



Technical Data Sheet

DOWSIL™ 700P Additive

FEATURES & BENEFITS

- Highly efficient to disperse titanium dioxide pigments, only 10–15% dosage of ordinary dispersants needed to get better performance
- Easy to get fine particle size
- Stabilization of pigment dispersion
- Prevent pigment flooding and floating
- Anti-flooding without viscosity increasing
- Higher heat resistance than organic dispersants
- Good cost-in-use
- Provide high gloss and low haze of coatings appearance
- Easy to match color when tinting
- Improve color consistency
- Avoid yellowing during heat curing or high temperature applications

COMPOSITION

- Alkoxy siloxane with organic group

Functional siloxane for titanium dioxide pigment dispersion and treatment in solvent borne paint and ink.

APPLICATIONS

- DOWSIL™ 700P Additive has been successfully applied as titanium dioxide dispersant both for high grade TiO₂ and Low grade TiO₂ in solvent borne coatings
- DOWSIL 700P Additive has better heat resistance and imparts less yellowing in high temperature curing coatings

TYPICAL PROPERTIES

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

Property	Unit	Result
Appearance		Clear liquid, no gel
Specific gravity		0.97
Viscosity (25°C)	cSt	5.5
Active content	%	>90

Materials were tested according to Corporate Test Methods (CTM). Copies of CTMs are available on request.

DESCRIPTION

DOWSIL 700P Additive is alkoxy siloxane with organic group and it provides high efficiency to disperse inorganic pigment, especially titanium dioxide. Only 10–15% dosage of ordinary dispersants is needed to get fine particles and high gloss/low haze of paint. It also keeps good stabilization of pigment dispersion so that it can effectively prevent pigment flooding and floating when tinting. Unlike traditional anti-flooding additives which operate by controlled flocculation, DOWSIL 700P Additive does not increase viscosity and does not negatively impact gloss.

DOWSIL 700P Additive is low odor and makes a low contribution to VOC.

HOW TO USE

DOWSIL 700P Additive can be used as the dispersant for titanium dioxide in the white base paint. The other color pigment concentrate can then be added during the let-down stage. The titanium dioxide can be well dispersed and stabilized by DOWSIL 700P Additive so that pigment flooding and floating can be prevented and high gloss and low haze will be kept. The recommended dosage of DOWSIL 700P Additive is 0.2–4% weight percent of the titanium dioxide used which is much lower than ordinary dispersants. The dosage depends on the dispersability of titanium dioxide. High grade TiO₂ needs low dosage while low grade needs high dosage.

In a paint containing 10 percent TiO₂ by weight in the total formulation, this equals to 0.02%–0.4% weight percent DOWSIL 700P Additive in the total formulation.

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

After opening a container of DOWSIL 700P Additive, a partially filled container should be protected from atmospheric moisture to prevent gelation by purging the container with dry nitrogen or other dry, inert gas. When stored at or below 25°C (77°F) in the original unopened containers, this product has a usable life of at least 18 months from the date of production.

PACKAGING INFORMATION

This product is available in 18 kg pails and 195 kg drums. Samples are available in 500 ml bottles.

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, www.consumer.dow.com or consult your local Dow 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'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.

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Figure 1: High efficiency TiO₂ dispersant

DOWSIL 700P Additive was used as TiO₂ dispersant at 0.8 wt% dosage of TiO₂ and gives higher gloss and lower haze than all the competitors' dispersants which were dosed as 6 wt% of TiO₂. The silicone character imparts DOWSIL 700P Additive super high efficiency as TiO₂ dispersant and therefore lower dosage is needed than competitors.

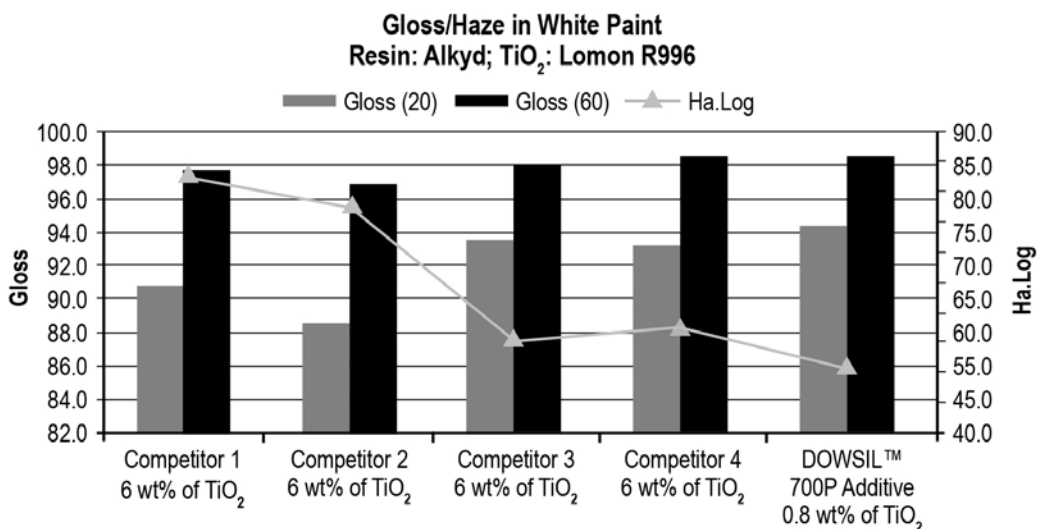


Figure 2: Stabilization of titanium dioxide pigment dispersions

Even with much lower dosage, DOWSIL 700P Additive will stabilize the TiO₂ effectively. In Figure 2, white based paint was tinted by carbon black paste and checked for gloss and haze before and after storage. The competitor's dispersants lose gloss due to insufficient stabilization of pigment dispersion, meanwhile the haze will increase. DOWSIL 700P Additive keeps good gloss and low haze over time even at lower dosage.

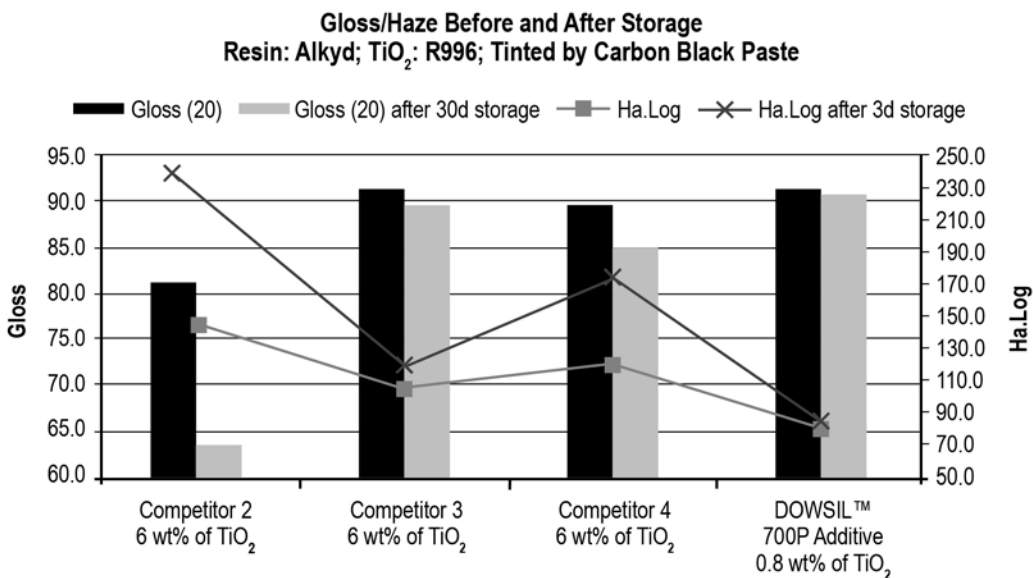


Figure 3: Anti-flooding without increasing viscosity

DOWSIL 700P Additive can effectively prevent pigment flooding without increasing the paint viscosity. Side effect of the poorer dispersion with other dispersants is gloss loss.

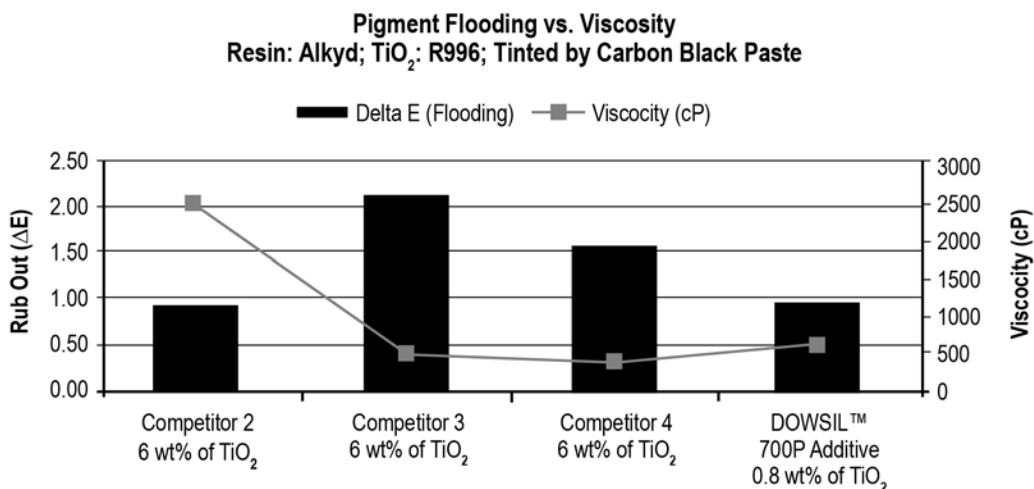


Figure 4: Higher heat resistance than organic dispersants

DOWSIL 700P Additive has higher heat resistance than organic dispersants which is indicated by the color change after baking 250°C/1 hour.

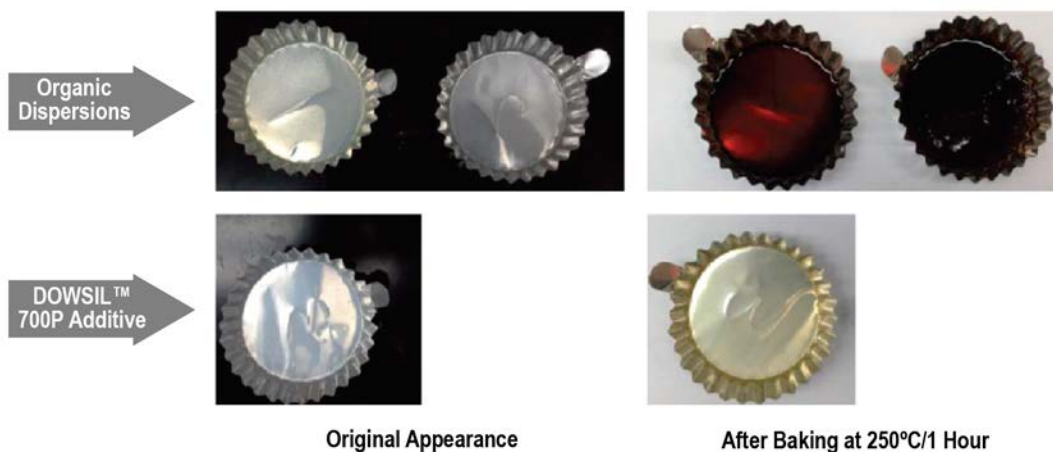


Figure 5: Reduced yellowing at high temperatures

As consequence of its higher heat resistance, when used as a pigment dispersant, DOWSIL 700P Additive will impart less yellowing into coatings during high temperature curing or over bake conditions.

