# Micromax™ 6277

## Microcircuit and Component Materials

## Silver/Palladium Conductor

Micromax™ 6277 is a general purpose microcircuit conductor offering excellent adhesion, fired density and wide processing latitude. It has been designed to give high yields and to be cost-effective in demanding, commercial circuit applications.

## Product benefits

- High thermal cycle and long term aged adhesion
- Broad process latitude : insensitive to firing temperature, profile, refiring and thickness
- Excellent solderability
- Compatible with Micromax™ QS87 Resistor Series

## Product information

| | |
|---|---|
| Solvent or thinner | Micromax™ 4553 |

## Rheological properties

| | | |
|---|---|---|
| Viscosity | 100 - 180[1] | Pa.s |

[1]: Brookfield HBT, UC&SP, #14, 10rpm, 25°C

## Application technique

| | | |
|---|---|---|
| Mask mesh | 200 - 325[2] | |
| Mask emulsion | 10 - 15 | µm |
| Drying time | 10 - 15 | min |
| Drying temperature | 150 | °C |
| Recommended film thickness, fired | 13 - 17 | µm |
| Print resolution, lines | 110 - 140[3] | µm |
| Leveling time | 5 - 10 | min |

[2]: stainless steel

[3]: using 125µm/125µm

## Electrical properties

| | | |
|---|---|---|
| Surface resistivity | ≤18[4] | mOhm per square |

[4]: @15µm

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## Storage and stability

| | |
|---|---|
| Shelf life | 6[5] months |

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

## Additional information

How to use

## Design & compatibility

- Compatibility
  - No significant shifts in Resistivity or TCR when used to terminate Micromax™ QS87 Resistors.

## Processing

- Printing
  - Micromax™ 6277 prints easily using 200-325 mesh stainless steel screens with a 10-15 µm emulsion, at printing speeds up to 25 cm/s (10in/s).
- Drying
  - Allow prints to level at room temperature, then dry in a well ventilated oven or belt dryer.
- Firing
  - Fire in well ventilated moving conveyor furnace, in air with a 30-60 minute cycle to a peak temperature of 850°C.

## Properties

Typical Physical Properties

| Test | Properties |
|---|---|
| Solder Acceptance*1 on $Al_2O_3$ | Excellent |
| Solder Leach Resistance*2 on $Al_2O_3$ | 6 - 8 cycles |
| Adhesion*3 Initial (N) | 34 |
| Adhesion*3<br>after 5000 thermal cycles (N) | 19 |
| Adhesion*3<br>after 3000 hours at 150°C (N) | > 18 |
| Line Resolution (µm) [lines/spaces]<br>using 125µm/125µm | 140 - 110 |

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*1 Excellent characterized as greater than 95%, wetting smooth solder film after 5 seconds dip in 62Sn/36Pb/2Ag solder at 220°C using mildiy-activated flux. Equivalent results for 30 or 60 minute firing prosiles.
*2 Cycle consists of dip in mildly-activated flux (Alpha 611), 10-second dip in solder (62Sn/36Pb/2Ag solder at 230°C) and washing off flux residue. Equivalent results for 30 or 60 firing profiles.
*3 90°wire peel test on 2 mm x 2 mm pads soldered with 62Sn/36Pb/2Ag solder at 220°C and mildly-activated flux. Equivalent results for 30 or 60 minute firing profiles. Average values are stated. Thermal Cycle Conditions : -40/+125°C with 30 minutes at each temperature and approximately 10 minute transition time between temperatures.

Information in this datasheet shows anticipated typical physical properties for Micromax™ 6277 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 shlef 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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