

# Product Information

## Paints, Inks & Coatings

DOW CORNING

## DOW CORNING® 52 Additive

### FEATURES

- Improves slip
- Provides mar resistance
- Flowable liquid for processing ease
- Reduces coefficient of friction
- Provides antiblocking

### COMPOSITION

- Ultra-high molecular-weight silicone dispersion in water
- Supplied at 65% solids in water

**Ultra-High molecular weight silicone dispersion that improves slip and mar resistance.**

### APPLICATIONS

- DOW CORNING 52 Additive reduces static and dynamic coefficient of friction and improves mar resistance in coatings and inks applications.

### TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

CTM*	Property	Unit	Value
	Specific gravity at 25°C (77°F)		0.98
0050	Viscosity	cSt	3000-5000
	Color		Milky white to translucent
0208	Non-volatile content	%	62-67
	Solvent		Water
	Functionality		Silanol
	Flash point (closed cup)	°C (°F)	>101 (214)

\* CTM: Corporate Test Method, copies of CTMs are available on request.

### DESCRIPTION

DOW CORNING 52 Additive is a silanol functional, ultra-high molecular weight silicone dispersion in water at 65% solids content. Its low viscosity facilitates the incorporation into water-borne formulations. Can also be used in solvent-borne systems where small amounts of water are acceptable.

### HOW TO USE

DOW CORNING 52 Additive is effective at low concentrations. The amount required depends on the type of formulation, resin system, solvent and total system solids. DOW CORNING 52 Additive is generally effective at concentrations ranging from 0.05 to 3.0 weight percent, based upon % solids in total formulation. Can be added during the grind, let down or be post-added. Characteristics may vary when used

with different systems and formulations. DOW CORNING 52 Additive is compatible with acrylic, alkyd, epoxy, nitrocellulose, polyesters, polyurethane and vinyl systems. Thorough pre-production testing is necessary to ensure expected performance.

### Test methods

Formulation number 1 (see table 1) was applied to a Lenetta chart using a number 6 wire wound rod. Static and dynamic coefficients of friction were measured using a monitor slip and friction model 32-06 by pulling the sample across an uncoated Lenetta chart using a 4 lb weight at a rate of 6 inches per minute.

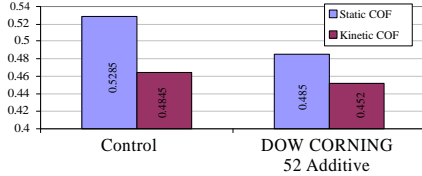
Formulation number 2 (see table 1) was applied on an untreated ExxonMobil 90 BSR one film using a number 6 wound rod. Using the sutherland rub tester, the sample was

rubbed against an uncoated film for 100 double rubs using a 2 lb test block. 60° gloss was measured before and after the rub test.

## Results

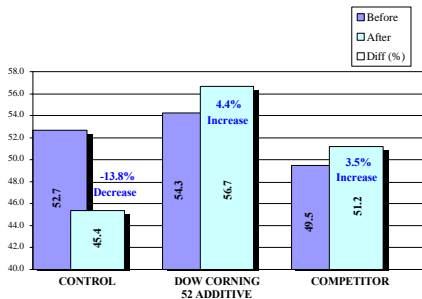
Improved slip resistance is represented by a reduction in coefficient of friction. Formulation 1 with DOW CORNING 52 Additive reduced the static coefficient of friction by 10% over the control.

**Figure 1: Formulation 1 - Flexographic ink for paper or paperboard - slip resistance.**



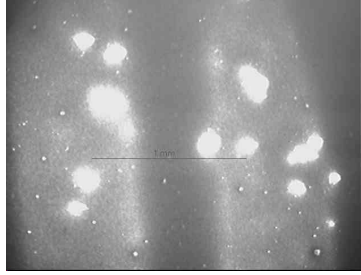
Gloss retention after rub test represents mar resistance characteristics. Formulation 2 with DOW CORNING 52 Additive added showed a significant improvement in mar resistance versus the control and the formulation with a competitor's product added.

**Figure 2: Formulation 2 - flexographic ink for film dry mar test - 60° gloss before and after rub test.**

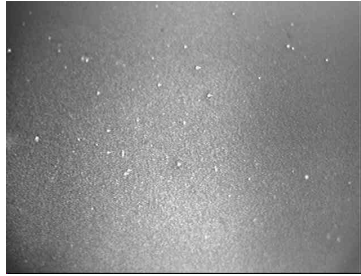


In addition, when viewing the samples with DOW CORNING 52 Additive added in the formulation under a microscope (50X), no surface defects were observed, whereas craters and scratches were seen on samples with a competitor's additive added and the control sample, respectively.

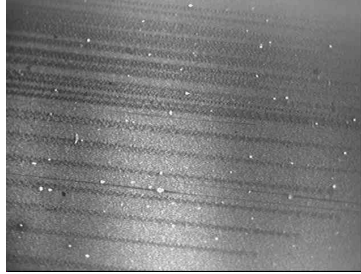
**Figure 3: Formulation 2 a) with a competitor's product added.**



**Figure 4: b) with DOW CORNING 52 Additive added**



**Figure 5: c) Control sample**



## HANDLING PRECAUTIONS

Product safety information required for safe use is not included. Before handling, read product and 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 website at [www.dowcorning.com](http://www.dowcorning.com). You can also obtain a copy from your local Dow Corning sales representative or Distributor or by calling your local Dow Corning Global Connection.

## USABLE LIFE AND STORAGE

When stored between 0°C (32°F) and 35°C (95°F) in the original unopened containers, this product has a usable life of 12 months from the date of production.

Product is damaged if frozen.

## PACKAGING

This product is available in 18kg pails and 190kg drums.

Samples are available in 500ml containers.

## 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 Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

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

**LIMITED WARRANTY  
INFORMATION - PLEASE  
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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 Dow Corning's 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.

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## WATER-BASED FLEXOGRAPHIC INK STUDY

### Formulation 1 - Flexographic ink for paper or paperboard

	%
Joncryl® 89 - Hard, non-film forming, styrenated acrylic polymer emulsion (Johnson Polymer)	55
Water	5
Flexiverse® yellow dispersion (Sun Chemical)	40
DOW CORNING 52 Additive	0.5 <sup>1</sup>

### Formulation 2 - Flexographic ink for film

	%
Joncryl® ECO 2124 - Soft film forming acrylic polymer emulsion (Johnson Polymer)	55
Water	5
Flexiverse® blue dispersion (Sun Chemical)	40
Additive – Dow Corning 52 Additive or competitive silicone emulsion	0.5 <sup>1</sup>

<sup>1</sup>Note: 1.0% Additive for control.