

# PROPERTIES AND TECHNICAL NOTES

## SPI Supplies Carbon Paint

### Physical Properties (as supplied suspension):

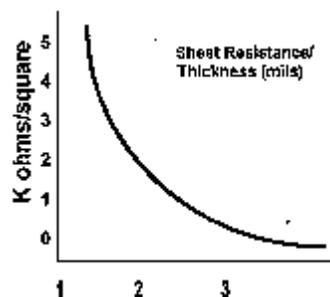
Pigment:	graphite
Color:	black
Binder/thickener:	cellulosic resin
Carrier:	isopropanol
Diluent:	SPI Carbon Paint Thinner or isopropanol
Consistency:	liquid
Density:	7.4 lbs/gal (0.888 kg/l)
Weight % solids:	20%
Volume % solids:	14%
Flash point:	52° F/ 11°C
Shelf life:	6 months from date of original shipment, unopened
Coverage:	225 ft <sup>2</sup> /gal @ 1 mil (5.524 m <sup>2</sup> /l)
VOC:	710 g/l (5.9 lb/gal)

### Typical Properties (Cured Coating):

Color:	matte black
Coefficient of friction:	0.15 (static)
Service temperature:	150° F/ 65°C
Sheet resistance:	1.2 K ohms/sq @ 1 mil (25µm) dry film thickness

### Electrical Properties of Cured Coating

The electrical properties of the final cured coating can be controlled by changing the film thickness as shown below:



## **Method of Use:**

### **Surface Preparation:**

Substrates to be coated must be clean and dry. A solvent wipe with air dry is usually sufficient for smooth surfaces. For porous surfaces, use the same procedure follow by heating to drive off entrapped contaminants, solvents or moisture.

### **Mixing and Application:**

SPI Supplies Carbon Paint is supplied in concentrated form. It is thixotropic in nature and will gel upon standing. Preparation involves thorough agitation of the concentrate, then dilution with isopropanol or with [SPI Supplies Carbon Paint Thinner](#).

The product can be applied by brush, dip, roller or spray.

Always agitate thoroughly just prior to use.

A coating thickness of 1 mil (25  $\mu\text{m}$ ) is best built up by the application of five separate coats at 0.2 mil (5  $\mu\text{m}$ ) thickness by spray application. Dilution of 1 part by volume of product with 3 parts by volume of thinner is necessary to obtain an adherent coating of this thickness.

For small production work and prototypes, a suction cup gun may be used, providing the carbon paint is thoroughly mixed before spray application. For immediate production runs or a lot of small parts, propeller-type attachments should be used on the suction gun to ensure coating uniformity. Full production is best handled with propeller-agitated pressure pot systems as this provides the best in application efficiency.

To reduce overspray, use the minimum atomization pressure required for adequate coverage.

### **Curing:**

The coating air dries to the touch in 5 minutes and is ready to use in 30 minutes. Following the air dry, bake for 5 minutes at 167° F/ 75°C to achieve optimum coating qualities in a shorter curing time.

**Revised by:** EER

**Date:** 9/15/2015