

Dow Corning® 67 Additive for Water-Based Formulations

Improves Wetting of Difficult Substrates

Unique Attributes Allow Use with Multiple Substrates and High-Speed Processes

Dow Corning 67 Additive allows you to power up your water-based ink and coating formulations by significantly improving substrate wetting (Figure A) without detracting from key performance attributes. The typical addition level is 0.1% to 1%. For use on a wide range of substrates, including wood and plastics, *Dow Corning 67 Additive* enables the development of waterborne formulations with performance properties comparable to solventborne products.

Figure A. Water-Reducible Stoving Paint – With and Without *Dow Corning 67 Additive*

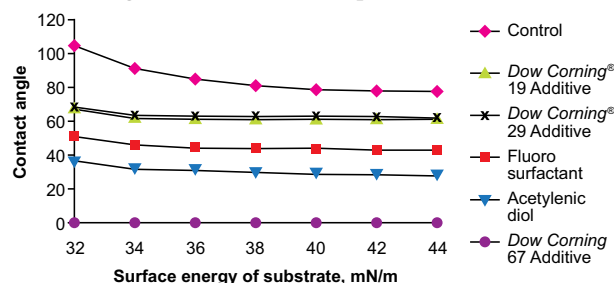


Its properties provide an advantage during application as well. In dynamic applications, such as high-speed printing or spray coatings, *Dow Corning 67 Additive* spreads quickly and evenly, and is ideal for these demanding environments.

Superior Wetting Properties Result in Fewer Coating and Ink Defects

Coating defects caused by insufficient substrate wetting, such as cratering, are common in water-based coating systems. Polarity and cohesive hydrogen bonding between water molecules lead to a very high surface tension. This can cause performance issues when coating substrates such as wood, which have an uneven and porous surface that is difficult to wet and penetrate. Substrates may also be subjected to contamination from dirt particles and liquid pollutants such as grease. Additionally, substrates such as polypropylene, polyester, etc. pose wetting challenges due to their low surface energy. These factors can cause poor substrate wetting due to air entrapment, crawling, framing and poor adhesion of the coating film.

Figure B. *Dow Corning 67 Additive* Significantly Reduces the Contact Angle in 0.1% Water Compared to Other Additives



By significantly reducing surface tension (measured by liquid contact angle in Figure B), *Dow Corning 67 Additive* improves wetting properties and results in a coating surface that is free of defects.

Dow Corning 67 Additive Performance Benefits:

- 100% organo-modified silicone
- Low static/dynamic surface tension
- Ideal for enabling wetting of difficult substrates, such as PVC foil and other plastics
- Prevents cratering typically caused by poor wetting or contaminants
- Reduces the need for organic solvents
- Very low tendency to stabilize foam
- Does not increase coefficient of friction
- Has no negative effect on recoatability

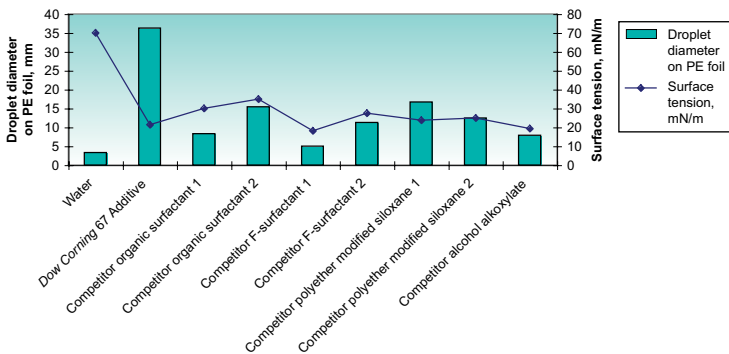
Power Up
YOUR COATINGS

Obtain Excellent Wetting Performance with Dow Corning 67 Additive

By lowering the surface tension of the coating, *Dow Corning 67 Additive* enables the wetting of difficult substrates, such as PE (Figure C), without the need to add solvent to improve wetting performance. It allows the wetting of low-energy substrates and improves wetting and spreading during spray applications. The additive's very low dynamic surface tension also facilitates high-speed printing processes.

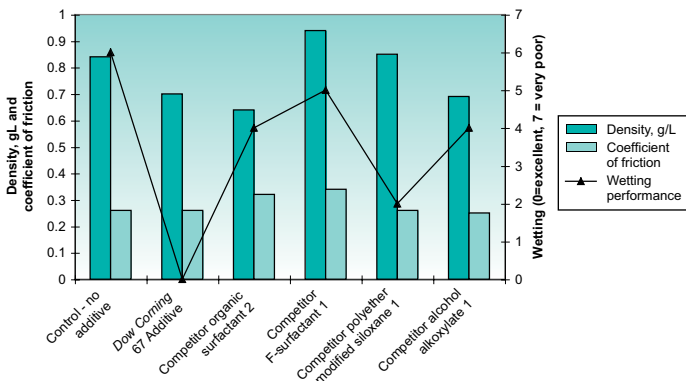
Additionally, *Dow Corning 67 Additive* provides excellent wetting without raising the coefficient of friction (Figure D) or contributing to the stabilization of foam.

Figure C. Dow Corning 67 Additive Improves Wetting by Lowering Surface Tension



Additives added to water at 0.2% addition level with the droplet applied to PE foil.

Figure D. Dow Corning 67 Additive Improves Wetting Without Increasing Coefficient of Friction



Additives added to waterborne two-pack polyurethane clearcoat at 0.5% addition level.

Applications for Dow Corning 67 Additive:

- Wood coatings
- Parquet coatings
- Printing inks
- Primers, fillers, top coatings and industrial coatings
- Two-pack epoxy systems for floor coatings
- Packaging varnishes
- Two-pack polyurethane systems
- Plastic coatings
- UV-curing systems
- Drum coatings
- Floor coatings

For More Information

See the wetting performance of *Dow Corning 67 Additive* by watching a video demonstration at dowcorning.com/powerup. You also can e-mail us at coatings@dowcorning.com to learn how Dow Corning's innovative coatings technology platforms can help you power up your product line.

Contact Information

dowcorning.com/ContactUs

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