

LORD® UltraConductive Coating for EMI Shielding

Description

LORD® UltraConductive coating is a highly electrically and thermally conductive two-component epoxy coating designed as a single-layer spray coating for EMI shielding. The coating provides excellent EMI attenuation over a broad range of frequencies with excellent adhesion to a wide variety of non-conductive substrates.

Features and Benefits

Excellent EMI Shielding – 80+ dB from 1 – 10GHz at 1 mil thickness.

Excellent Adhesion – coating provides high adhesion to a wide variety of composite and engineering plastic substrates. For PC-ABS and PP, LORD CH 459X primer is recommended.

Environmentally Resistant – coating retains high conductivity and shielding effectiveness after exposure to temperature extremes, salt fog corrosion, and high humidity environments.

Weight Savings – enables weight savings over conventional EMI shielding materials due to efficient performance.

Application

Surface Preparation – Abrade substrate (400 grit sandpaper). Solvent clean. If required, mask off desired sections.

Mixing – Prior to mixing together, thoroughly agitate each component independently for 10 minutes using a paint shaker or propeller mixer. Ensure components are fully mixed with no sediment at the bottom of containers.

No thinners are required. If dilution is needed Methyl Ethyl Ketone (MEK) is recommended.

Combine A component resin with B component curative (mix ratio of 100 parts A to 20 parts B, by weight). Thoroughly mix contents on paint shaker for at least 5 minutes.

Applying – Coating is compatible with most forms of spray equipment. For HVLP spray equipment, an air pressure of 30 psi is recommended.

Strain coating before adding to spray equipment. Spray coating directly on to prepared substrate surface. Spray coating to required thickness depending on desired EMI shielding. Wet thickness of ~100 microns (4 mils) produces dry coating of ~25 microns (1 mil)

Coating should be applied in alternating spray patterns with a 50% overlap. Allow spray coating to flash off between passes.

Typical Properties*

	A Component Resin	B Component Curative	Mixed
Appearance	Silver Liquid	Yellow Liquid	Silver Liquid
Solids Density, g/cm ³ (lb/gal)	–	–	2.55 (21.3)
Solution Density, g/cm ³ (lb/gal)	1.39 (11.6)	0.93 (7.7)	1.28 (10.7)
Volatile Organic Content (VOC), g/L (lb/gal)	631 (5.3)	670 (5.6)	640 (5.3)
Qt Coverage, @ 25 micron (1 mil), m ² (ft ²)	–	–	9.3 (100)
Pot Life, day @ 25°C (77°F)	–	–	90
Shelf Life, yr @ 30°C (86°F)	1	1	–

*Data is typical and not to be used for specification purposes.

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UltraConductive coating must be applied with a wet appearance. Solvent should be seen flashing off of the coating within moments after spraying. If no solvent is seen flashing off, the coating has been sprayed too dry and will adversely affect the electrical conductivity. A dry-sprayed coating will appear darker and could have small spheres of material present on the coating.

Curing – For optimal coating properties, either of the following cure cycles are recommended: Dry coating for 30 minutes at 50°C (122°F) followed by 2 hours at 100°C (212°F) or dry coating for 30 minutes at 50°C (122°F) followed by 1 hour at 177°C (350°F). Cure cycle should be chosen based on upper use temperature of the substrate to be coated.

Shelf Life/Storage

Each component is shipped separately in a moisture-proof container. Shelf life of each component is one year from date of manufacture when stored at 4 to 30°C (40 to 86°F) or below in original, unopened container.

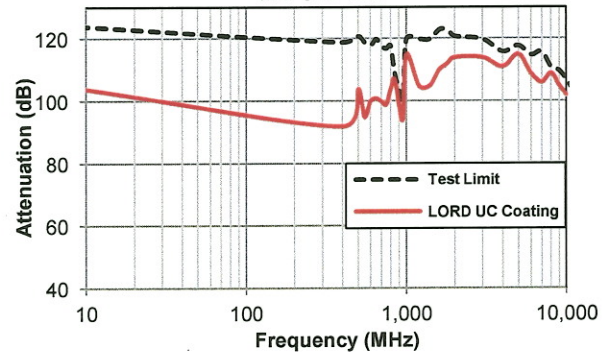
Pot life of combined coating system is 90 days when stored at -12°C (10°F) or below in moisture-proof container.

Typical Cured Properties

Sheet Resistance (Cured Coating), ohms/square
 0.024 ohm/sq \pm 10% at 1 mil (25 microns)
 0.013 ohm/sq \pm 10% at 2 mils (50 microns)
 0.009 ohm/sq \pm 10% at 3 mils (75 microns)

Shielding Effectiveness

LORD UltraConductive Coating
 MIL-STD-285



Cautionary Information

Before using this or any LORD product, refer to the Material Safety Data Sheet (MSDS) and label on the containers that describe safe handling.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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