POSS® Coat SC4304

SC4304 is a nano-reinforced, two-part silicone adhesive coating based on POSS® technology. It contains 60wt% nanostructured POSS® materials which offer excellent hardness and durability. It is designed for electronic applications that require robust environmental protection from humidity, temperature and radiation. It can be used as embedding and potting compound, encapsulant, adhesive, and protective coating. SC4304 is optical clear and is adhesive to metallic, glass, and plastic materials.

KEY PERFORMANCE

- *Resist to thermal shock, radiation, and humidity*
- *Good mechanical properties; Flexible*
- *Room temperature curable*
- *Transparent*
- *Operation temperature from -65°C to +200°C*
- *Low volatility*
- *Low viscosity*

TYPICAL RESIN PROPERTIES

Nano-reinforced POSS®:	60%
Cure chemistry:	Hydrosilation
Appearance:	Clear liquid
Viscosity (after mixing):	<5 poise
Shelf life:	1 year
Pot life:	2 hours
Shrinkage:	Very low
Tack-free time @ 25°C:	6 hours
Tack-free time @ 60°C:	30 minutes

TYPICAL PHYSICAL PROPERTIES
(cured 24 hours @ 100°C)

Appearance:	Transparent
Density:	1.1 g/ml
Operation temperature:	(-65°C) – (+200°C)
Tensile strength:	> 1 MPa
Elongation at break:	10%
Shore A hardness:	82

CURE PROCEDURE

SC4304 can be cured at room temperature or at elevated temperatures. For room temperature cure, the material becomes tack free after 6 hours, reaches handling strength after 12 hours and full mechanical strength after 3-7 days. Faster curing cycles can be achieved at elevated temperatures.

Recommended cure cycle:

1) Clean the surface preferably with organic solvents such as acetone.
2) Mix Part A (resin) to Part B (hardener) at a ratio of 4:1 in weight percentage.
3) Thoroughly stir the mixture.
4) Degas only if the coating is thicker than 10 mils (500 microns).
5) Apply the resin.
6) For room temperature cure, sample is tack-free after 6 hours.
7) For elevated temperature cure, leave the resin at room temperature for 1 hour before a heating cycle of 3 hours @ 80 °C, or 1 hours @ 100 °C, or 30 minutes @ 150 °C.
8) Slowly cool the parts down to room temperature.

WARRANTY

The information contained herein is believed to be accurate and reliable. However, the user is responsible for determining the suitability and use of the final formulations/products. Hybrid Plastics warrants that its products will meet specifications, but not merchantability or fitness for use.

Hybrid Plastics™ Superior Technology for Superior Products
55 W.L. Runnels Industrial Dr., Hattiesburg, MS 39401, USA
www.hybridplastics.com, 601-544-3466 voice, 601-545-3103 fax.

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