

## CoatOSil™ 3573

### CoatOSil\* 3573

#### Description

CoatOSil 3573 coatings additive is a highly compatible agent for reducing the coefficient of friction (COF) of radiation-cured coatings containing either acrylated or cycloaliphatic epoxy resins. It contains 100% of an organo modified silicone polymer. It imparts abrasion and mar resistance to the radiation-cured coatings. Additional benefits may include enhanced substrate wetting and improved flow and leveling of the coating formulations.

CoatOSil 3573 coatings additive can also be used in solventborne and waterborne coatings. It is an excellent slip agent for solventborne coatings. It imparts good wetting as well as flow and leveling properties to the solventborne coatings formulations. In some waterborne systems where compatibility is not an issue, it is an excellent slip agent.

#### Key Features and Benefits

- Excellent resin compatibility
- Minimum COF values achieved at low addition levels
- Enhanced abrasion and mar resistance
- Improved release properties
- Improved substrate wetting
- Enhanced flow and leveling
- Minimal effect on gloss

#### Typical Physical Properties

|                                  |                        |
|----------------------------------|------------------------|
| Appearance                       | Clear colorless liquid |
| Color, GVS                       | 1                      |
| Actives, %                       | 100                    |
| Viscosity, cSt at 25°C           | 400                    |
| Flash Point, °C (°F)             | 110 (230)              |
| Volatiles <sup>(1)</sup> % (g/L) | 1.4 (13.9)             |

(1) ASTM Method D 2369

### Potential Applications

Applications for radiation-cured coatings formulated with this product include:

- Overprint varnishes for packaging and publishing
- Coatings with release properties
- Inks
- Wood coatings
- Can end coatings

### Solubility

CoatOSil 3573 coatings additive is readily soluble in ketones, alcohols, aromatic, halogenated and oxygenated solvents and insoluble in water.

### CoatOSil 3573 Coatings Additive Concentration, wt %

| Solvent            | 0.1       | 1         | 5         | 20        | 80          |
|--------------------|-----------|-----------|-----------|-----------|-------------|
| Water              | Insoluble | Insoluble | Insoluble | Insoluble | Gel Phase   |
| Hexanes            | Soluble   | Soluble   | Insoluble | Insoluble | Dispersible |
| Acetone            | Soluble   | Soluble   | Soluble   | Soluble   | Soluble     |
| Xylenes            | Soluble   | Soluble   | Soluble   | Soluble   | Soluble     |
| Methylene Chloride | Soluble   | Soluble   | Soluble   | Soluble   | Soluble     |
| Isopropanol        | Soluble   | Soluble   | Soluble   | Soluble   | Soluble     |

### Patent Status

Standard copy to come

### Product Safety, Handling and Storage

Standard copy to come

### **Processing Recommendations**

For COF Reduction (or Slip), Wetting, Flow and Leveling Addition levels of 0.2-1.5% are required for COF reduction in radiation-cured coatings. Optimization of addition levels is best accomplished through ladder studies; a quick evaluation at 0.5, 1.0 and 1.5% will identify the ideal use level in your system.

### **For Release Properties**

Adding 1-3% to a radiation-cured coating will reduce the tendency of tapes and labels to stick permanently to the coated surface. This is useful for the packaging and shipment of furniture with a radiation-cured clear coating.

The additive should be incorporated with vigorous stirring or pre-diluted in reactive diluents to ensure optimal uniformity.

### **For Enhanced Compatibility**

In some formulations, CoatOSil 3573 coatings additive may be slightly incompatible, resulting in reduction of gloss or other problems. Blending it with Silwet\* L-7602 surfactant in the ratio of 1:10 to 1:3 CoatOSil 3573 coatings additive: Silwet L-7602 surfactant will enhance its compatibility and eliminate such problems. If it is used as a slip agent in waterborne systems, blending it with coalescing agents before the addition to waterborne formulations is highly recommended to improve its compatibility.

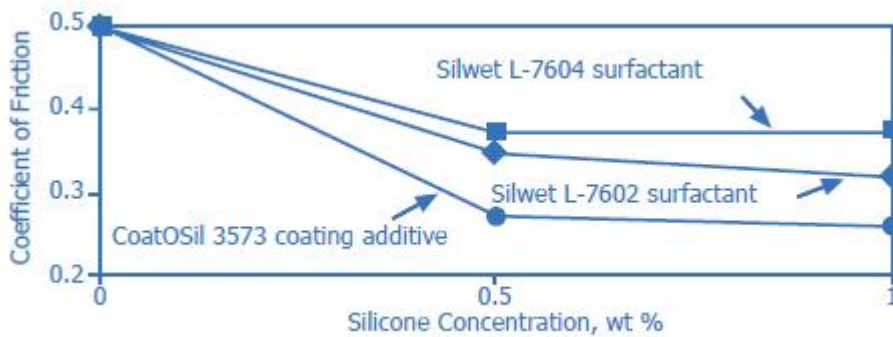
### **Performance**

Figure 1 shows the COF reduction of a model radiation-cured coating (Table 1) using CoatOSil 3573 coatings additive. Also presented in the figure are two popular Momentive Performance Materials slip agents, Silwet\* L-7604 surfactant and Silwet L-7602 surfactant. At the use levels of 0.5% and 1%, CoatOSil 3573 coatings additive reduces COF more than Silwet L-7604 surfactant and Silwet L-7602 surfactant.

With the model coating formulation 1.8-mil draw-downs on aluminum Q panels were cured at 300 mJ/cm<sup>2</sup>. The panels were allowed to stand for 24 hours at 70°F and 65% relative humidity. The static slip angle was measured and converted to COF (ASTM Test Method D 4518A).

**Table 1: Radiation-Cured Formulation**

| Component                       | Weight, g | Supplier                        |
|---------------------------------|-----------|---------------------------------|
| “Ebecryl” 3600                  | 20.0      | Radcure Specialties             |
| TRPGDA                          | 35.0      | Aldrich Chemical Company        |
| OTA-480                         | 40.0      | Radcure Specialties             |
| “Darocure” 1173                 | 5.0       | Ciba-Geigy                      |
| CoatOSil 3500 coatings additive | 0.5-1.0   | Momentive Performance Materials |

**Figure 1: Effect of Silicones on Coefficient of Friction (COF) in Radiation-Cured Formulation****Limitations**

Standard copy to come

**Contact Information**

Email

[commercial.services@momentive.com](mailto:commercial.services@momentive.com)

**Telephone**

**Americas**

+1 800 295 2392

Toll free\*

+704 805 6946

Direct Number

**Latin America**

**Brazil**

+55 11 4534 9650

Direct Number

**EMEAI- Europe, Middle East, Africa & India**

**Europe**

+390510924300

Direct number

**ASIA PACIFIC**

**China**

800 820 0202

Toll free

+86 21 3860 4892

Direct number

|                         |  |  |  |
|-------------------------|--|--|--|
| *All American countries | <b>Mexico</b><br>+52 55 2169 7670<br>Direct Number | <b>India, Middle East &amp; Africa</b><br>+ 91 44 71212207<br>Direct number* | <b>Japan</b><br>+81 3 5544 3111<br>Direct number |
|                         |  | <b>*All Middle Eastern countries, Africa, India,</b>                         | <b>Korea</b><br>+82 2 6201 4600                  |

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

**DISCLAIMER:**

**THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY “SUPPLIER”), ARE SOLD SUBJECT TO SUPPLIER’S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER’S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.** Each user bears full responsibility for making its own determination as to the suitability of Supplier’s materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier’s products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier’s standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product,

service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

\*CoatOSil™ ist ein Markenname der Momentive Performance Materials Inc.

The use of the "™" symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.