

# AP 110

## No Clean SOLDER PASTE Halide FREE



Created : 27/07/2022 Updated : Index : 01



### DESCRIPTION

**AP 110** no-clean solder paste is carefully formulated in MBO laboratories to confer high activity soldering and yet, leaves very low, clear, benign residues.  
This product, suitable for screen printing, meets the international requirements of the electronics industry.

- **ROLO regarding standard J-STD-004**
- Halide free.
- High activity.
- Low and safe residues.
- Fast print capabilities (up to 80mm/s).
- Long abandon time (8 hours).
- Long stencil life (8 hours).
- « Fine pitch » (400µm) and « ultra-fine pitch » (<300µm) capabilities.
- Available powder sizes : type 3, 4 and 5. Other : consult us.

No clean **AP 110** solder paste is manufactured in strict compliance with the international standards.

**AP 110** solder paste is suitable for "Pin in Paste" applications.

### AVAILABLE ALLOYS

| <i>Alloy</i>              | <i>Alloy Number<br/>ISO 9453 (2014)</i> | <i>Melting point (°C)</i> | <i>Metal content (%)</i> | <i>Viscosity (Pas)<br/>Malcom 10 rpm</i> |
|---------------------------|---|---------------------------|--------------------------|--|
| <b>Sn62Pb36Ag2</b>        | 171                                     | 179                       | 89-90                    | 140 - 220                                |
| <b>Sn63Pb37</b>           | 101                                     | 183                       | 89-90                    | 145 - 225                                |
| <b>Other : consult us</b> |   |                           |                          |  |



### TECHNICAL DATA

| Category                                 | Standard                             | Results   |
|--|--------------------------------------|---|
| Activity Level (classification)          | IPC J-STD-004                        | <b>ROL0</b>   |
| Halide Content                           | IPC J-STD-004                        | <b>Halide free (by titration)</b>                   |
| Copper Mirror                            | IPC-TM-650 (2.3.32) /J-STD-004       | <b>Pass</b> (no evidence of corrosion)              |
| Silver Chromate                          | IPC-TM-650 (2.3.33)                  | <b>Pass</b>   |
| Surface Insulation Resistance Test (SIR) | GR 78 Core Section 13, 13.1.3        | <b>Pass, <math>1 \times 10^{12}</math> ohms</b>     |
| Electromigration Resistance Testing      | GR-78-Core Section 13.1.4            | <b>Pass, <math>&gt;1 \times 10^{10}</math> ohms</b> |
| Visual aspect of residues                | IPC-HDBK-005                         | <b>Clear</b>  |
| Viscosity                                | Malcom spiral viscometer (J-STD-005) | <b>150 Pa.s (Sn62Pb36Ag2-90-4)</b>                  |
| Solder ball test                         | IPC J-STD-005                        | <b>Acceptable</b>                                   |

### PRINTING

**Solder Paste use:** When the solder paste is at room temperature (approximately 4 hours after the release of the fridge), manually stir it vigorously with a spatula for about thirty seconds before deposit it on the printing screen for a proper activation.

**To avoid waiting for the solder paste warm-up**, an automatic mixer dedicated to the solder paste can be used right out of the fridge. In this case, the increase of the temperature and stirring of the solder paste are performed simultaneously.

For any reuse of solder paste, a new activation of it is necessary.

#### Stencil

Stainless steel, brass or nickel. Chemical cut, laser cut or electroformed.

#### Squeegee

Stainless steel (recommended) or 80-100 durometer polyurethane.

#### Print speed

30-120 mm/s. Best results: 40 to 80 mm/s.

#### Squeegee pressure

0.15-0.3 Kg/cm of squeegee length

#### Snap-off

0 to 0.25mm. On contact printing is preferred.

#### Ambient conditions

20-30°C and 35% to 70% RH. Minimize exposure of solder paste direct to air flow.

Created : 27/07/2022 Updated : Index : 01



### REFLOW

#### Heating Methods

Convection, infrared, vapour phase, hot plate, hot bar, laser and others. Aerobic or inerted.

#### Heating Profile

See suggested reflow profile.

#### Cleaning Equipment

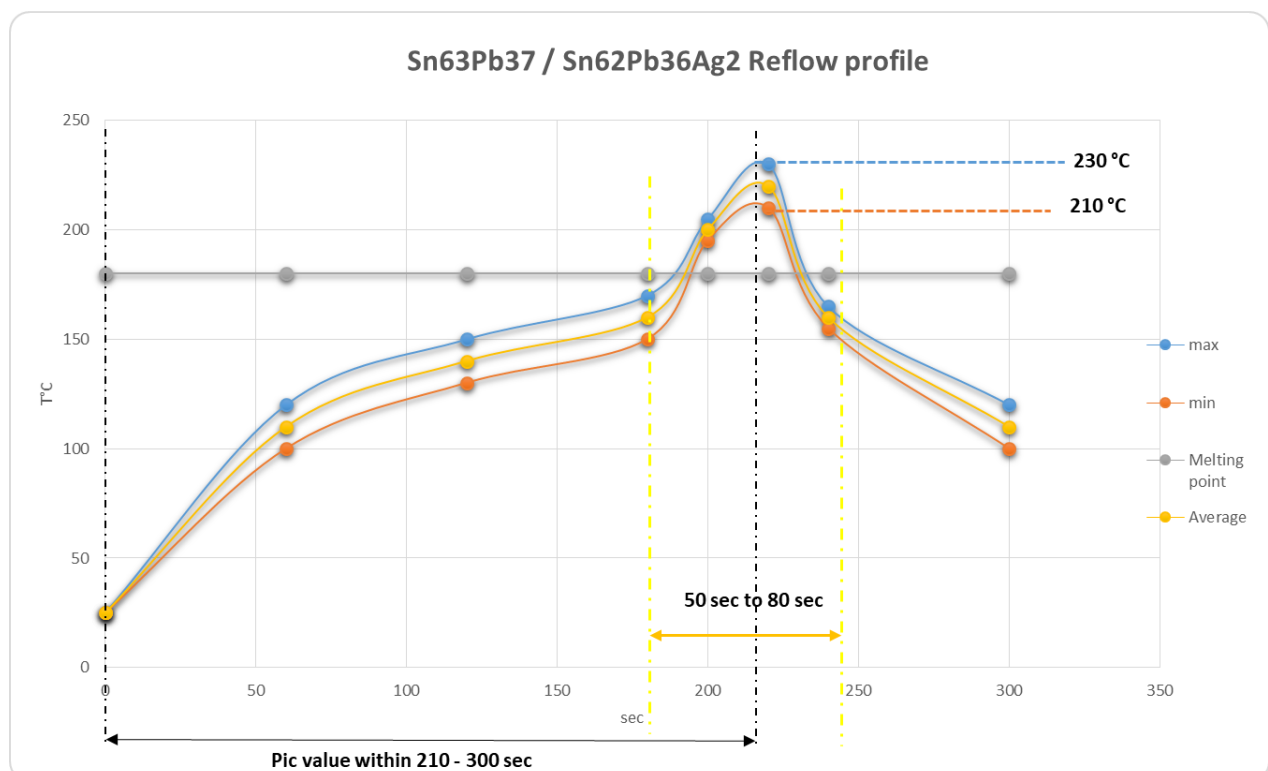
Spray, immersion, vapour degreaser or scrubber.

#### Cleaning solvents

Most stencil cleaners, stencil wipes and saponifiers. Although this product is no-clean , if a cleaning card is required, the use of **ZESTRON products (VIGON A200, A201, N600 ...)** gives excellent results and is especially recommended .

**Temperature** : 35-60°C.

**Spray Pressure** : 20 to 40 psi.

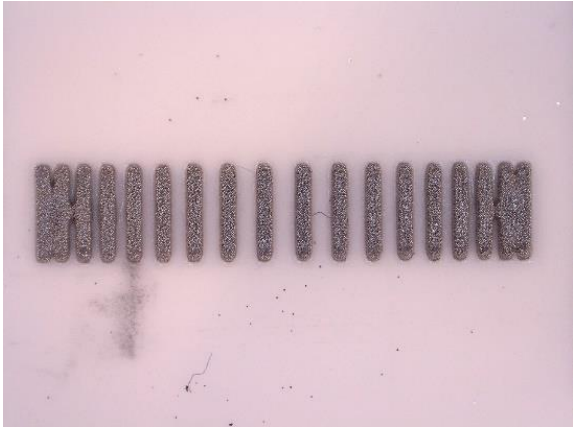
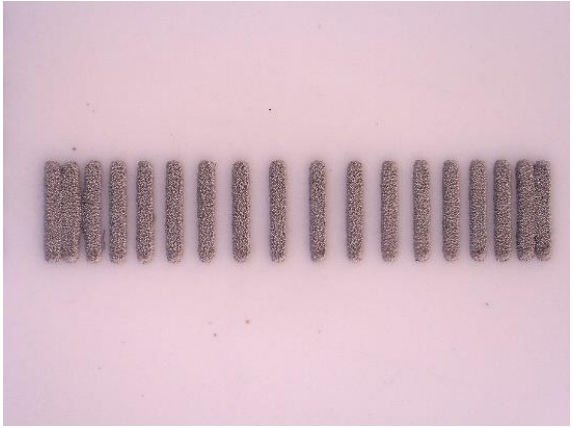


Created : 27/07/2022 Updated : Index : 01



### STANDARD TESTS

#### COLD / HOT SLUMP

|  |  |
|--|--|
| <p>IPC TM 650 2.4.35<br/>(A-21 = 0.2 mm<br/>thick 25 °C)</p> | <p><b>0.15 mm</b></p>             |
| <p>IPC TM 650 2.4.35<br/>(A-21 = 0.2 mm<br/>thick 150°C)</p> | <p><b>0.10 mm – 0.15 mm</b></p>  |

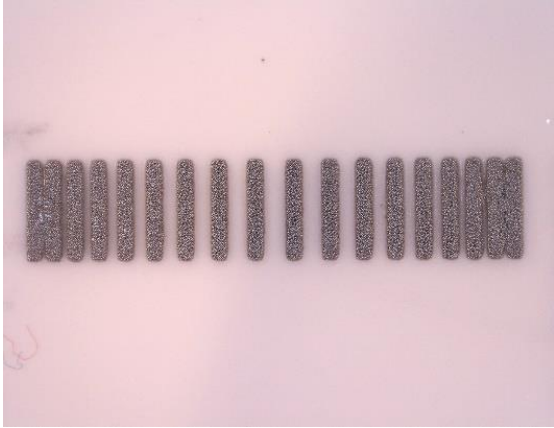
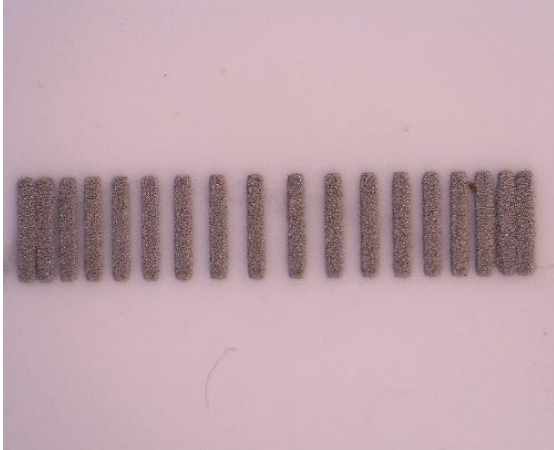
# AP 110

## No Clean SOLDER PASTE Halide FREE



Created : 27/07/2022 Updated : Index : 01






|  |   |
|--|---|
| <p>IPC TM 650 2.4.35<br/>(A-21 = 0.1 mm<br/>thick 25 °C)</p> | <p><b>0.10 mm – 0.15 mm</b></p>  |
| <p>IPC TM 650 2.4.35<br/>(A-21 = 0.1 mm<br/>thick 150°C)</p> | <p><b>0.15 mm</b></p>           |

Created : 27/07/2022 Updated : Index : 01




### SOLDER BALL TEST

|                   |  |
|-------------------|--|
| IPC TM 650 2.4.43 | <p><b>Acceptable</b></p> <p><b>t = 0 h</b></p>  <p><b>t = 2 h</b></p>  <p><b>t = 4 h</b></p>  |
|-------------------|--|



### WETTING TEST

|                   |   |
|-------------------|---|
| IPC TM 650 2.4.45 | <b>Very good</b><br> |
|-------------------|---|

### STORAGE AND PACKAGING

**Packaging:** jars of 250g, 500g - cartridges of 500, 700 and 1000 g - others on request.

**Storage:** Must be stored between 5 and 10°C for up to 12 months. In that case, wait until the jar has reached the ambient temperature before opening to avoid water condensation on the surface of the paste. Once opened, do not return to the fridge if all the jar is consumed in 5 days. Can stay up to one week at ambient temperature.

#### **Additional information:**

Our manufacturing processes have been subjected to FMECA analysis (equivalent of AMDEC in France).

We cannot anticipate any and all conditions and situations under which the information and our products or the combination of both with others will be used. We do not assume any liability in the safety and suitability of our products alone or in combination with others. Users must make their own tests to determine the safety and suitability of each product used alone or with other products for their own use. Except any previous written agreement, our products are sold without guarantee and customers must assume all liability for any loss or damage suffered by themselves or by third parties, either from handling or use of our products alone or with others. In case of any difference or variation seen during the use of the products we request that you contact our technical department.