miller-stephenson

Product Information

www.miller-stephenson.com

MS-475C / 477C
Acrylic Conformal Coating

Description:

Acrylic Conformal Coating offers superior toughness and abrasion resistance, excellent dielectric properties, fungal resistance, and moisture and environmental protection. It is solderable for ease of repair. Benefits include:

- Excellent toughness and abrasion resistance
- Resistant to alcohol and caustics
- 100% Non-flammable formulation
- Fast drying & Easy Curing Acrylic Coating

Preparation/Application/Cure Schedule

Performance of MS-475C and MS-477C and its cured film is dependent on process controls used in application of the coating. Cleanliness of the substrate is a major factor in promoting adhesion and preventing under-film corrosion. Assemblies must be clean, oil-free and dry. For specific recommendations, please contact our Technical Support Team.

Application Procedure:

Application should be done in a well-ventilated area. Proper safety equipment and chemical resistant gloves are strongly recommended.

MS-475C Aerosol Application

1. Allow 48 hours minimum to reach room temperature before using stored or received during cold weather.

2. **Note:** Do not shake can aggressively. Hold can 6-8 inches away from the assembly and apply a medium-light coating. Coating must be applied wet and allow to dry on the surface of the assembly.

3. Allow coating to dry for 30 minutes at room temperature.

4. Apply 1-2 additional medium wet coats with 30 minutes between each coat.

5. A total cured film thickness of 2+/- 1ml is recommended. Fluorescent when viewed with ultraviolet light.

MS-477C Bulk Application

Application methods: Spray, brush, dip. All handling and application equipment coming into contact with MS-477C must be clean, oil-free and most importantly moisture free.

Note: For Spray Application: If using a compressed air-based spray equipment, then proper filtration of the source air supply should be in place. Failure to have contaminates, oil and moisture free air can affect product performance and final film properties. When using spray equipment, application of a wet-film is critical to achieve the proper thin-film coating that achieve the desire performance. Adjust your spray equipment and spray distance so an even uniform, wet coating is applied. Once spraying is complete, immediately purge and solvent flush the spray equipment. This will prevent clogging and premature equipment blockage.

1. MS-477C should be applied at room temperature.

2. MS-477C is a ready-to-use product. Do not dilute or modify the product prior to use.

3. Coats should be applied wet and allowed to dry on the surface for 30 minutes.

4. Apply 1-2 additional medium wet coats with 30 minutes between each coat.

5. A total cured film thickness of 2+/- 1ml is recommended. Fluorescent when viewed with ultraviolet light.

Curing Schedule

Final film properties can be achieved by either heat acceleration or room temperature.

1. Heat Accelerated: Drying and curing of acrylic coating depends upon evaporation of the solvent. Air dry coated boards for 30 minutes at 77°F/25°C to remove solvents before curing in oven. **Note:** Use of air-circulating oven is strongly recommended.

2. A typical cure is 45 minutes at 167°F/75°C.

3. If the coating blisters or contains bubbles, allow additional time at room temperature for the solvent to flash off prior to oven cure.

4. Room Temperature/Air Cure: Allow board to air dry for 24 hours at 77°F/25°C. Acrylic coating will be tack free in one hour, semi-hard in four hours, and fully cured in 24 hours. Deaeration is not recommended.

Removal:

Acrylic conformal coating can be removed with MS-114D or MS-115 Conformal Coating Strippers.

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Coverage:

MS-475C will cover 6.4 sq. ft. at a 2 mil. thickness per 14 oz. aerosol can. MS-477C, the bulk liquid version of this product, is available in quarts and gallons for dip, brush, or spray application, and will cover 91 sq. ft. per gallon at a 2 mil. thickness

Cured Electrical Properties:

Dielectric Strength, volts/mil	2000
Dielectric Constant/Dissipation Factor@ 25°C	
100 Hz	2.78/0.79
10 kHz	2.36/0.027
100 kHz	2.29/0.012
Volume Resistivity, ohm-cm	
@ 25°C	1.04×10^{16}
@ 60°C	3.89×10^{14}
@ 90°C	2.86×10^{13}
@ 110°C	9.25×10^{12}

Cured Physical Properties

Operating Temperature: -67°F/-55°C to 230°F/ 110°C

Appearance: No blistering, wrinkling, cracking or peeling of film or discoloration of printed conductors or substrate after thermal shock or moisture resistance testing.

Flexibility: No cracking or crazing of film in bending over a 1/8" diameter mandrel.

Fungus Resistance: Non-nutrient per ASTM G21.

VOC Content

MS-475C: 336 g/l
MS-477C: 673 g/l

Miller-Stephenson offers urethane, acrylic and silicone conformal coatings available in aerosol and bulk liquid.

Safety Data Sheets (SDS) are available upon request.

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