



FormGard®

Formable Scratch Resistant Coating

DESCRIPTION

FormGard® is a solvent based thermal cure coating. It is formable and designed to impart excellent abrasion, scratch, and chemical resistance to polycarbonate (PC) and BOPET Film. Suitable for dip and flow coating applications. It can overcoat, or be overcoated by Visgard® anti-fog coatings.

FEATURES

- Primer-free adhesion to Polycarbonate and BOPET film
- Abrasion and Chemical Resistance
- Optical Clarity
- Formable

FORMING

FormGard coated plastics may be drape-formed, vacuum-formed, heat pressed or embossed into both simple and compound curves. Optimum results will be obtained using a combination of the lowest workable temperature and short cycle time. It is important to note that the degree of stretching must not exceed 30%. Deep draws and sharp right angle bends should be avoided. Overheating can result in coating cracks and/or tooling mark-off

STORAGE AND USE

The recommended storage temperature for FormGard is 20-25°C (68-77°F). When stored at this temperature in the original closed container it is recommended to start use of the product within three months from the date received.

SOLUTION PROPERTIES

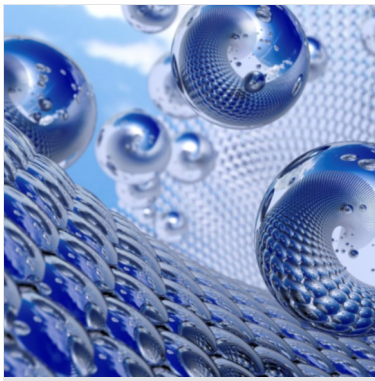
| PROPERTY | TYPICAL VALUES |
|---|----------------|
| % Solids | 27.0 - 31.0 % |
| Viscosity @ 25°C | 5 - 20 cP |
| Density @ 25°C | 0.9 - 1.0 g/ml |
| Solvents: PM Glycol Ether, N-methyl-2-pyrrolidone | |

CURED COATING PROPERTIES

| PROPERTY | TYPICAL VALUES |
|--|----------------|
| Coating Thickness | 2.0 - 4.0 µm |
| Adhesion | 100% |
| Taber Abrasion (Δ Haze) 100 revolutions | <5% |

RECOMMENDED OPERATING GUIDELINES

| PROPERTY | TYPICAL VALUES |
|--------------------------|------------------------------------|
| Environmental Conditions | 0 - 25°C, 35 - 65 % RH (Class 100) |
| Air Flow | Filtered, Laminar |
| Coating Temperature | 20 - 25°C |
| Coating Filtration | 5 µm |
| Extraction Speed | 1.0 - 2.0 mm/s |
| Dry Time/Temperature | 10 - 60 s @ 20 - 25°C |
| Pre-Cure Conditions | 10 min @ 80°C |
| Cure Conditions (PC) | 1 hr @ 129°C (266°F) |



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CONTACT INFORMATION

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EQUIPMENT PREPARATION

Equipment Cleaning: Coating equipment should be cleaned prior to using FormGard to avoid any possible contamination. Coating contamination can result in problems with adhesion or general appearance. The cleaning process should include multiple solvent rinses (utilizing a solvent compatible with the material in prior use with the equipment) followed by a thorough PM Glycol Ether rinse. PM Glycol Ether, may be used for cleaning equipment after the use of FormGard.

Equipment Materials: Be sure all equipment is thoroughly clean and free from other coating residues before evaluating FormGard in production systems. A peristaltic pump is recommended for initial tests because there is no actual contact of FormGard with the pump chamber or mechanical parts. FormGard is incompatible with PVC tubing due to plasticizer extraction. Use only PTFE, LDPE, PU or stainless-steel 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.

PRETREATMENT AND CLEANING OF SUBSTRATE

Parts to be coated with FormGard 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.

SOLUTION MANAGEMENT

For optimum performance, FormGard should be maintained at a solids range of 27 - 31 % (unless diluted). Higher or lower % solids can cause appearance problems or lead to a coating deposition that is either too thick or thin. The % solids should be measured on a regular basis and adjusted as needed by the addition of PM Glycol Ether. Some applications may require the coating to be diluted to lower solids. For flow coating it is recommended to dilute to 20% solids. Please contact an FSI representative for further advice on dilution.

HEALTH AND SAFETY INFORMATION

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 a sales or customer service representative.

WARRANTY AND LIABILITY LIMITATIONS

Information contained herein is accurate to the best of our knowledge. The coating solution properties and cured coating properties listed herein represent typical values for FormGard and are not meant as specifications. FSICT insists that users conduct their own tests for applicability and fitness for any purpose. Statements concerning use of products or formulations described herein shall not be construed as a warranty or license to infringe any patent or trademark, and no liability for infringement arising out of such use is assumed. Please refer to FSICT Standard Terms and Conditions or to your Purchase Agreement with FSICT for the warranty coverage of FSICT's product.

PRODUCT SHIPPING AND AVAILABILITY

Typical lead-time for shipment of FormGard 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 ex works/F.O.B. Additional shipment charges including customs clearance and fees (if applicable) are the responsibility of the customer.

