Technical Data Sheet

DOWSIL™ 27 Additive

Primarily used in reducing coefficient of friction

Features & Benefits

- Solventless
- 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.

Property	Unit	Result
Nonvolatile Content	%	100
Specific Gravity at 25°C (77°F)		1.04
Flash Point, Closed Cup	°C (°F)	80 (176)
Surface Tension, 0.1 % Surfactant in Water	dynes/cm	28
Viscosity at 25°C (77°F)	cs	275
Glycol Type		Ethylene oxide and propylene oxide
Endblocking		OH

Description

DOWSIL™ 27 Additive is a 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 waterbased acrylic flexographic ink and in a UV overprint varnish that consisted of a blend of a chlorinated polyester, a urethane diacrylate and a diacrylate.

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Description (Cont.)

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.

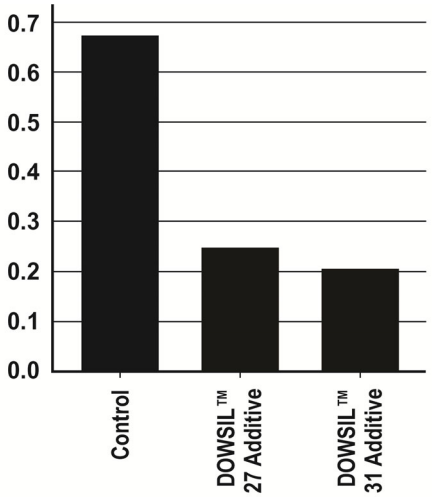

Figure 1. Static Coefficient of Friction Versus Additive

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 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 Information

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, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

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