XIAMETER™ OFX-5211 Fluid

Performance enhancer for agricultural chemicals. Silicone glycol copolymer for leathers.

**Features & Benefits**

- Very low surface energy in agricultural chemicals
- Low surface energy in leathers
- Rapid spreading and wetting for agricultural chemicals
- Highly efficient wetting agent for leathers
- Use below 1% for leathers

**Composition**

- Low viscosity silicone polyether liquid

**Applications**

- To enhance the performance of agricultural chemicals, especially water-soluble broadleaf herbicides, insecticides, fungicides and plant growth regulators.
- Wetting agent for synthetic leather manufacture. It wets the release paper to obtain a perfect replica of the embossment in transfer coating.
- Prevents crater formation in aqueous coatings when the substrate has a low surface tension.

**Typical Properties**

Specification Writers: These values are not intended for use in preparing specifications.

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear, amber - colored fluid</td>
<td></td>
</tr>
<tr>
<td>Viscosity at 25°C (77°F)</td>
<td>cSt</td>
<td>40</td>
</tr>
<tr>
<td>Flash point, closed cup</td>
<td>°C (°F)</td>
<td>&gt; 100 (&gt; 212)</td>
</tr>
<tr>
<td>Solids</td>
<td>%</td>
<td>100</td>
</tr>
</tbody>
</table>

**Description**

**Leather Applications**

XIAMETER™ OFX-5211 Fluid is a low viscosity, non-ionic poly-oxyethylene-modified polydimethyl-siloxane, more commonly referred to as silicone glycol copolymer. This product has been designed with a specific silicone to glycol ratio to afford a range of performance characteristics.

XIAMETER OFX-5211 Fluid is a highly efficient, low surface energy surfactant. This low surface energy can be achieved utilizing concentrations of the superwetting agent as low as 0.01 percent by weight.
Description (Cont.)

Agricultural Applications

XIAMETER OFX-5211 Fluid is a low molecular weight nonionic silicone polyether surfactant, developed to improve the wetting, spreading and penetration of agricultural chemicals. It may be used as a formulation ingredient in pesticide products, or as a tank-mix adjuvant for foliar applied chemicals. It is “exempt from tolerances” under 40 CFR 180.1001(c).

1 “Use as an adjuvant” refers to the use of this product as an additive to a pesticide for the purpose of enhancing the pesticide’s effectiveness for wetting more of the leaf surface (delivering the pesticide to a greater surface area for increased leaf penetration) and thereby providing rainfastness.

Performance Characteristics

Agricultural Applications

XIAMETER OFX-5211 Fluid reduces the surface tension of aqueous agricultural mixtures significantly lower than is achievable with conventional nonionic surfactants. At concentrations as low as 0.01 percent, XIAMETER OFX-5211 Fluid reduces surface tension below 23 dynes/cm (see Table 1), which produces very rapid wetting and spreading on hard-to-wet surfaces such as waxy leaves. Thus, complete coverage can be achieved with herbicides, insecticides, fungicides and other agricultural chemicals.

In addition to the rapid wetting and spreading, XIAMETER OFX-5211 Fluid also greatly increases the uptake of chemicals into plant tissues. Adding XIAMETER OFX-5211 Fluid to a herbicide tank-mix may significantly enhance its efficacy, particularly in the control of broadleaf weeds with water-soluble herbicides. The rapid uptake produces “rainfastness”; i.e., herbicides are not washed off by rainfall because they have penetrated into the plant surface. Figures 1, 2, and 3 show the enhancement achieved with XIAMETER OFX-5211 Fluid in greenhouse tests with low rates of Roundup Classic® and Blazer® herbicides.

![Figure 1](image_url)

**Figure 1**

Effect of surfactants on activity of Blazer herbicide on velvetleaf
Performance Characteristics (Cont.)

**Figure 2**
Effect of surfactants on activity of Roundup Classic herbicide on velvetleaf

![Graph showing the effect of surfactants on Roundup Classic herbicide on velvetleaf.]

**Figure 3**
Effect of surfactants on activity of Roundup Classic herbicide on giant foxtail

![Graph showing the effect of surfactants on Roundup Classic herbicide on giant foxtail.]

**Table 1**
Performance characteristics of XIAMETER OFX-5211 Fluid as an agricultural chemical compared with a conventional nonionic surfactant

<table>
<thead>
<tr>
<th></th>
<th>XIAMETER OFX-5211 Fluid</th>
<th>Nonionic Surfactant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equilibrium Surface Tension, dynes/cm</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0% in H₂O</td>
<td>20.7</td>
<td>Cloudy</td>
</tr>
<tr>
<td>0.1% in H₂O</td>
<td>21.1</td>
<td>28.7</td>
</tr>
<tr>
<td>0.01% in H₂O</td>
<td>22.7</td>
<td></td>
</tr>
<tr>
<td><strong>Dynamic Surface Tension, dynes/cm</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0% in H₂O</td>
<td>23.1</td>
<td>Cloudy</td>
</tr>
<tr>
<td>0.1% in H₂O</td>
<td>34.0</td>
<td>34.0</td>
</tr>
<tr>
<td>0.01% in H₂O</td>
<td>54.0</td>
<td>64.0</td>
</tr>
</tbody>
</table>
Table 1 (Cont.)

<table>
<thead>
<tr>
<th>Draves Wetting Time, on cotton, seconds</th>
<th>XIAMETER OFX-5211 Fluid</th>
<th>Nonionic Surfactant</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% in H₂O at 25°C (77°F)</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>0.1% in H₂O at 25°C (77°F)</td>
<td>8.7</td>
<td>1.9</td>
</tr>
<tr>
<td>0.025% in H₂O at 25°C (77°F)</td>
<td>35.9</td>
<td>17.0</td>
</tr>
</tbody>
</table>

Polyethylene Wetting Radius, 0.2 mL drop, PE Surface Energy 22 dyne, cm

| 1.0% in H₂O                        | 1.90 | 0.75 |
| 0.1% in H₂O                        | 1.65 | 0.62 |
| 0.01% in H₂O                       | 0.76 | 0.62 |
| Pure H₂O                           | 0.30 | 0.30 |

Ross Miles Foam Height, cm

| 1.0% in H₂O                         | 5.4  | 22.5 |
| 0.1% in H₂O                         | 3.6  | 19.0 |
| 0.01% in H₂O                        | 2.1  | 12.4 |

Cloud Point

| 1.0% in H₂O, °C (°F)               | < 10 (< 50) | None |

How To Use

Agricultural Chemical Formulations Applications

XIAMETER OFX-5211 Fluid may be used as an ingredient in formulations, provided all the ingredients are compatible.

XIAMETER OFX-5211 Fluid is stable in neutral aqueous formulations (pH=7), but will degrade rapidly in acidic or alkaline formulations. New product formulations should be thoroughly tested for performance and shelf stability before taking to market.

As an Agricultural Chemical Tank-Mix Adjuvant

XIAMETER OFX-5211 Fluid may be added to tank-mixes to enhance the biological performance of the spray solution. With herbicides, XIAMETER OFX-5211 Fluid should be used at 1 to 3 pints per 100 gallons of spray solution (0.125 to 0.375 percent). With insecticides and fungicides, use 3 to 16 oz per 100 gallons of spray solution. Test a small area first to ensure that crop damage does not occur. Use pesticides according to manufacturers' label recommendation.

CAUTION: Keep away from heat, sparks and open flame.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.
Usable Life And Storage

Agricultural Applications
Product should be stored at or below 20°C–40°C and (68°F–104°F) in original, unopened containers.

Leather Applications
Product should be stored at or below 20°C–40°C (68°F–104°F) in original, unopened containers.

Limitations
This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

Health And Environmental Information
To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

Roundup Classic is a registered trademark of Monsanto.
Blazer is a registered trademark of BASF.

http://www.xiameter.com

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