

# Micromax™ 4597R

## Electronic Inks and Pastes

### Solderable Conductor

Micromax™ 4597R is a phthalate and cadmium-free\* solderable platinum/palladium/gold conductor for high density single and multilayer hybrids. It has excellent tin/lead solderability and exhibits high leach resistance on both alumina and dielectric.

### Product benefits

When used on alumina or with Micromax™ multilayer dielectrics, Micromax™ 4597R offers the following benefits:

- Phthalate and Cadmium free\* solderable
- Excellent solder acceptance
- Improved backlight density
- High circuit density
- High reliability

\*Phthalate and cadmium 'free' as used herein means that these are not intentionally added to the referenced product. Trace amounts however may be present.

### Product information

Solvent or thinner

Solid content

[1]: 1050 °C

Micromax™ 9180R

80.1 - 81.4<sup>[1]</sup> %

### Rheological properties

Viscosity

180 - 280<sup>[2]</sup> Pa.s

[2]: Brookfield HBT, SC04 14/6R [UC&SP], 10 RPM, 25 °C

### Application technique

Mask mesh

200<sup>[3]</sup>

Mask emulsion

12 µm

Drying time

15 min

Drying temperature

150 °C

Theoretical coverage

60 - 70 cm<sup>2</sup>/g

Recommended film thickness, fired

13 - 17 µm

Print resolution, lines

150 µm

Print resolution, spaces

100 µm

Leveling time

10 - 15 min

[3]: Screen Types: Stainless steel

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### Specific Application Suitability

|                                                           |            |
|-----------------------------------------------------------|------------|
| Solder leach resistance                                   | ≥15 cycles |
| Solder acceptance                                         | ≥95 %      |
| [4]: On Alumina. 10 sec dips at 240°C 63Sn37Pb solder.    |            |
| [5]: On Alumina. In the case of on Micromax™ 5704, ≥ 97%. |            |

### Electrical properties

|                            |                                         |
|----------------------------|-----------------------------------------|
| Surface resistivity        | 30 - 100 <sup>[6]</sup> mOhm per square |
| [6]: @10μm fired thickness |                                         |

### Storage and stability

|                                                                                 |                         |
|---------------------------------------------------------------------------------|-------------------------|
| Shelf life                                                                      | 6 <sup>[7]</sup> months |
| [7]: in unopened containers, from date of shipment, at room temperature (<25°C) |                         |

### Additional information

How to use

### Processing

- **Substrates**
  - Properties are based on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.
- **Printing**
  - A 200-mesh stainless steel screen with a 12μm (0.5 mil) emulsion thickness is recommended. Printing speeds up to 30 cm/s (12in/s) can be used.
- **Drying**
  - Allow the wet print to level at room temperature and then dried.
- **Firing**
  - Dried prints should be fired in a belt furnace. Use a 60-minutes cycle with a peak temperature of 850°C.

### Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 4597R based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

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### 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.

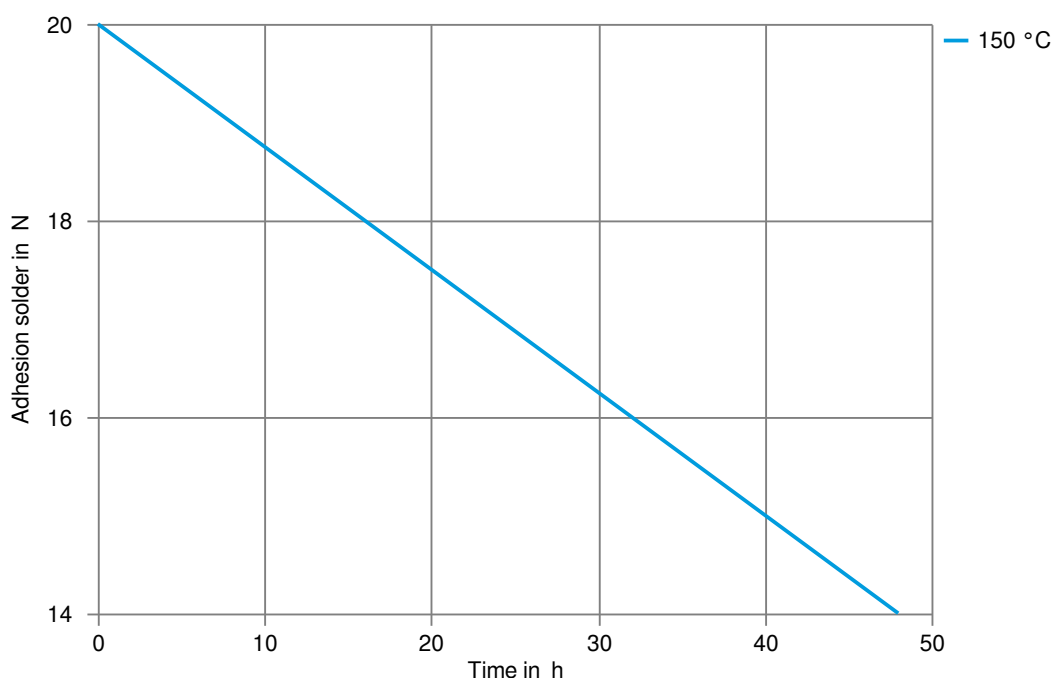
### Safety and handling

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

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### Adhesion solder after heat ageing



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