Technical Data Sheet

DOWSIL™ 100F Additive

FEATURES & BENEFITS

- Fluorosilicone that performs at low concentrations
- Can be added during let-down phase without causing surface defects
- All intentional substances present in this product are listed on Annex 6, Part B, of the Swiss ordinance RS 817.023.21

COMPOSITION

- 1% active in diisobutyl ketone

Foam control agent in solvent-based and radiation curable coatings

APPLICATIONS

- Efficient foam control with good surface appearance
- Good performance in high solids formulations

TYPICAL PROPERTIES

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

Test*	Property	Unit	Result
CTM 0176 B	Appearance		Clear colorless liquid, free from extraneous matter
CTM 0208 Y	Actives Content	%	0.95–1.05
CTM 0090 A	Flash Point (closed cup)	°C (°F)	47 (117)

*CTM: Corporate Test Method. Copies of CTMs are available on request.

DESCRIPTION

DOWSIL™ 100F Additive gives efficient foam control at very low silicone addition levels, even in high solids coatings formulations. It shows good compatibility in solventborne and radiation curable coatings and has a low tendency to cause craters or impact gloss or clarity of the coating. Due to the low addition levels required, it does not cause issues with recoatability.

HOW TO USE

The amount required is formulation dependent, but DOWSIL 100F Additive is typically added up to 0.7% by weight into the coating formulation (equivalent to 50 ppm active fluoro-silicone). It can be added in the let-down stage without causing surface defects.

Figure 1: DOWSIL 100F Additive at 0.5 weight percent (50 ppm silicone) in a high solids red paint. Density (g/l) is reported after shearing 5 minutes at 2,800 rpm using a dissolver blade for unaged and heat-aged (1 and 4 weeks at 50°C) paint. In this example, we see long-term foam control with DOWSIL 100F Additive.

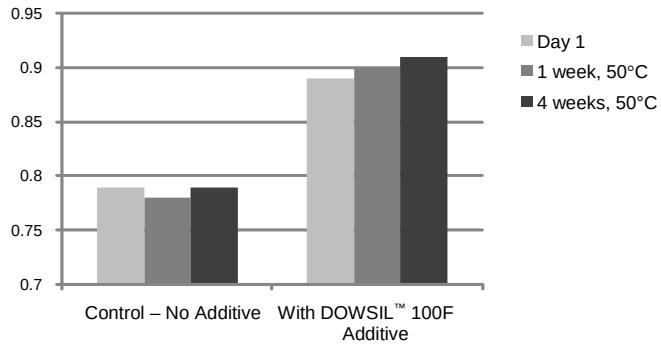


Figure 2: The impact on surface aesthetics of DOWSIL 100F Additive in the same high solids red paint is assessed by rolling down onto cardboard. The best surface appearance is seen with DOWSIL 100F Additive. Surface appearance after roller application is significantly improved with the prevention of microbubbles/ pinholes.

Test	Control – No Additive	With DOWSIL™ 7 Additive	With DOWSIL™ 100F Additive
20° Gloss	79	78	77
60° Gloss	89	89	89
Haze	37	38	36
Surface Appearance with Roller Application	Many bubbles/ pinholes; foamy	Slight orange peel	Good; few pinholes

Figure 3: DOWSIL 100F Additive at 0.5 weight percent (50 ppm silicone) in a white, high solids, solventborne paint (non-aromatic). Foam height after shearing 1 minute at 5,000 rpm using a dissolver blade for unaged and heat-aged (3 months/ 50°C) paint. In this example, we see better long-term foam control with DOWSIL 100F Additive compared to a competitor's antifoam. Competitor added at 0.71% to account for actives levels.

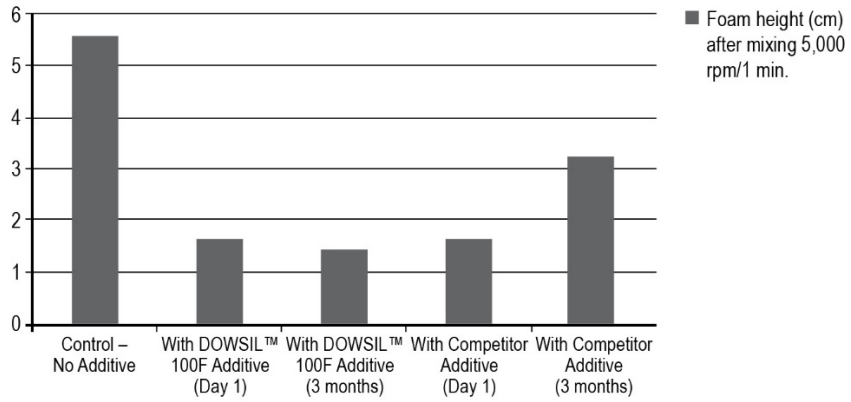
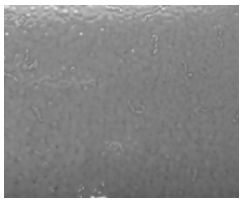


Figure 4: Surface appearance of white, high solids, solventborne paint (non-aromatic) after roller application. Microbubbles are eliminated with DOWSIL 100F Additive but remain with the competitor antifoam. This is more evident after long-term storage (3 months).



DOWSIL™ 100F Additive – Performance after Paint Storage (50°C/3 months)



Competitor Additive – Performance after Paint Storage (50°C/3 months)

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 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 0 and 32°C (32 and 90°F) in the original unopened containers, this product has a usable life of 24 months from the date of production.

PACKAGING INFORMATION

This product is available in 14 kg (31 lb) pails and 150 kg (331 lb) drums.

Samples are available in 120 ml (4 fl oz) quantities.

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.

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Figure 5: DOWSIL™ 100F Additive compared to competitor additives (For addition levels, see Table 1) in a solventless, UV-curing, acrylate varnish. Foam height after shearing 1 minute at 5000 rpm using a dissolver blade for unaged varnish. In this example, we see improved foam control relative to the competitive offerings.

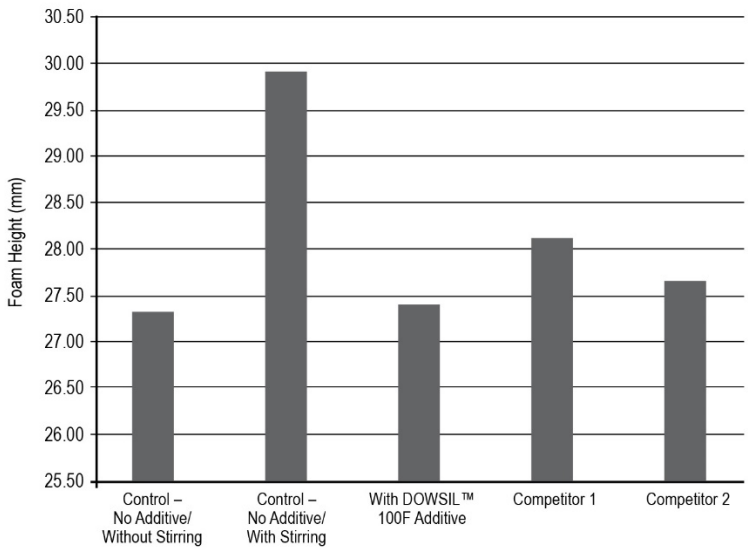

Table 1: Addition levels supporting test results as show in Figure 5 for a solventless, UV-curing, acrylate varnish.

Product	Addition level by weight	Active content
DOWSIL™ 100F Additive	0.5%	1%
Competitor 1	0.71%	0.7%
Competitor 2	0.71%	89%

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