PPG Industrial Coatings
Electronic Materials Group

SERIES 599-Y1306
Antenna Copper Conductive Coating

Features

SERIES 599-Y1306 is a sprayable, three-component polyurethane system using copper as the conducting agent. This system can be used on aircraft substrates, such as Kevlar, epoxy and fiberglass. It is able to withstand lightning strikes and passes Military Specifications MIL-B-5087 and MIL-STD-1757.

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Product Description

SYSTEM:	Three component, air dry.
ATTENUATION:	>75 dB from 1 MHz to 1 GHz
SOLIDS:	80% ± 2% by weight (Parts A , B & C)
DENSITY:	18.86 ± 1.0 lbs/gal(Parts A, B & C)
V.O.C.:	3.93 lbs. per gallon
THINNER:	For spraying use Toluene, **no dilution necessary for brushing**
RECOMMENDED DILUTION RATIO FOR SPRAYING:	1 part paint (Part B) to .5 part thinner by volume.
RECOMMENDED MIXING RATIO:	100 parts paint (Part B) to 6 parts catalyst (Part A) and 1 part retardant (Part C) by weight **OR** 7 parts paint (Part B) to 1 part catalyst (Part A) and0.22 part retardant (Part C) by volume.
POT LIFE:	>3 hours.
APPLICATION METHOD:	Cup air gun or pressure pot with agitation to keep copper in suspension **OR** Brush.
DRYING TIME:	**Force Dry:** 30 minutes flash off at room temperature; then 30 minutes @ 160°F (71°C) **OR** **Air Dry:** 4 hours air dry at room temperature.
SURFACE RESISTIVITY:	<0.100 ohms point to point on 11.5" (29.21 cm) distance. or < 0.010 ohms/sq @ DFT = 5 mils

PPG Industries, Inc.
Springdale Plant
125 Colfax St.
Springdale, PA 15144
ppgindustrialcoatings.com

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MINIMUM FILM THICKNESS:	5 mils ± 1 (125 microns ± 25) dry film depending upon application.
HUMIDITY RESISTANCE:	No change in resistivity or attenuation when tested in accordance with MIL-STD-202 Method 106 – 40 cycles; MIL-STD-810 Method 507 Procedure 5 - 480 hours cycling
SKYDROL RESISTANCE:	Passes 7 days immersion with no damage to film.
COVERAGE:	650 SF/gallon/mil at 100% efficiency. (15.95 square meters/liter/25 microns)
STORAGE LIFE:	Recommended storage in unopened containers is 6 months from date of manufacture. Older material should have all Q.C. requirements rechecked before using.
NOTE:	Part "A" is moisture sensitive. Keep container tightly closed after use.
COATING SYSTEM:	Prime substrate with MIL-P-85582. Apply 599-Y1306 with MIL-C-46168. System meets MIL-STD-210.

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SPRAYING APPLICATION INSTRUCTIONS FOR SERIES 599-Y1306 CONCENTRATE ANTENNA GUARD COPPER CONDUCTIVE COATING

MATERIAL DESCRIPTION:

Part "A" (Clear Catalyst) - One part by volume in one-pint can.

Part "B" (Copper-filled Paint) - Seven parts by volume in one-gallon can.

Part "C" (Clear Retardant) - 0.25 parts by volume

INSTRUCTIONS FOR USE:

1. Put Part "B" on a paint shaker and shake for 20 minutes. Open the can and check the bottom for any residual settling. If there is any settling, finish mixing with a spatula by hand. Be sure there is no copper left at the bottom of the can.

2. Transfer Part "B" to a larger container and dilute with toluene to the desired viscosity. Recommended dilution ratio is between:

    a. 1:0.5 by volume (Part B:Toluene)
    b. 1:1.0 by volume (Part B:Toluene)

    Dilution ratio (a) results in high solids, higher viscosity and faster film build-up and also shorter pot life.

    Dilution ratio (b) results in lower solids, lower viscosity and slower film build-up but longer pot life.

3. Add Part "A" and Part "C" to diluted Part "B" and mix thoroughly again.

4. Spray paint at 5 +/- 1 mils dry film thickness. Keep mixing constantly while spraying.

5. Flash off paint for 30 minutes at room temperature, then 30 minutes at 160°F OR air dry for 4 hours.

6. Check dry film thickness, conductivity and adhesion to the substrate.

NOTE: If paint viscosity increased beyond usable pot life, do not dilute it with additional thinner. Such paint cannot be used.

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