Micromax™ 9318

Electronic Inks and Pastes

Resistors Composition

Micromax™ 9318 is low-resistivity, particularly suited to potentiometer and trimmer uses. The contact resistance variation of these compositions is excellent and they offer predictable, reproducible resistance values.

Product information

Solvent or thinner	Micromax™ 8250
Blend member or series	9318 and 9319

Rheological properties

Viscosity	185 - 270[1]	Pa.s

[1]: Brookfield HBT, SC4-14/6R, 10 rpm, 25 °C

Application technique

Mask mesh	165 - 200	
Mask emulsion	17.8	µm
Drying time	10 - 15	min
Drying temperature	100 - 150	°C
Theoretical coverage	65 - 85[2]	cm^2/g
Recommended film thickness, dried	22 - 28	µm
Leveling time	5 - 15	min

[2]: at 50µm wet film thickness

Electrical properties

Surface resistivity	1350 - 1650	mOhm per square
Hot Temperature Coefficient Resistance	-250 - 250[3]	ppm/K
Cold Temperature Coefficient Resistance	-250 - 250[4]	ppm/K

[3]: from +25 to +125 °C for Hot TCR

[4]: from -55 to +25 °C for Cold TCR

Storage and stability

Shelf life	6[5]	months

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

Additional information

How to use

Processing

- Termination compatibility
  - Micromax™ 9318 resistor composition is compatible

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with Micromax™ Palladium/Gold 8651. Other conductors have not as yet been tested for compatibility.

- Printing
  - Micromax™ 9318 resistor compositions are formulated for screen printing with 165-200 mesh woven wire of filament screens. 200-mesh stainless steel screens with 0.7mil emulsion thickness normally product the recommended 25µm dried thickness necessary to obtain the stated performance characteristics. Satisfactory results can be obtained with dried thickness of 22-28µm. Variations in print thickness will result in corresponding variations in performance characteristics, particularly sheet resistivity. Control and reproducibility of print thickness is essential to obtain predictable, reproducible fired resistor properties.
- Drying
  - Prints should be dried 5-15 minutes at room temperature to permit leveling of screen mesh marks. Drying may then be completed in 10-15 minutes at 100-150°C.
- Firing
  - Micromax™ 9318 resistor compositions should be fired in a belt furnace using the standard Micromax™ firing profile. A peak firing temperature of 850°C (10 minutes at peak) with a total cycle of 60 minutes is recommended.
- Encapsulant
  - Micromax™ 9318 resistor compositions are not encapsulated when used in trimmers.

Properties

Fired Resistor Properties

Test	Properties
Contact Resistance Variation (CRV) (%)	~1.00

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications.

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.

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Safety and handling

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

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