SPRAYLAT
POWDER COATINGS

Secura ESD Coatings

Secura ESD Coating

Spraylat manufactures a unique line of Secura ESD thermosetting hybrid powder coatings. These coatings are intended to be used for a wide range of electronic related metal products. Applications include computer work stations, electronic cabinets, enclosures and furniture, clean room and semiconductor equipment including floors, work benches and shelving.

OVERVIEW

- Spraylat's Powder Coatings Group is an industry leader in providing state-of-the-art powder coating technology. Our company's novel and innovative powder coating products have provided leading-edge solutions to our customers' problems. The broad range of technologies have also expanded market opportunities for powder coating. Spraylat's Powder Coatings Group has a strong, on-going commitment to our customers to provide improved products that deliver performance while reducing the overall costs involved in powder coating manufacture.
- Based in Gainesville, TX, Spraylat's Powder Coatings Group has also established the industry benchmark for customer service and technical support.
- Spraylat offers a full line of standard powder coating technologies to the market (as shown in the following table). Spraylat continues to be the leading technology company in low-cure powder coatings. Spraylat's powder product offerings include:

▼ **Standard Products**	▼ **Special Products & Finishes**
Super Durable Polyester	Low-Cure
Polyester/Acrylic	Fluorocarbon Polymer
Polyester/Urethane	Polyester Crinkle
Polyester TGIC	Epoxy Crinkle
Polyester Epoxy Hybrid	High-Heat
Epoxy	Anti-Microbial
Silicone	Anti-Grafitti
	ESD Coatings
	Architectural Coatings

- As part of our powder technology package, Spraylat offers a complete range of finishes including smooth, metallics, textures, structures, stipples, candy, crinkle, cracked ice, etc., at various gloss levels.

Secura ESD powder coatings offer some important advantages versus alternative conductive coating processes. These include:

- Wide range of film thickness options
- Many colors; Product not color limited
- Available in smooth and textured finishes
- Recoatable Products Available
- Available in resistivities of 10^5 - 10^9 ohms

Secura ESD coatings are thermosetting hybrid powder coatings developed specifically for ESD applications. As compared to alternative ESD powder products, these coatings deliver superior gloss consistency and much greater uniformity in their resistivity values as applied. These coatings are normally applied at film thicknesses of 2-4 mils (50-100 microns). A 3 mil (75 micron) coating is a typical target thickness for this product. Increased film thickness will increase the resistivity of the coating while lower film thicknesses will increase coating conductivity. This flexibility can be an advantage for some applications. When a resistivity range is specified, confirmation of the allowable thickness range to meet these specifications should be made prior to production.

ESD—Definition

Electrostatic discharge (ESD) is a phenomena that is developed from static electricity. This is the static electricity that each of us has experienced in some way in everyday life. ESD can be a source of significant damage to electronic equipment such as electrical boxes and chassis that house electronic equipment.

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Static electricity, although normally present at low levels that do not effect individuals, can build rapidly on objects to produce relatively high voltages. When two surfaces with different voltages meet each other, a charge can pass from one object to the other. This phenomenon is known as an electrostatic discharge. Although it may last for only a micro-second or less, the peak discharge current can be several amps and the peak power can be in kilowatts.

ESD Background

Today's electronics incorporate very sensitive components that are subject to potential failure if subjected to an ESD event. ESD can also create an induced EMI (electromagnetic interference) field that is capable of causing data errors, corruption of logic circuit inputs or complete device failure. From mainframe computers to mobile electronics and including industrial control systems, issues of performance, reliability and safety require that protection against ESD is incorporated into product planning and design. Many components, especially those used in more advanced electronic products, are engineered with internal protection circuits. Sometimes, however, this protection is insufficient to meet overall ESD product requirements and ESD coatings are required to provide proper ESD performance.

ESD coatings are designed to control the rate of discharge when such an event occurs, limiting the current density of any electric arc that develops as voltages interact. ESD coatings function to increase the resistance or capacitance in the contacting area, decreasing the rate of discharge and lessening any potential for an ESD event. If ESD concerns need to be addressed in product manufacture, conductive powder coatings represent one important solution that can provide a cost-effective engineering solution.

Secura ESD Coatings Properties

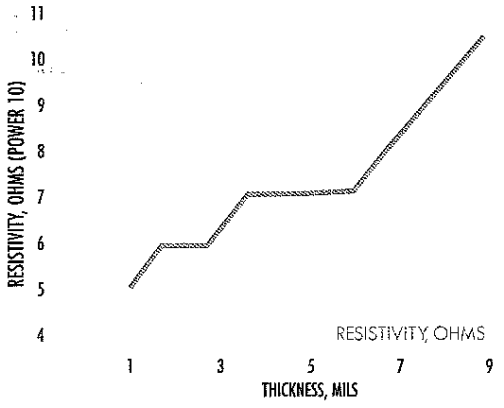
▼Cure Schedule	360°F; 10 min , PMT
▼Specific Gravity	1.4 - 1.7
▼Gloss, 60°	5°-90°
▼Thickness	2-4 mils (50-100 microns)
▼Pencil Hardness	H- 2H
▼Impact	Direct: 120 in/lbs Reverse: 120 in/lbs
▼Cross Hatch	5b; No lifting
▼Mandril Bend	Pass 1/8" bend; No cracking
▼Salt Spray	Pass 1000 hrs , <1/8" creepage; No blisters

(Test performed on iron phosphated B1000 panels)

Secura ESD Performance

Spraylat Secura ESD coatings have been tested against current ANSI/EOS/ESD standards. ANSI/EOS/ESD-S4.1-1990 work surface resistive characterization standards were used to verify their ESD performance. Testing was conducted according to the ANSI/EOS/ESD-S11.11-1993 surface resistivity measurement method for the static discharge of planar materials. The following results show the performance of Spraylat Secura ESD coatings.

Film Thickness Effects on Resistivity



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