



SOS Series 599-B3755 | Product Data Sheet

SERIES 599-B3755 is a new sprayable silver-coated copper conductive coating for use on plastic substrates. It is unique in that it is formulated in **very mild solvents** that can tolerate higher built-in stresses which can be found in molded parts, and provides effective shielding at less than 1.0 mil (25 microns) dry film thickness. The dried conductive film is extremely hard, tough and durable. **599-B3755** contains no methyl ethyl ketone (MEK) or other strong solvents which can attack solvent-sensitive substrates, such as polycarbonate and polycarbonate blends. It is designed with a fast drying solvent blend which is desirable in high volume production.

OUTSTANDING CHARACTERISTICS:

- ▶ Compatible with sensitive plastics because of mild solvents.
- ▶ Effective shielding at less than 1.0 mil (25 microns) dry film.
- ▶ Passes U.L. requirements.
- ▶ Excellent film cohesion.
- ▶ "Zero tolerance" for loose particles in the film.
- ▶ Excellent adhesion to most plastic substrates.
- ▶ Excellent abrasion resistance.
- ▶ Supplied as a viscous liquid for reduced settling.
- ▶ Minimal overspray and dusting during application.
- ▶ No rub-off due to handling.
- ▶ Fast drying.
- ▶ Passes ASTM D-3359-97 adhesion test.

Other products in the SOS Series are 599-B3730 (Silver) and 599-B3740 (silver/copper Hybrid)

Percent Solids:	29 ± 1.5% by weight.
Density:	9.25 ± .5 lbs. per gallon.
RCA Abrader:	Passes 500+ cycles.
Viscosity: (as supplied)	Thixotropic mixture.
Dilution:	4:1 by volume.
Application Viscosity:	The thixotropic properties of 599-B3755 can be maintained during application using a combination of Ethyl Alcohol* and B-4045 (Super Mega Thinner) as the diluent. The recommended viscosity range at application is 8 - 18 seconds #4 EZ Zahn Cup. Our testing has shown that a viscosity of 13 seconds is ideal. Realize that a full range of custom viscosities can be created to satisfy any need.
Note: 599-B3755 can be sprayed as received, but a dilution of 4:1 by volume is recommended.	
Resistivity:	Less than .015 ohm/square per 1.0 mil (25 microns) dry film.
Environmental Testing:	No change in resistivity after 7-day exposure to 85°C. @ 85% R.H.
Coverage:	98 square feet per gallon per 1.0 mil (25 microns) dry film.
Mask Cleaning:	Use Challenge 485S @ 16 oz./gallon @ 180-185°F. @ 70 psi pump pressure. If necessary, use Challenge 1052 as a defoamer.
Shelf Life:	Nine (9) months from date of manufacture.
Craze Test:	In most applications, some degree of stress is inevitable. For this reason, a minimum "critical stress" value of 2000 psi was chosen as criteria for compatibility with polycarbonate, i.e. a compatible formulation is one which induces no crazing or cracking at stresses below 2000 psi.

1. Pass - 10 minute immersion at 2000 psi stressed injection molded clear polycarbonate resin bars.
2. Pass - spray applied to 2000 psi stressed injection molded clear polycarbonate resin bars dried at room temperature.
3. Pass - spray applied to 2000 psi stressed injection molded clear polycarbonate resin bars dried at a graduated temperature ranging from room temperature to 160° F. over 10 minutes.

*Ethyl Alcohol - 190 Proof (95% Ethyl Alcohol/5% Water)

Although **599-B3755** is formulated in mild solvents, the user must test the compatibility on the actual molded parts to determine its suitability for any specific application.

The following application parameters should be followed for optimum properties:

1. Material should be stirred thoroughly before use.
2. Material should be incorporated into a recirculating system.
3. Pressure in the system should be adjusted to produce sufficient flow rates to ensure suspension of the metal.
4. The gun should be set as follows:
 - a. Completely shut off needle to the gun.
 - b. Slowly open needle to achieve a minimum wet film.
 - c. Adjust fan for part.
 - d. Readjust needle setting to ensure minimum wet coat.

By following the above procedures, a number of benefits will be achieved. The optimum minimum film thickness will result in minimum cost per part. The above techniques will produce a very smooth and bright appearance. Maximum conductivity will also be achieved.

NOTE: 599-B3755 dries rapidly. Keep container closed. If skins develop, do not attempt to dissolve - strain through a coarse filter. Clean equipment after each use. Ethyl alcohol can be used to clean equipment. If strong solvents are used, flush the system with ethyl alcohol before use.

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DILUTION PROCEDURE FOR 599-B3755

Objective: To achieve 11 - 16 seconds #4 Zahn cup when diluted with a blend of EA (Ethyl Alcohol) and MT (Mega Thinner B-4045). The ideal viscosity would be 13 seconds #4 Zahn cup.

Total Dilution Ratio: 1 gallon B-3755 : 2 pints EA/MT

STEP 1: Check initial viscosity:

Viscosity	<12 seconds	12 - 16 seconds	>16 seconds
Add	1/2 pint MT	1/2 pint MT	1/2 pint EA

Viscosity

STEP 2:

Viscosity	<12 seconds	12 - 16 seconds	>16 seconds
Add	1/2 pint MT	1/2 pint MT	1/2 pint EA

Viscosity

STEP 3:

Viscosity	<12 seconds	12 - 16 seconds	>16 seconds
Add	1/2 pint MT	1/2 pint MT	1/2 pint EA

Viscosity

STEP 4:

Viscosity	<12 seconds	12 - 16 seconds	>16 seconds
Add	1/2 pint MT	1/4 pint EA 1/4 pint MT	1/2 pint EA

Viscosity

*Ethyl alcohol must be 190 Proof - 95% Alcohol/5% Water.

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