

SC1502

Stretchable Printed Carbon Conductor

Product Description

ACI SC1502 is a carbon-filled conductor for printed circuitry and devices on elastomeric substrates. It can be dried at low temperatures to accommodate sensitive substrates and devices. After curing, the ink has good conductivity and offers excellent elongation and flexibility. SC1502 has been formulated for superior adhesion to thermoplastic urethanes (TPU). It is compatible with ACI's other stretchable materials and can be printed over the silver grades in sensor applications to limit silver migration.

Product Benefits

- Superior stretch performance on TPU offering elongation greater than 200%
- Excellent resistivity and rapid return after strain
- Excellent adhesion to TPU
- Low cure temperature (80°C) is possible for temperature sensitive materials
- Compatible with other products in ACI's stretchable electronics platform

Typical Performance

Volume Resistivity 120°C for 15 min in box oven	<200 Ω/square/mil < 0.5 Ω·cm
Maximum Elongation ¹	>200%
Adhesion ²	5B

¹ 2 mm wide trace cured on TPU substrate

² ASTM D3359 Method B

Typical Properties as Supplied

Physical State	Paste
Color	Black
Viscosity ³	37 Pa·s
Density	1.08 g/mL
Percent Solids ⁴	20%
Shelf Life at 20°C	6 Months

Typical Processing Parameters

Deposition Methods	Screen printing, syringe dispense/direct write
Curing Time and Temperatures	15 min box oven ≥ 120°C < 5 min in industrial conveyor oven at ≥ 120°C
Recommended Screen Meshes	200/230 stainless steel
Recommended Cured Thickness ⁵	6-12 μm
Coverage	43/33 m ² /kg
Mixing	Slow thorough mix, avoid inducing bubbles, fixed spatula in rotating jar ideal ⁶
Thinner/Diluent	SE8106
Clean Up Solvents	Acetone, MEK, and similar solvents

³ Anton Paar MCR302 10s⁻¹ at 25°C

⁴ 150°C for 120 minutes in box oven

⁵ Double print wet on wet or dry can be used to increase deposition thickness

⁶ AT-LM4 Stirring Type Mixer (E211) recommended

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Caution

Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapors emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

Disclaimer

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