

# XIAMETER<sup>®</sup> OFX-5329 Fluid

**INCI Name: PEG-12 Dimethicone**

## FEATURES

- Preparation of oil in water(O/W) or silicone in water emulsions
- Soluble in ethanol
- Water dispersible
- Provides interfacial surface tension reduction
- Can make stable emulsions in various media such as alcohols and hair colorants
- Imparts hydrophilicity and wetting

## BENEFITS

- Emulsifies a variety of oils, including mineral oils, sunflower oils and silicone oils
- Capable of forming silicone vesicles which provide ease of processing and combine the aesthetic benefits of silicones with effective delivery
- Provides detangling of wet hair
- Provides dry hair with a soft feel
- Provides O/W emulsions with better spreading, faster absorption, and a smoother, lighter feel than lotions formulated with organic emulsifiers

## APPLICATIONS

- Silicone emulsifier designed for the preparation of oil in water and silicone in water emulsions
- Can be used in a wide range of Personal Care applications such as:
  - Skin care
  - Antiperspirants and deodorants
  - Color cosmetics
  - Sun care
  - Hair care
  - Formation of silicone vesicles for delivery of actives, containing up to 30% Vitamin E
  - Thermodynamically stable microemulsions

## TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER<sup>®</sup> sales representative prior to writing specifications on this product.

| Test               | Unit               | Value                                     |
|--------------------|--------------------|---|
| Appearance         |                    | Low viscosity liquid that is tan and hazy |
| Specific gravity   |                    | 1.03                                      |
| Viscosity          | mm <sup>2</sup> /s | 360                                       |
| Flash point        | °C                 | 76.6                                      |
| Cyclotetrasiloxane | %                  | <1  |

## DESCRIPTION

XIAMETER<sup>®</sup> OFX-5329 Fluid is a polyether functional siloxane supplied at 100% actives.

Based on its ability to reduce surface tension, XIAMETER OFX-5329 Fluid can be used to prepare oil in water and silicone in water emulsions with improved aesthetics such as faster absorption, better spreading, and a lighter feel. It will also impart aesthetic benefits when added to neat skin and hair care formulations.

## HOW TO USE

Stable oil-in-water and silicone-in-water emulsions can be prepared by direct aqueous addition with a recommended use level of about 4%. Two formulations have been included within this datasheet that

illustrate the emulsification of a silicone phase, and a mixed organic oil phase.

XIAMETER OFX-5329 Fluid also provides a new way to prepare silicone vesicles from a concentrated microemulsion by simple dilution of the microemulsion into water to generate silicone vesicles loaded with active ingredients such as Vitamin E. Because preparation of a single-phase microemulsion does not require intensive processing, the concentrates can be shipped without compromising performance, and can be used to incorporate higher levels of actives. For further information on use/procedures refer to the following patents: US05364633, US05411744, US5958433.

## **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**

Product should be stored at or below 25°C (77°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 1:**

| <b>Oil in water emulsion</b>                         |                   | <b>Silicone in water emulsion</b>       |            |
|--|-------------------|---|------------|
| <b>Ingredients</b>                                   | <b>Wt%</b>        | <b>Ingredients</b>                      | <b>Wt%</b> |
| <b>Phase A: Oil phase</b>                            |                   | <b>Phase B: Oil phase</b>               |            |
| XIAMETER <sup>®</sup> PMX-0245 Cyclopentasiloxane    | 10%               | XIAMETER PMX-0245 Cyclopentasiloxane    | 20%        |
| XIAMETER OFX-5329 Fluid                              | 4%                | XIAMETER OFX-5329 Fluid                 | 4%         |
| <i>Dow Corning</i> <sup>®</sup> 5200 Formulation Aid | 0.50%             | <i>Dow Corning</i> 5200 Formulation Aid | 0.50%      |
| Crodamol <sup>™1</sup> GTCC                          | 4%                |   |            |
| Mineral oil  | 3%                |   |            |
| Sunflower oil  | 3%                |   |            |
| <b>Phase B: Aqueous phase</b>                        |                   | <b>Phase B: Aqueous phase</b>           |            |
| Water  | To 100%           | Water                                   | To 100%    |
| <b>Phase C</b>                                       |                   | <b>Phase C</b>                          |            |
| Sepigel 305 <sup>®2</sup>                            | 2%                | Sepigel 305                             | 2%         |
| Carbopol <sup>®3</sup> ETD 2020 solution (2%)        | 3%                | Carbopol ETD 2020 solution (2%)         | 3%         |
| <b>Phase D</b>                                       |                   | <b>Phase D</b>                          |            |
| Sodium hydroxide - to pH 6-6.5                       | q.s. <sup>4</sup> | Sodium hydroxide - to pH 6-6.5          | q.s.       |

<sup>1</sup>Crodamol is a trademark of Croda Inc.

<sup>2</sup>Sepigel 305 is a registered trademark of SEPPIC.

<sup>3</sup>Carbopol is a registered trademark of Lubrizol Advanced Materials Inc.

<sup>4</sup>Quantity sufficient

**Procedure:**

1. Mix Phase A ingredients.
2. Mix Phase B ingredients.
3. Add Phase A slowly to Phase B with agitation.
4. Homogenize