DOWSIL™ 27 Additive

Primarily used in reducing coefficient of friction

Features & Benefits
- Solventless
- Nonreactive silicone glycol surfactant with both silicone and organic characteristics
- Effective at low concentrations
- Reducing coefficient of friction

Composition
- Amber liquid
- Silicone glycol copolymer

Applications
- May be incorporated into solvent, aqueous, solventless and energy curable systems.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonvolatile Content</td>
<td>%</td>
<td>100</td>
</tr>
<tr>
<td>Specific Gravity at 25°C (77°F)</td>
<td></td>
<td>1.04</td>
</tr>
<tr>
<td>Flash Point, closed cup</td>
<td>°C (°F)</td>
<td>80 (176)</td>
</tr>
<tr>
<td>Surface Tension, 0.1 % surfactant in water</td>
<td>dynes/cm</td>
<td>28</td>
</tr>
<tr>
<td>Viscosity at 25°C (77°F),</td>
<td>cs</td>
<td>275</td>
</tr>
<tr>
<td>Glycol Type</td>
<td></td>
<td>Ethylene Oxide and Propylene Oxide</td>
</tr>
<tr>
<td>Endblocking</td>
<td></td>
<td>OH</td>
</tr>
</tbody>
</table>
**Description**

DOWSIL™ 27 Additive is a nonreactive silicone glycol surfactant with both silicone and organic characteristics. DOWSIL 27 Additive is supplied as a 100 percent active fluid.

DOWSIL 27 Additive has been especially effective at reducing the coefficient of friction in both a water-based acrylic flexographic ink and in a UV overprint varnish that consisted of a blend of a chlorinated polyester, a urethane diacrylate and a diacrylate.

**Test Conditions**

In both of these applications, the control consisted of the formulation with no additive added. The coefficient of friction was tested using the Monitor Slip and Friction, Model 32-06, supplied by Testing Machines, Inc., using a 4 pound weight and testing at a rate of 6 inches per minute. The ink and overprint varnish were drawn down on an NWH Lenetta chart and tested against the uncoated NWH Lenetta chart.

**Results**

In the water-based acrylic flexographic ink, the addition of DOWSIL 27 Additive at 0.5 weight percent based on actives gave a 25 percent reduction in the static and kinetic coefficient of friction over the control along with a 44 percent increase in 85° gloss. In the overprint varnish, the addition of DOWSIL 27 Additive at 0.5 weight percent based on actives gave a 63 percent reduction in the static and kinetic coefficient of friction over the control.

**How To Use**

DOWSIL 27 Additive is effective at low concentrations. The amount required depends on the type of formulation, the resin system involved, the solvents used and the total system solids. DOWSIL 27 Additive is generally effective at concentrations ranging from 0.1 to 1.0 weight percent, based on total solids. DOWSIL 27 Additive should be added in low enough concentrations to prevent contamination. Dilute in suitable solvent or water. DOWSIL 27 Additive is typically added during the final thinning stage or is post-added.

Characteristics may vary when used with different systems and formulations. Thorough preproduction testing is necessary to ensure expected performance.

![Graph](image)

Figure 1. Static Coefficient of Friction versus Additive
Handling Precautions

Caution: Direct contact with eyes may cause irritation.

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

When stored between 50°C (122°F) and -50°C (-58°F), DOWSIL 27 Additive has a shelf life of 30 months from date of manufacture.

Packaging

DOWSIL 27 Additive is available in 4 oz (100 g) samples, 40 lb (18.1 kg) pails and 441 lb (200 kg) drums.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Shipping Limitations

Combustible liquid. Store and ship in appropriate containers.

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.

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