

# Micromax™ 6118A

## Electronic Inks & Pastes

### PRODUCT DESCRIPTION

#### LTCC Silver Plateable Conductor

Micromax™ 6118A is intended for use as a co-fired silver plateable conductor for Micromax™ 951 and 9K7 GreenTape™ systems. Micromax™ 6118H is a blend member to adjust the viscosity of Micromax™ 6118A when needed.

#### Product benefits

- High conductivity
- Electroless Ni/Au plateability
- Wirebondable (1 mil Au wire) after plating\*
- Brazeable (Au80/Sn20) after plating\*
- Lead free and cadmium free\*\*

\*Appropriate plating conditions are required. Results may vary.

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

#### Plated Performance\*

##### 1 mil Au wire bonding

1000 hrs at 150°C [g] >11

1000 TCA (-40/1250°C) [g] >11

##### Pin Brazing (80Au/20Sn)

1000 hrs at 150°C [pounds] >15

1000 TCA (-40/1250°C) [pounds] >10

Performance results above were obtained using laboratory test patterns after Ni/Au plating with 40-80 inch Au. These are not intended to be product specifications.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

**PRODUCT INFORMATION**

| General Properties         | Value Unit                 |
|----------------------------|----------------------------|
| Application                | LTCC conductor             |
| Solvent or thinner         | Micromax™ 8250             |
| Solid content <sup>1</sup> | 84 to 86 %                 |
| Blend member or series     | Green Tape™<br>6118A/6118H |

**TECHNICAL DATA**

| Rheological Properties | Value Unit     |
|------------------------|----------------|
| Viscosity <sup>2</sup> | 80 to 130 Pa.s |

| Application Technique      | Value Unit   |
|----------------------------|--------------|
| Mask mesh                  | 325          |
| Mask emulsion              | 28 µm        |
| Drying time                | 5 to 10 min  |
| Drying temperature         | 80 to 120 °C |
| Recommended film thickness | 15 to 22 µm  |
| Leveling time              | 5 to 10 min  |

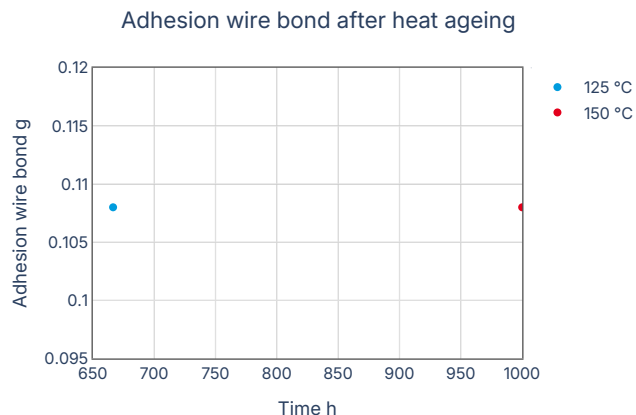
  

| Storage and Stability   | Value Unit |
|-------------------------|------------|
| Shelf life <sup>3</sup> | 6 months   |

<sup>1</sup>750°C

<sup>2</sup>Brookfield RVT, #14 spindle, 10 rpm, 25°C

<sup>3</sup>in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C



## PROCESSING GUIDELINES

### Design & compatibility

#### Compatibility

Micromax™ has tested this composition with the Micromax™ GreenTape™ 951 and 9K7 Systems. It is impractical to cover every combination of materials, customer processing conditions and circuit layout. It is therefore essential that customers thoroughly evaluate the material in specific situations to completely satisfy themselves with the overall quality and suitability of the composition for its intended application(s).

#### Printing

The composition should be thoroughly mixed prior to use. This is best achieved by slow, gentle, hand-stirring with a clean, burr-free, flexible, plastic spatula for 1-2 minutes. Care must be taken to avoid air entrapment.

Printing should be performed in a clean, well-ventilated area. Optimum printing characteristics are generally achieved in the room temperature range of 20-23°C. It is therefore important that the material, in its container, is at this temperature prior to printing.

Printing thickness must be controlled at 15-22µm dried for optimum performance. A 325-mesh stainless steel screen with 1.1mil wire at 45 degree mesh angle with < 0.5mil emulsion is recommended.

#### Thinning

This composition is optimized for screen printing; however, thinning may be required periodically to replenish solvent loss due to evaporation.

Use the Micromax™ recommended thinner Micromax™ 8250 for slight adjustments to viscosity. The use of too much thinner or the use of non-recommended thinner may affect the rheological

behavior of the material and its printing characteristics.

#### Drying

Allow prints to level for 5-10 minutes at room temperature and then dry in a well-ventilated oven or conveyor dryer. Typical drying conditions can range between 80-120°C for 5-10 minutes.

#### Lamination

Laminate external tape layers printed with Micromax™ 6118A/H to multiple sheets of GreenTape™ using the recommended processing parameters outlined in the Micromax™ GreenTape™ Design Guideline and the 951 and 9K7 product data sheets. Typical lamination conditions are 3000 psi at 70°C for 10 minutes.

#### Firing

Consult the Micromax™ GreenTape™ 951 and 9K7 technical data sheets for firing recommendations. Fire in a well-ventilated conveyor or static furnace with optimized air flows and extraction rates to ensure oxidizing conditions within the firing zone. Micromax™ 951 and 9K7 GreenTape™ requires a special 26-hour firing profile. Contact your Micromax™ technical representative for details.

#### Plating

Appropriate plating conditions are required and results may vary. Please contact Micromax™ technical service for more details and recommendations.

#### Brazing

A special profile with a peak temperature of 300°C for 5 minutes in nitrogen is recommended. Please contact Micromax™ technical for further details.

#### Properties

Information in this datasheet shows anticipated typical physical properties for Micromax™ GreenTape™ 6118A/6118H 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 between 5°C - 30°C. Shelf life of material in unopened containers is 6 months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Storage conditions on the product data sheets are intended to represent long-term material storage recommendations and not a shipping or temperature-at-receipt requirement.

Transportation: Under normal shipping conditions, without temperature control, Micromax™ products are not expected to exhibit a change in quality or fitness for use. Should extraordinary events result in extended transportation periods, Micromax™ recommends customers confirm products remain suitable for the intended application.

**Safety and handling**

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

**SAFETY & WARNING**

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use.

Safety Data Sheets are available.

**WASTE TREATMENT**

Prior to using any recommendations or suggestions for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedence.

**CONTACT INFORMATION**

[www.macdermidalpha.com](http://www.macdermidalpha.com)

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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