>
<td>Partially fluorinated acrylic copolymer</td>
</tr>
<tr>
<td>Ionic Character</td>
<td>Non-ionic</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.97 g/mL</td>
</tr>
<tr>
<td>Flash Point</td>
<td>28 °C (82 °F)</td>
</tr>
<tr>
<td>Stability</td>
<td>Product gels below 10 °C (50 °F), warming up the product to 25 °C (77 °F) will reverse gelling. Product is freeze-thaw stable. Mix well before use.</td>
</tr>
<tr>
<td>Solubility</td>
<td>&gt;5% in isopar-H, mineral spirits, butyl acetate, n-heptane</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>5 years</td>
</tr>
</tbody>
</table>

Performance

Water and Oil Contact Angles in Commercially Available Paints

![Advancing Water and Hexadecane Contact Angles](image)
Capstone™ Repellents and Surfactants

- Deliver more sustainable solutions with maximum performance
- Are in compliance with REACH requirements
- Are listed on TSCA inventory

<table>
<thead>
<tr>
<th>% Actives</th>
<th>MIBK</th>
<th>IPA</th>
<th>BuAc</th>
<th>Xylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>23.9</td>
<td>21.6</td>
<td>25.1</td>
<td>25.6</td>
</tr>
<tr>
<td>0.05</td>
<td>22.4</td>
<td>20.7</td>
<td>23.3</td>
<td>21.7</td>
</tr>
<tr>
<td>0.1</td>
<td>22.9</td>
<td>20.7</td>
<td>22.9</td>
<td>21.1</td>
</tr>
</tbody>
</table>

Surface Tension (dyne/cm at 25 °C [77 °F])

For questions regarding technical data, commercialization, and sampling:

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