

# Product Information

## Paints, Inks and Coatings

DOW CORNING

# Dow Corning® 3 Additive

## FEATURES

- Prevents flooding and floating
- Can be used in pastels and grays
- Highly effective at low concentrations
- Multi functional – also improves leveling
- Can be added in pigment grind or during let-down
- Low viscosity
- Low contribution to VOC at the recommended use levels (typically <0.01 g/l)

## BENEFITS

- Improves color consistency
- Can be used in multiple coatings formulations
- Good cost-in-use versus competition
- Simplified formulation; additional leveling additive may not be required
- Flexibility in formulating
- Easy to incorporate
- Little consideration to VOC required during formulation

## COMPOSITION

- Silicone resin with silanol functionality
- Supplied at 10 percent solids in toluene

Silanol functional silicone resin for dispersion of inorganic pigment to prevent flooding and floating

## APPLICATIONS

*Dow Corning*® 3 Additive has been tested successfully in the following applications:

- Solvent based wood coating
- Solvent based industrial coating

## TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Property	Unit	Result
Solids	Percent	10
Specific Gravity at 25°C (77°F)		0.9
Flash Point, closed cup	°C (°F)	4 (39)
Viscosity at 25°C (77°F)	cs	0.7-1.4

## DESCRIPTION

Most pigmented coating systems contain more than one pigment type. Flooding and floating occurs when multiple pigments separate from one another and are no longer homogeneously distributed.

*Dow Corning*® 3 Additive most effectively prevents the occurrence of flooding and floating when used as a pigment dispersant in the titanium dioxide white base paint. It is also effective as an anti-floating agent when post-added.

A multifunctional additive, *Dow Corning*® 3 Additive also improves leveling so that often no additional silicone leveling agent is necessary in the final formulation.

## HOW TO USE

To prevent the titanium dioxide flooding and floating in combination with colored pigments, *Dow Corning*® 3 Additive can be used as the sole dispersant for titanium dioxide in the white base paint. The color pigment concentrate can then be added during the let-down stage. The recommended dosage of *Dow Corning*® 3 Additive is 2-10 weight percent of the titanium dioxide used. In a paint containing 10 percent TiO<sub>2</sub> by weight in the total formulation, this equates to 0.2-1 weight percent *Dow Corning*® 3 Additive in the total formulation.

*Dow Corning*® 3 Additive can be used as a co-dispersant along with other wetting and dispersing additives during “co-grind” of titanium dioxide. It is effective at concentrations ranging from 0.05-0.5 weight percent, based on the total formulation.

Although most effective in the grind stage, *Dow Corning*<sup>®</sup> 3 Additive can also be post-added at concentrations from 0.03-0.5 weight percent based on total formulation.

The amount required is formulation dependent. Characteristics may vary when used with different systems and formulations. Thorough preproduction testing is necessary to ensure expected performance. *Dow Corning*<sup>®</sup> 3 Additive is compatible with epoxy, polyurethane, polyester, alkyd and acrylic binder systems.

## PERFORMANCE

### Flooding and Floating Prevention

*Dow Corning*<sup>®</sup> 3 Additive is very effective in preventing the flooding and floating of titanium dioxide in combination with black pigment. Figure 1 shows the in-can observation and rub-out test results in a gray 2K solventborne polyurethane wood coating. Homogenous and high-quality coating films are found with *Dow Corning*<sup>®</sup> 3 Additive. Identical results were obtained in titanium dioxide/blue pigment combination coatings.

### High Efficiency and Low Cost-In-Use in Grinding

*Dow Corning*<sup>®</sup> 3 Additive is highly effective even at very low dosage levels (Figure 2). *Dow Corning*<sup>®</sup> 3 Additive performs more effectively at preventing flooding and floating than competitive materials, but at less than half the addition level.

### Effective in Post-Addition

*Dow Corning*<sup>®</sup> 3 Additive can be used post-add to improve flooding and floating beyond traditional dispersants on the market today. In Figure 3, adding Competitor 1 alone in the grind phase is ineffective in preventing flooding and floating. By additionally post-adding *Dow Corning*<sup>®</sup> 3 Additive at levels as low as 0.03 percent weight in the total formulation, we can improve the floating and flooding effectively compared to the control (which has no post-addition) and versus post-adding Competitor 2.

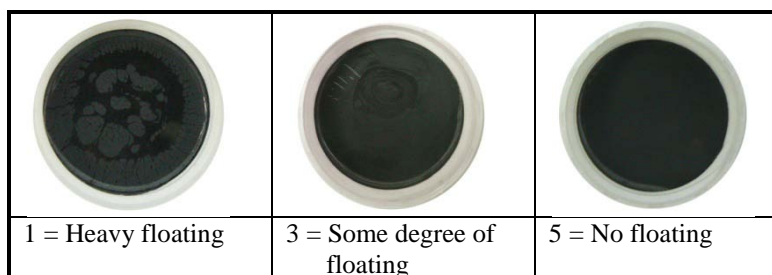
## PERFORMANCE DATA

Competitor products:

- Competitor 1 is a 50 percent actives organic wetting and dispersing additive (modified polyurethane; 50 percent actives)
- Competitor 2 is a 50 percent actives organic wetting and dispersing additive (unsaturated polycarboxylic acid polymer) + a polysiloxane copolymer

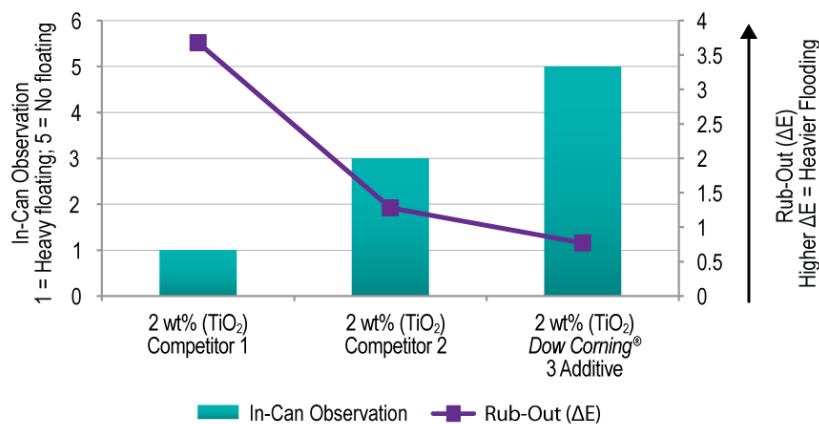
Testing methods:

- In-can observation
  - Pour the well mixed paint in a can; leave for 30 min. and observe the pigment floating
  - Rating scale as below:



- Rub-out
  - Draw down the well-mixed paint on LENETA chart by 100- $\mu$ m wire rod
  - Rub the freshly applied film by finger
  - Test the color difference ( $\Delta E$ ) between the rubbed surface and unrubbed surface; lower  $\Delta E$  indicates less color difference and less floating

**Figure 1: Flooding (in-can observation) and flooding (rub-out results) with *Dow Corning*<sup>®</sup> 3 Additive versus competitor dispersants in a solvent based 2K PU gray wood coating. All additives added during grinding of base white coating.**



## HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEB SITE AT DOW CORNING.COM, OR FROM YOUR DOW CORNING SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CORNING CUSTOMER SERVICE.

## USABLE LIFE AND STORAGE

When stored at or below 30°C (86°F) and above 0°C (32°F), *Dow Corning*<sup>®</sup> 3 Additive has a shelf life of 36 months from date of manufacture. Refer to product packaging for “Use By” date.

## PACKAGING INFORMATION

*Dow Corning*<sup>®</sup> 3 Additive is available in 4 oz (113 g) samples; 35 lb (15.8 kg) pails and 400 lb (181.4-kg) drums.

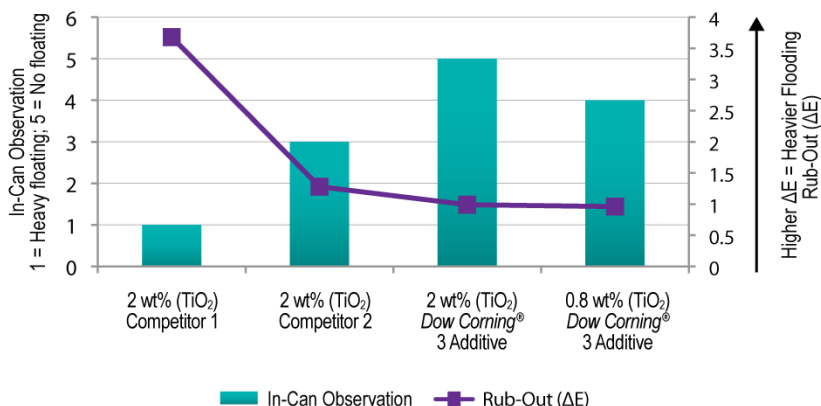
## LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not for human injection.

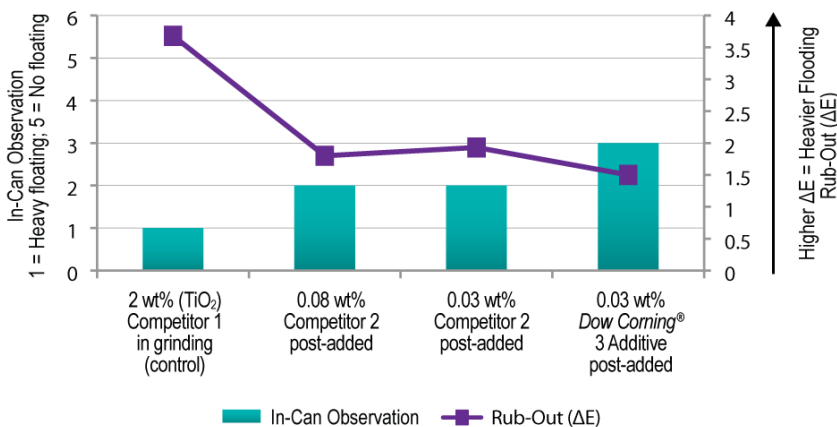
## HEALTH AND ENVIRONMENTAL INFORMATION

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

**Figure 2: Floating (in-can observation) and flooding (rub-out results) in a solvent based 2K PU gray wood coating. *Dow Corning*<sup>®</sup> 3 Additive is compared to competitor dispersants at lower addition levels in grind.**



**Figure 3: Floating (in-can observation) and flooding (rub-out results) in a solvent based 2K PU gray wood coating. Improvements are demonstrated by post-adding *Dow Corning*<sup>®</sup> 3 Additive and Competitor 2 at addition levels indicated.**



For further information, please see our Web site, [dowcorning.com](http://dowcorning.com) or consult your local Dow Corning representative.

## LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our

products are beyond our control, this information should not be used in substitution for customer’s tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning’s sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

**DOW CORNING SPECIFICALLY  
DISCLAIMS ANY OTHER  
EXPRESS OR IMPLIED  
WARRANTY OF FITNESS FOR  
A PARTICULAR PURPOSE OR  
MERCHANTABILITY.**

**DOW CORNING DISCLAIMS  
LIABILITY FOR ANY INCIDENT-  
TAL OR CONSEQUENTIAL  
DAMAGES.**

*We help you  
invent the future.™*

**dowcorning.com**