

Visgard® Premium SE

Anti-Fog and Abrasion Resistant Coating

DESCRIPTION

Polysiloxane-based thermal cure coating that combines water sheeting anti-fog performance with abrasion resistance. Dip, spin and flow coat compatible, ideally suited for Polycarbonate safety eyewear, shields and visors as well as other applications where optical clarity and high durability are required.

FEATURES

- Excellent Abrasion Resistance
- Superior Anti-Fog Coating Performance
- Wipeable and Water Sheeting Anti-Fog Properties
- Compatible with Anti-Reflective and Mirror Coating
- Primer Free Adhesion on Polycarbonate
- Exceptional Optical Clarity

BENEFITS

- Easy to use, does not require premixing
- Long pot life reduces the need for frequent tank change outs
- Compatible with LDPE, HDPE, & CPE Packaging
- Streamlines manufacturing, enhancing yields and profitability



Premium Anti-Fog and Abrasion Resistance

Product Applications

- Automotive Instrument Clusters, HUD, Head/Tail Lamps
- Motorcycle Visors & Face Shields
- Protective Goggles & Masks
- Medical/Safety/Military/Sports Eyewear

Visgard® Premium SE Anti-Fog coating delivers best-in-class abrasion resistance, exceptional product stability, optical clarity, environmental durability, as well as excellent anti-fog performance and wipeability. Visgard Premium SE is REACH compliant, multi-package compatible with LDPE and HDPE, and CPE bags with a thickness of 2 mil or greater will not leave a mark or stick to the bag.



Solution Properties

	Typical Values
% Solids	30 - 35
Viscosity at 25°C (77°F)	≤38 cps
Specific Gravity	1.0 - 1.1 g/ml

Cured Coating Properties

	Typical Values
Coating Thickness	4-5 microns
80°C, 1h Water Adhesion (Nichiban 405)	100%
80°C Anti-Fog Performance	Fog free time > 5 mins
Haze %	<1.0%



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Curing, Equipment and Use

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Equipment Preparation

Equipment Cleaning: Coating equipment should be cleaned prior to use of Visgard Premium SE to avoid any possible contamination problems. Coating contamination can result in problems with adhesion, poor Anti-Fog performance or general appearance. The cleaning process should include multiple solvent rinses (utilizing a solvent compatible with the material in use with prior equipment) followed by a thorough PM glycol ether rinse. PM glycol ether should also be used for cleaning equipment after the use of Visgard Premium SE.

Equipment Materials: Visgard Premium SE is incompatible with silicone based surfactants, contact with these materials will impair anti-fog performance even at low concentrations. Be sure all equipment is thoroughly clean and free from other coating residues before evaluating Visgard Premium SE in production systems. A peristaltic pump is best for initial tests because there is no actual contact of Visgard Premium SE with the pump chamber or mechanical parts. Visgard Premium SE is incompatible with PVC tubing due to plasticizer extraction. Use only LDPE or PU tubing. Circulating PM glycol ether through the pump, hoses and filter for 8-12 hours is recommended for removing possible contaminants before start-up or change over.

Instructions for Use

Application Environment: Visgard Premium SE should be applied in a clean (preferable Class 100), temperature and humidity controlled environment. Recommended conditions for application are 20-25°C (68-77°F) and 35-65% relative humidity (RH).

Cleaning and Pretreatment: Parts to be coated with Visgard Premium SE should be clean and free of any surface residues. Injection molded polycarbonate parts should be cleaned with a neutral detergent solution to remove any residues left on the parts from the molding process, and then rinsed thoroughly with de-ionized water.

Storage Conditions

The recommended storage temperature for Visgard Premium SE is 4°C (39°F). When stored at the recommended temperature in the original closed container, it is recommended to start use of the product within six (6) months from the date of manufacturing.

Lenses coated with Visgard Premium SE should be stored in a cool, dry place. Coated lenses stored in a humid environment may develop a wipeable haze.

Use LDPE, HDPE or CPE bags (2 mil thickness or greater). Do not package in an area where humidity is above 70%.

Recommended Operating Guidelines

% Solids	30 - 35
Viscosity@25°C (77°F)	≤38 cps
Relative Humidity	35 - 65%
Air Temperature	20 - 25°C (68-77°F)
Air Flow	Filtered, Laminar
Coating Temperature	15 - 25°C (59-77°F)
Coating Filtration	5.0 micron absolute
Extraction Speed	1 - 2 in/min (0.42—0.85 mm/s)
Dry Time/ Temperature	2 mins @ 20 - 25°C (68 - 77°F), then 10 mins @ 90°C (194°F)
Cure Conditions * Polycarbonate	2hrs @ 120°C (248°F)

*Insufficient curing can cause adhesion problems

Solution Maintenance

The % Solids should be measured on a regular basis and adjusted as needed by the addition of SM-940 or a 7.5/60/22.5/10 by weight mixture of water, methanol, ethanol and PM glycol ether.

Product Availability & Shipping

Typical lead-time for shipment of Visgard Premium SE is four (4) weeks from confirmation of a purchase order. FSICT provides several shipping options. Please contact an FSICT representative to determine which option best fits your needs. All orders are shipped F.O.B. Additional shipment charges including customs clearance and fees (if applicable) are the responsibility of the customer.

Equipment Preparation

Before using this product, read and understand the Safety Data Sheet, SDS, which provides information on health, physical, and environmental hazards, handling precautions and first aid recommendations. For a copy of an SDS, contact an FSICT sales or customer service representative.

Warranty & Liability Limitations

This document does not constitute any warranty or representation regarding FSICT's product. Please refer to FSICT Coating Technologies Standard Terms and Conditions or to your purchase agreement with FSICT for the warranty coverage of FSICT's product.