Technical Data Sheet

DOWSIL™ 8590 Additive

Silicone foam control additive for waterborne paints, inks and coatings

Features & Benefits

- Effective foam control for waterborne coating systems
- Performs at low dosages
- No impact on surface gloss
- Low viscosity allows for easy dispersibility into waterborne paints and inks
- Performs over wide temperature range
- May provide improved corrosion and blister resistance in metal coatings

Composition

- Silicone antifoam compound with silica, 100% active

Applications

- Acrylic styrene emulsion paint for architectural wall coatings. Particularly effective at eliminating microfoam in roller applications.
- Waterborne flexo gravure inks.
- Waterborne acrylic over print vanishes.
- Acrylic urethane emulsion paints for wood.
- Waterborne acrylic and hybrid acrylic-epoxy metal coating.

Typical Properties

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

Property	Unit	Result
Appearance		Clear to translucent, colorless to light amber
Viscosity at 25°C (77°F)	mPa	800
Specific gravity at 25°C (77°F)		1.02
Active content	%	100

Description

DOWSIL™ 8590 Additive shows high efficiency and good compatibility in waterborne coatings and ink systems and has a low tendency to cause surface defects.

How to Use

DOWSIL™ 8590 Additive can be used as sole defoamer for both grind and let down stages. Usage level can be 50 to 70% less than conventional defoamers for comparable or better performance.

In the grind stage, the recommended starting addition level are from 0.03–0.06 (High gloss and satin formulations) to 0.06–0.09% (Eggshell or Flat formulations).

Depending on performance target, an additional 0.03–0.09% addition can be made in the Let Down stage.

A recommended addition level of 0.1–0.25% in the total formulation can usually provide adequate defoaming performance.

Better film appearance may be obtained by adding DOWSIL™ 8590 Additive after the thickener in the Let Down Stage.

DOWSIL™ 8590 Additive can be added directly or pre-diluted with alcohols or polyglycols. DOWSIL™ 8590 Additive must be mixed thoroughly before using.

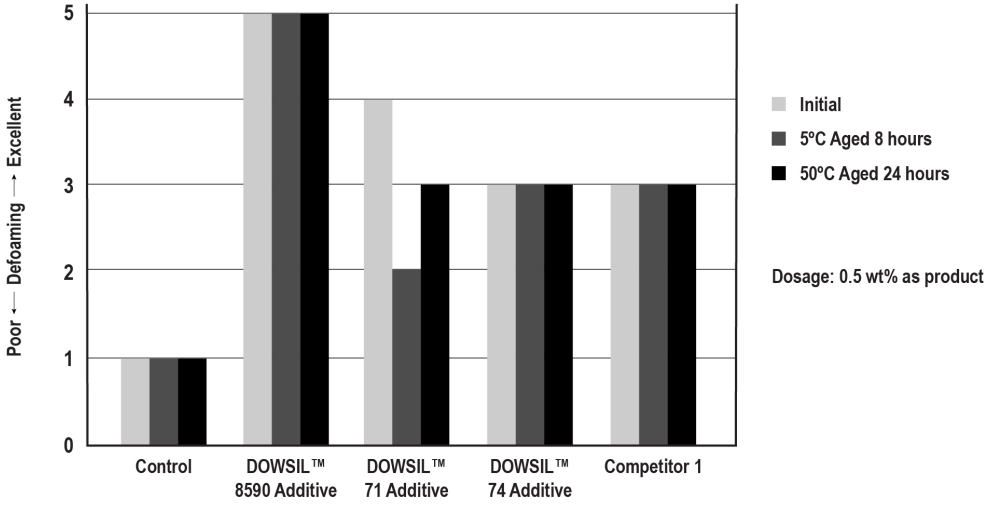


Figure 1: DOWSIL™ 8590 Additive at 0.5 weight percent in acrylic styrene emulsion paint for architectural gloss wall coating. Microbubbles are eliminated with DOWSIL™ 8590 Additive. Test results show better foam control with DOWSIL™ 8590 Additive after storage at 5°C and 50°C.

How to Use (Cont.)

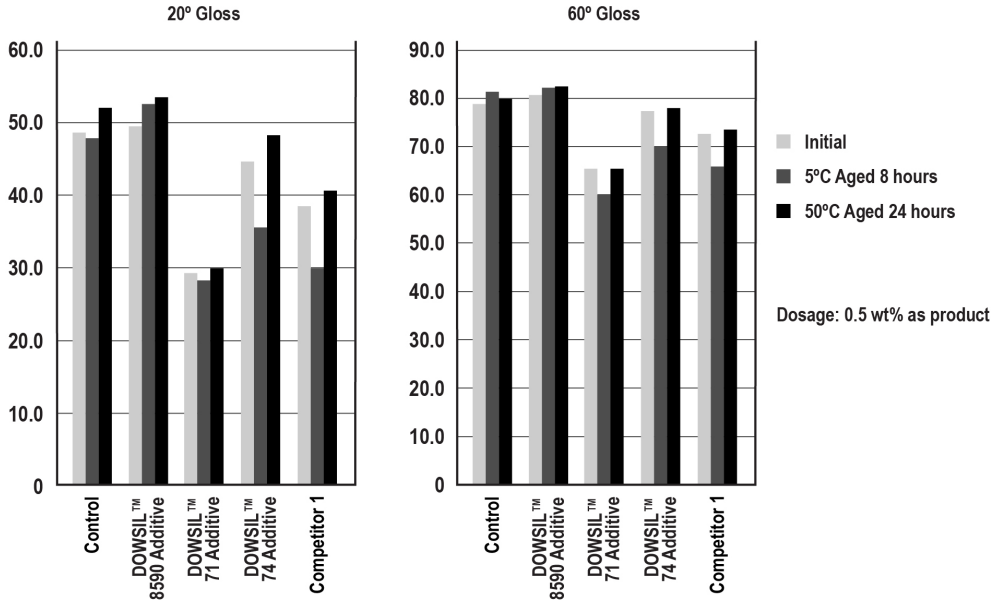


Figure 2 and Figure 3: The impact on surface gloss of DOWSIL™ 8590 Additive in the same waterborne wall paint is assessed by rolling down onto a tin panel. The example here shows DOWSIL™ 8590 Additive does not give negative impact on surface gloss in wide range of storage temperature.

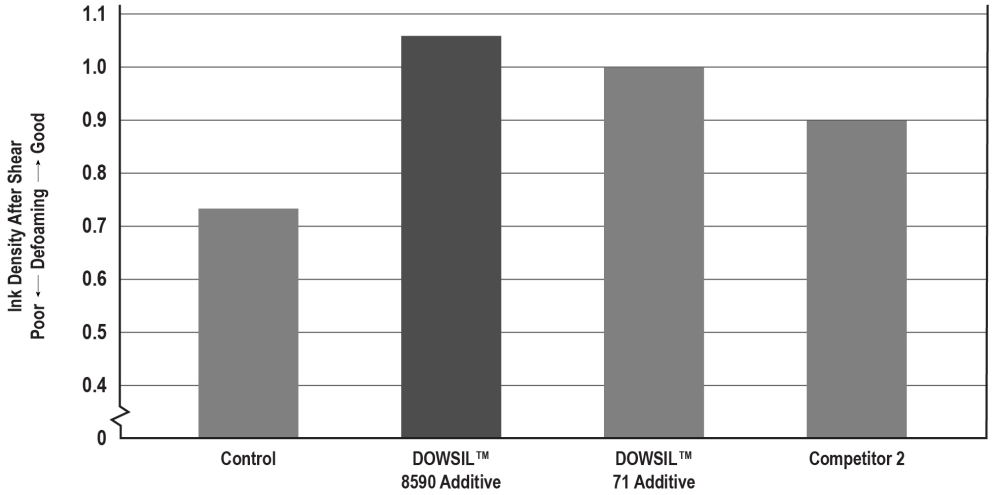
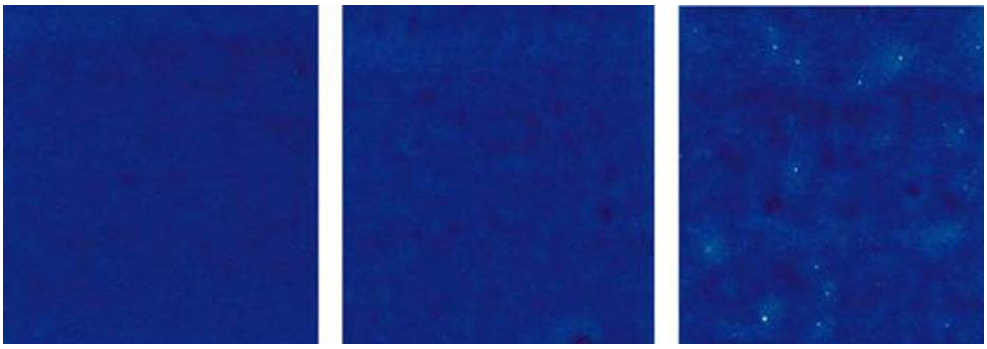


Figure 4: DOWSIL™ 8590 Additive, DOWSIL™ 71 Additive and Competitor 2 at the 0.2 active weight percent as supplied in a waterborne acrylic styrene flexographic blue ink as below. Ink Density reported after shearing 3 minutes at 3500 rpm using dissolver blade. This data indicates that DOWSIL™ 8590 Additive also works as excellent defoamer for ink.

How to Use (Cont.)



Control | DOWSIL™ 8590 Additive | Competitor 2

Figure 5: Surface appearance of the same waterborne flexographic blue ink after drawdown on polyethylene laminated card board at 18.3 microns wet film thickness. This example shows that DOWSIL™ 8590 Additive delivers good appearance without surface defects.

Competitor 1 (0.3%) | Competitor 2 (0.1%) | DOWSIL™ 8590 Additive (0.2%)

Figure 6: Improvement in blister and corrosion resistance of DOWSIL™ 8590 Additive when used in metal coating formulations (based on ASTM D-714).

Handling Precautions

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

Storage should be away from heat. When stored at or below 40°C in original unopened containers. This product has a usable life of 900 days from the date of production.

Packaging Information

This product is available in 120 ml sample bottle, 17 kg pail and 200 kg drum packages.

Limitations

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

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.

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