

MicromaxTM 5025

Electronic Inks and Pastes

Silver Conductor

MicromaxTM 5025 silver conductor is used to fabricate low voltage circuitry, especially on flexible substrates. It can be used with manual, semi-automatic, and reel-to-reel equipment.

Product benefits

• Best general purpose Ag for higher temperature operations

Product information

Solvent or thinner Micromax $^{\text{TM}}$ 8210 Solid content 60.3 - 61.7 $^{[1]}$ % Maximum Service Temperature 110 $^{[2]}$ °C

[1]: 750°C

[2]: on 5-mil Polyester Film

Rheological properties

Viscosity 20 - 30^[3] Pa.s

[3]: Brookfield 0.5RVT, 5 rpm, #14, 25°C

Application technique

 $\begin{array}{ccccc} \text{Mask mesh} & 325 \\ \text{Drying time} & 5 - 6^{[4]} & \text{min} \\ \text{Drying temperature} & 120^{[4]} & ^{\circ}\text{C} \\ \text{Theoretical coverage} & 230 - 320^{[5]} & \text{cm}^2\text{/g} \\ \text{Recommended film thickness, dried} & 12 - 15 & \mu\text{m} \\ \end{array}$

[4]: box oven

[5]: Dependent on print thickness

Typical mechanical properties

Adhesion, pull tape no material class transfer^[6]

[6]: 3M Scotch Tape #600

Electrical properties

Surface resistivity 8 - 15^[7] mOhm per square

[7]: at 25.4µm

Printed: 2023-09-21 Page: 1 of 3

Revised: 2023-08-02 Source: Celanese Materials Database



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Storage and stability

Shelf life 6^[8] months

[8]: in unopened containers, from date of shipment, at temperature <25°C

Additional information

How to use Processing

- Substrates
 - · Polyester, polyimide, paper, epoxy glass
- Screen types
 - Stainless steel, polyester
- Printing
 - · Reel-to-reel, semi-automatic, manual
- Typical circuit line thickness
 - o Printed with 325-mesh stainless steel screen
 - o 12 15 μm
- Work life
 - ∘ > 2 hours
- Clean-up solvent
 - · Ethylene diacetate or Methyl propasol acetate
- Drying
 - Box oven : 120°C for 5-6 minutes
 - Reel-to-reel: 140°C for 1 minute
 - Dry and cure in a well ventilated oven or conveyor dryer where the exhaust meets environmental regulations.

Properties

Typical Physical Properties on 5-mil Polyester Film

Test	Properties
Resistivity after Flex (m Ω /sq at 25.4 μ m) 15 sec after test Crease (180 $^{\circ}$, 1 cycle)	≤ 50
Abrasion Resistance, Pencil Hardness (ASTM D3363-74) [H]	≥1
Soldering	Not Recommended
Change in Physical Properties after Environmental Tests*	Insignificant

Printed: 2023-09-21 Page: 2 of 3

Revised: 2023-08-02 Source: Celanese Materials Database



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Change in Electrical Properties after < 10
Environmental Tests* (%)

- * Environmental Tests
- Thermal Shock (+85°C to -40°C, 30 min. each, 5 cycles)
- Dry Heat (+85°C, 20 days)
- Humidity (+60°C, 95%RH, 10 days) (MIL Std 202E, method 103, cond. A)
- Salt Spray (+35°C, 5% salt, 10 days) (ASTM B117)
- Silver Migration (1 V DC/25.4 μ m gap, +40 °C, 90% RH, 500 hr, tested on 1016 μ m and 1778 μ m gaps)
- Sulfate Dioxide (+45°C, 90% RH, 500 hrs in a 9-liter chamber containing 500 mg of sulfur)

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5025 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Storage and shelf life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature (<25 °C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).

Printed: 2023-09-21 Page: 3 of 3

Revised: 2023-08-02 Source: Celanese Materials Database

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