

ShieldSys™ SB Advanced DryFilm Medical Coating

Description:

ShieldSys™ SB is a water-based, dry film coating designed to impart ultra-low coefficient of friction, high lubricity, anti-stick, and corrosion resistance to medical devices and tools. This coating utilizes a proprietary fluoropolymer resin system designed to generate a highly durable, abrasion resistant, and chemically inert thin-film coating on the applied surface. ShieldSys™ SB is high temperature and autoclave stable. This coating imparts very low surface energy, greatly reducing or eliminating build-up and fouling. Benefits of this product include:

- Exceptional durability and abrasion resistance
- Ultra-low coefficient of friction; High Lubricity
- Minimization of “slip-stick” issues
- Chemically Inert; Autoclave stable
- Clean, Non-oily, Non-migrating
- Eliminates build-up and fouling

Applications:

ShieldSys™ SB is formulated to provide unmatched utility and performance on numerous medical device and tool applications which require a dry film, highly lubricious, and anti-fouling surface coating.

Surface Preparation

1. **Surface preparation** is important for all application methods. All surfaces should be clean and dry before ShieldSys™ SB dispersions are applied. Controlling surface roughness improves coverage, especially in air-dried applications; a smooth surface can improve results. Properly applied, ShieldSys™ SB dispersion coatings are not affected by water or other materials with which they come in contact.

Application Methods:

1. **Dipping:** Dipping is useful for coating small devices, tips, and scalpel blades. Coatings levels are determined by concentration of solids, rate of withdrawal, and number of applications. A single application is typically sufficient.
2. **Brush:** This method is especially useful in coating continuous surfaces such as rods, tubes, or flat sheets. In addition, wiping and brushing are ideal for coating specific areas of a larger part.
3. **Spraying:** Dilution with DI water is typically necessary. Spray coating can be performed by any equipment which can generate fine atomization and deposit uniform, light coats of material.

Melt-Coating for Improved Adhesion:

Adhesion of the coating can be improved by melting the deposited solids. After ShieldSys™ SB is applied and the carrier is flashed off, the surface can be heated to fuse the coating. The temperature for heat-curing the coating is 305–310°C (581–590°F). When melt-coating ShieldSys™ SB dispersions, provide adequate ventilation. Heat-curing the coating is completed as follows:

1. Measure the surface temperature directly with a thermocouple. You may observe a change in coating appearance, which may alter initially from an opaque white to a darker, translucent look and then appear clear and wet.
2. Maintain the temperature of the coated surfaces (not the temperature of the ambient air) at the correct temperature for 5–10 minutes.
3. If a white residue is left on the metal surface, buff with a soft cloth.

Physical Properties:

Primary Polymer:.....Fluoropolymer Resin
Appearance:.....Opaque Dispersion
Odor:.....None
Specific Gravity:.....1.1 g/mL @ 25°C
Flash Point:.....None
VOC:.....None

Storage and Handling:

ShieldSys™ SB should be stored in a well-ventilated area which is cool and dry. Do not expose to freezing temperatures. Prior to use, container should be lightly agitated; avoid high shear/high rpm mixing.

ShieldSys™ SB should not be used at temperatures above 350 °C or near open flames. Chemical breakdown will occur which will result in the generation of toxic fumes. When spraying, avoid inhalation of mist and exposure to skin. Always wash hands after handling.

Shelf-Life

ShieldSys™ SB has a shelf life of 12 months from the date of shipment.

ShieldSys™ Product Line:

Miller-Stephenson's offers a selection of high performance water-based, fluoroplastic coatings and dispersion to meet your process needs. All variants of the ShieldSys™ Series will deliver higher productivity, lower rejection rates, and higher quality products.