

# SH5025

## Printed Fixed Resistance Heater Ink

### Product Description

ACI SH5025 is a stretchable resistive trace designed for heating applications integrated onto elastomeric substrates. When cured, the ink has a prescribed resistance value and offers excellent flexibility and stretchability. SH5025 has superior adhesion to TPU and other elastomeric substrates, and is fully compatible with ACI's other stretchable electronics products. Contact ACI's engineering team for any design questions you have in using this ink in your heated project.

### Product Benefits

- Superior stretch performance with elastomeric substrates
- Excellent adhesion to TPU and other elastomeric substrates
- Washable with ACI stretchable insulator
- Screen printable for volume applications
- Fully compatible with ACI's stretchable electronics platform

### Typical Performance

Volume Resistivity 120°C for 15 min in box oven	25 mΩ/square/mil 6.5 x 10 <sup>-5</sup> Ω•cm
Maximum Elongation <sup>1</sup>	>50%
Adhesion <sup>2</sup>	5B

<sup>1</sup> 2 mm wide trace cured on TPU substrate

<sup>2</sup> ASTM D3359 Method B

### Typical Properties as Supplied

Physical State	Paste
Color	Dark Gray
Viscosity <sup>3</sup>	32 Pa•s
Density	2.1 g/mL
Percent Solids <sup>4</sup>	64%
Shelf Life at 20°C	6 Months

### Typical Processing Parameters

Deposition Methods	Screen printing, syringe dispense/direct write
Curing Time and Temperatures	5 min box oven ≥ 135°C 5 min in industrial conveyor oven at ≥ 125°C
Recommended Screen Meshes	200/230 stainless steel
Recommended Cured Thickness <sup>5</sup>	8-12 μm
Coverage	10/12 m <sup>2</sup> /kg
Mixing	Slow thorough mix, avoid inducing bubbles, fixed spatula in rotating jar ideal <sup>6</sup>
Thinner/Diluent	SE8106
Clean Up Solvents	Acetone, MEK, and similar solvents

<sup>3</sup> Anton Paar MCR302 10<sup>-1</sup> at 25°C

<sup>4</sup> 150°C for 120 minutes in box oven

<sup>5</sup> Double print wet on wet or dry can be used to increase deposition thickness

<sup>6</sup> AT-LM4 Stirring Type Mixer (E211) recommended

## Contact ACI

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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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