

XIAMETER[®] OFX-5211 Fluid

Performance enhancer for agricultural chemicals
Silicone glycol copolymer for leathers

FEATURES

- 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. Please contact your local XIAMETER[®] sales representative prior to writing specifications on this product.

Test	Unit	Value
Appearance		Clear, amber-colored fluid
Viscosity at 25°C (77°F)	cSt	40
Flash Point, closed cup	°C (°F)	>100 (>212)
Solids	%	100

DESCRIPTION

Leather Applications:

XIAMETER[®] OFX-5211 Fluid is a low viscosity, non-ionic polyoxyethylene-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.

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 adjuvant¹ 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 I), 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.

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.

PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEB SITE AT WWW.XIAMETER.COM.

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.

The most up-to-date shelf life information can be found on the XIAMETER Web site in the Product Detail page under Sales Specification.

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.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Table I: Performance Characteristics of XIAMETER OFX-5211 Fluid as an Agricultural Chemical Compared with a Conventional Nonionic Surfactant

	XIAMETER OFX-5211 Fluid	Nonionic Surfactant
Equilibrium Surface Tension, dynes/cm		
1.0% in H ₂ O.....	20.7	Cloudy
0.1% in H ₂ O.....	21.1	28.7
0.01% in H ₂ O.....	22.7	-
Dynamic Surface Tension, dynes/cm		
1.0% in H ₂ O.....	23.1	Cloudy
0.1% in H ₂ O.....	34.0	34.0
0.01% in H ₂ O.....	54.0	64.0
Draves Wetting Time, on cotton, seconds		
0.5% in H ₂ O at 25°C (77°F)	3.0	-
0.1% in H ₂ O at 25°C (77°F)	8.7	1.9
0.025% in H ₂ O at 25°C (77°F)	35.9	17.0
Polyethylene Wetting Radius, 0.2 mL drop, PE Surface Energy 22 dyne, cm		
1.0% in H ₂ O.....	1.90	0.75
0.1% in H ₂ O.....	1.65	0.62
0.01% in H ₂ O.....	0.76	0.62
Pure H ₂ O.....	0.30	0.30
Ross Miles Foam Height, cm		
1.0% in H ₂ O.....	5.4	22.5
0.1% in H ₂ O.....	3.6	19.0
0.01% in H ₂ O.....	2.1	12.4
Cloud Point		
1.0% in H ₂ O, °C (°F)	<10 (<50)	None

Figure 1: Effect of Surfactants on Activity of *Blazer* Herbicide on Velvetleaf

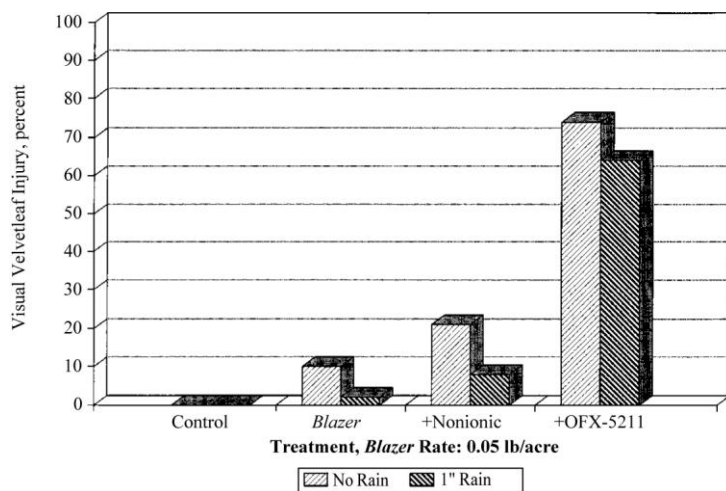


Figure 2: Effect of Surfactants on Activity of Roundup Classic Herbicide on Velvetleaf

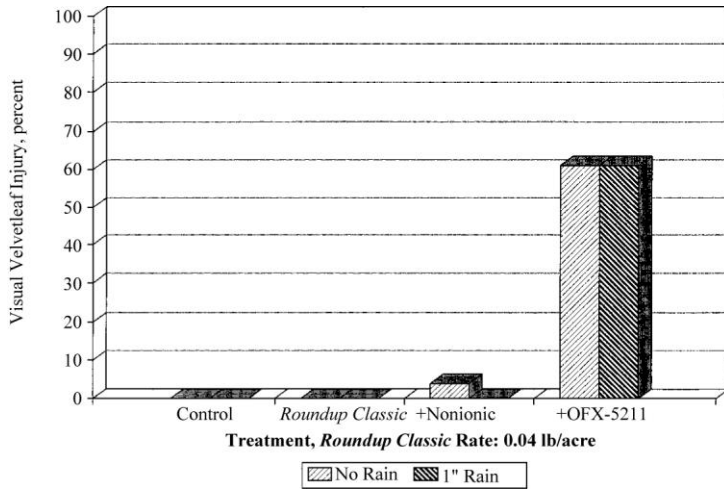


Figure 3: Effect of Surfactants on Activity of Roundup Classic Herbicide on Giant Foxtail

