

E-Solder[®] and E-Kote[®] Silver-Filled Adhesives and Paints

Von Roll has established itself as a premier industrial manufacturer since 1803. Von Roll is the global market leader for electrical insulation materials/systems and is also a global player in the electronics industry, with a diversity of products such as potting resins, composites, CDM[®] materials, special filled coatings and adhesives.

E-Solder[®] and E-Kote[®]

The Von Roll E range of silver-filled conductive coatings is used for printed circuits, EMI/RFI shielding, grounding and electrical dissipation. E-Solder[®] products are adhesives and E-Kote[®] products are paints. These highly conductive products were introduced in 1959 and have been continuously developed to meet changing customer requirements.

Choosing the Right Material

E-Kote[®] and E-Solder[®] materials are specifically designed to offer users an economical and durable method for grounding, electrostatic control and electromagnetic interference shielding of structural foam enclosures, as well as, other plastic components found in electronic devices and peripheral equipment.

E-Kote[®] and E-Solder[®] meet the needs of the electronic packaging industry for durable, low-cost, easily applied EMI/RFI shielding materials which are utilized in shipping and storage containers fabricated from thermoplastic, fiberglass-reinforced plastics, glass and cardboard. The effectiveness of E-Solder[®] and E-Kote[®] materials is influenced by the raw material, the conductivity and the coverage requirements.

Making the right selection for a particular application requires an understanding of the substrate, such as, geometry, thickness, mass, permeability, frequency and porosity. The conductivity requirement depends on the application.

Typical industry resistivity values are shown below:

Function	Resistivity in ohm/sq
Printed circuits	0.001 to 5
EMI/RFI shielding	1 to 30
Grounding	10 to 50
Electrostatic dissipation	50 to 200

When selecting an E-Kote®/E-Solder® and associated solvents, adhesion and stress crazing (solvents attacking the plastic and stress areas) have to be taken into consideration. Adhesion to plastic substrates such as PPO, PS, PC, ABS, PET or PVS is a function of the specific material. PC, ABS and PS are more sensitive than other plastics.

Range of Products

E-Solder® adhesive materials:

E-Solder®	Description	Color	Base	Hardener ratio	Typical tensile strength (PSI) @ 24°C Al to Al	Pot life	Typical cure schedules	Typical butt tensile strength @ 25°C	Typical ohm-cm resistivity	Maximum operating temperature
3012	Thixotropic paste	Silver	Epoxy silver	NA	2.000	NA	135°C 6 to 18h 200°C 10 to 30min	5.000	0.0005 @ 25°C	175°C
3022	Paste	Silver	Epoxy silver	100:8 with H 18	2.000	1 to 2h	25°C 24h 65°C 3h	–	0.003 @ 65°C	150°C
3025	Paste	Silver	Epoxy silver	50:50 Part A and Part B	2.000	4 to 6h	25°C 24 to 36h 65°C 4h	2.500	0.004 @ 65°C	150°C
3026	Thixotropic paste	Silver	Epoxy silver	100:6.5 with H 45	1.400	1h	65°C 4h	1.400	0.01 @ 25°C	85°C
3083	Paste	Silver	Epoxy silver	50:50 Part A and Part B	1.800	5 to 6h	80°C 90min 120°C 15min	3.000	0.0004 @ 25°C	300 to 400°C for wire bonding

E-Kote® paints:

E-Kote®	Description	Color	Base	Typical cure schedules	Typical sheet resistivity ohm/sq	Typical ohm-cm resistivity	Maximum operating temperature
3030	Paint	Silver	Acrylic silver	Air dry	0.2 @ 25°C	0.0005 @ 25°C	175°C
3040	Paint	Silver	Acrylic silver	Air dry	0.5 @ 25°C	0.001 @ 25°C	175°C
3063	Paint	Black	Acrylic nickel	Air dry	1mil 1.5 @ 25°C 2mil <1.0 @ 25°C		175°C
3064	Paint	Silver	Acrylic nickel	Air dry	1mil 1.0 @ 25°C 2mil 0.5 @ 25°C		175°C
3068	Paint	Silver	Epoxy silver	Air dry faster with higher temperatures	0.2 per mil	0.0005 @ 25°C	175°C
3072	Paint	Gray	Acrylic graphite	Air dry	3mil 250 @ 25°C		175°C

Packaging

E-Kote® and E-Solder® materials are available in cans and tubes. Please consult our technical datasheets for further information.

