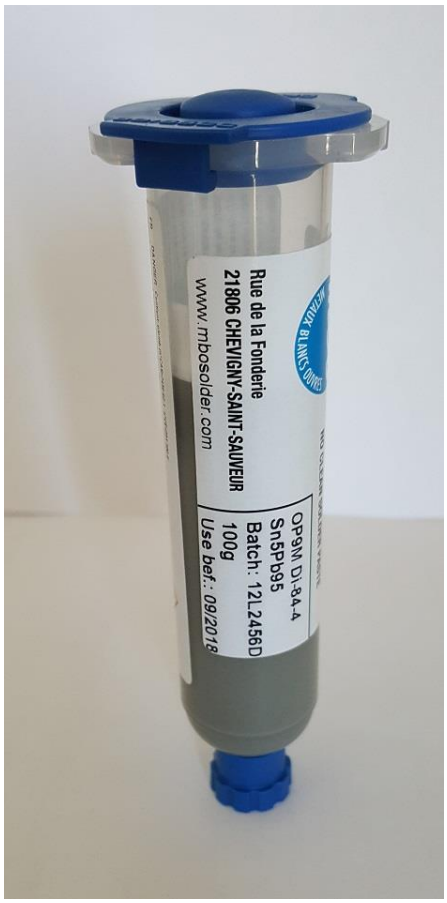
# DIE ATTACH process
# No Clean SOLDER PASTE
# ORGANIC type

Created : 02/05/2017 Updated : 03/06/2021 Index : 07

## DESCRIPTION

## Major advantages of the MBO DIE ATTACH solder paste :

- **Very good behaviour in dispensing**
- **No clean and halogen free formulated**
- **Extra clear and colourless residues**
- **Low voiding for long term reliability solder joint**





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# OP9 M Di

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Organic No Clean **OP9 M Di** solder paste has been developed in the MBO laboratories. It is specially designed to offer a high level of activity while leaving very low residues, very clear and non-corrosive. This product, suitable for dispensing, meets the international requirements of the electronics industry.

- **ORL0** classification according to J-STD-004
- Halide free.
- REACH compliant
- High activity.
- Very low residues, neutral and colorless.

Organic No Clean **OP9 M Di** solder paste is manufactured in strict compliance with current international standards.

## AVAILABLE ALLOYS

| *Alloy* | *Alloy Number ISO 9453 (2014)* | *Melting point (°C)* | *Metal content (%)* | *Viscosity (Pas) Brookfield 20°C 5 rpm* |
|---|---|---|---|---|
| **Sn5Pb92.5Ag2.5** | NA | 296-301 | 84 | 260 |
| **Sn5Pb95** | 123 | 300-314 | 84 - 85 | 220 |

**Other : consult us**

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## TECHNICAL DATA

| Category | Standard | Results |
|---|---|---|
| Activity Level (classification) | IPC J-STD-004 | **ORL0** |
| Halide Content | IPC J-STD-004 | **Halide free (by titration)** |
| Copper Mirror | IPC-TM-650 (2.3.32) /J-STD-004 | **Pass** (no evidence of corrosion) |
| Silver Chromate | IPC-TM-650 (2.3.33) | **Pass** |
| Surface Insulation Resistance Test (SIR) | GR 78 Core Section 13, 13.1.3.2 | **Pass,** |
| Visual aspect of residues | IPC-HDBK-005 | **Clear** |
| Viscosity | Brookfield viscometer (20°C – 5 rpm) | **260 Pa.s (Sn5Pb92.5Ag2.5-3)** |
| Solder ball test | IPC TM 650 2.4.43 | **Pass** |
| Solder wetting test | IPC TM 650 2.4.45 | **Pass** |

## DISPENSING

**OP9 M Di** solder paste is suitable for all dispensing machines equipped with needles up to 0.41 mm in diameter (class 5 metal powder).

**Packaging**: 5 cc, 10 cc, 30 cc syringes. Other on request.

**Ambient conditions**
18-22°C and 35% to 70% RH.

**Cleaning of tools :**
Most standard cleaning products.

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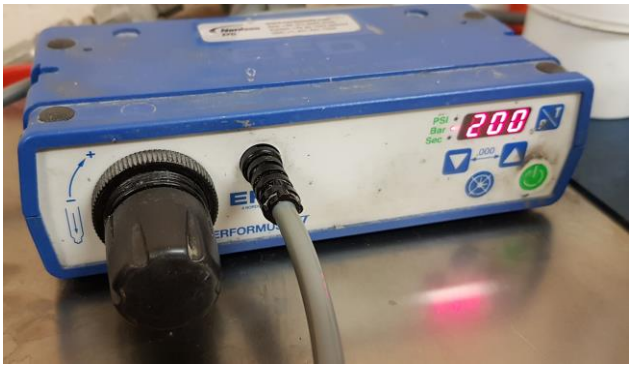
DISPENSING CONSISTENCY:



Needle used : **blue one (0.41 mm inner diameter)**

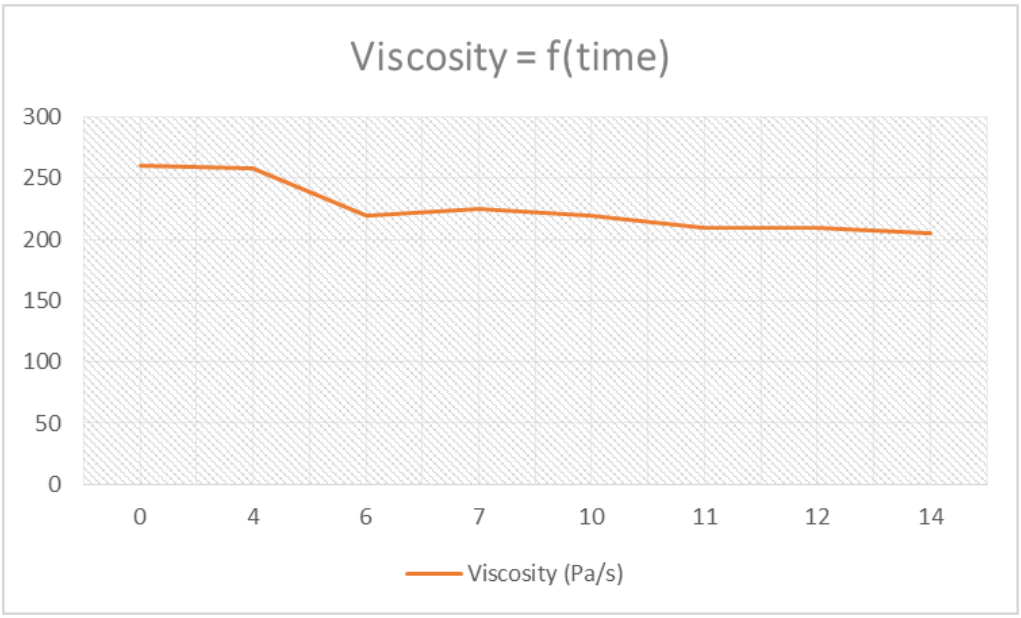
Temperature of the trial : **20 °C**

Number of dots deposited : **50**.

Equipment used : **Nordson EFD Performus II**

| | | **Solder paste weight (g)** |
|---|---|---|
| Deposit time = 20 ms<br>Pressure = 2 bars | Syringe start | 0.015 |
| | Middle of the Syringe | 0.015 |
| | End of the Syringe | 0.015 |
| Deposit time = 0.1 s<br>Pressure = 1 bar | Syringe start | 0.021 |
| | Middle of the Syringe | 0.021 |
| | End of the Syringe | 0.021 |

VISCOSITY (Pa/s) IN TIME (days) :

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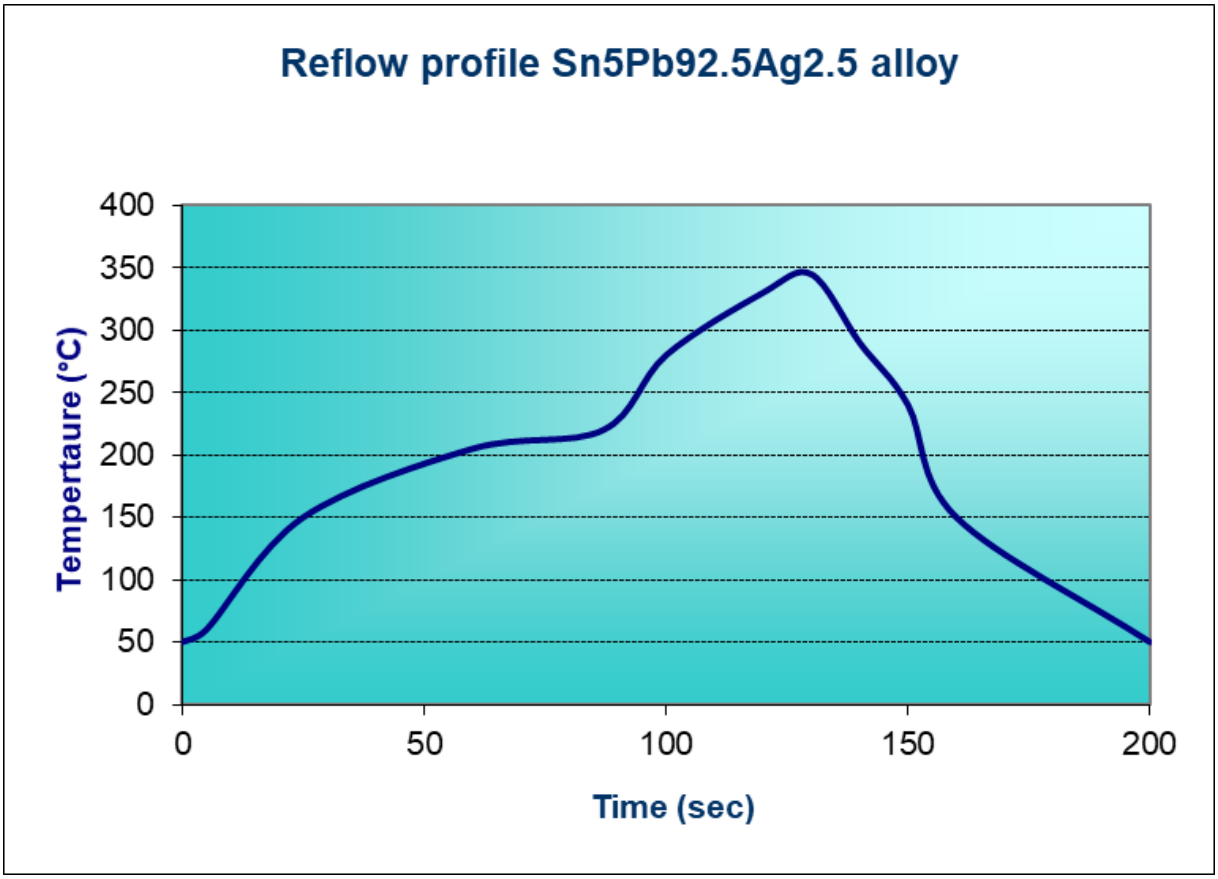
## REFLOW

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

**Heating Profile**
See suggested reflow profile.

**Cleaning solvents**
Most cleaners.

**Temperature :** 35-60°C.

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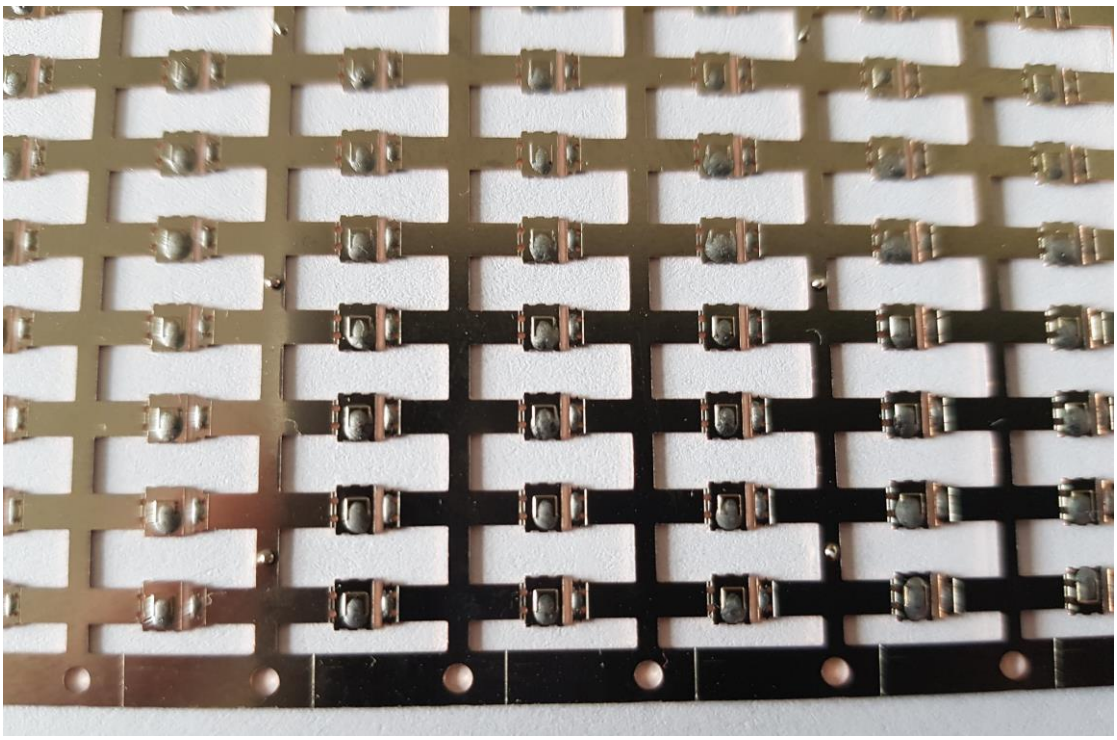
## SOLDER BALL TEST

## PARTS AFTER REFLOW



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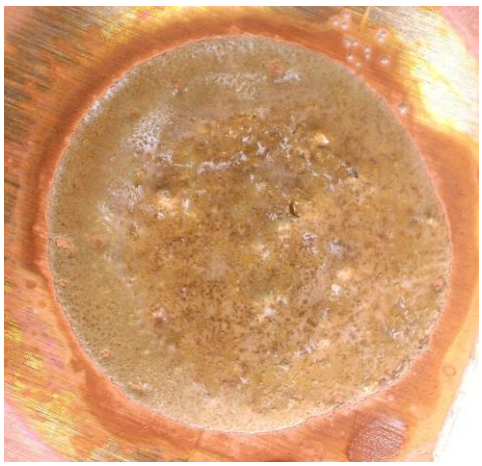
## RESIDUES CLEANING

**CLEANING IS ONLY POSSIBLE WITH IPA (WATER IS NOT SUITABLE).**

| BEFORE CLEANING AFTER REFLOW : | AFTER CLEANING<br>**CLEANING WITH IPA IN ULTRASONIC EQUIPMENT FOR 15 MINUTES.** |
|---|---|
|  |  |

## STORAGE

**Storage:** In original packaging, between 5 and 10 ° C, for up to 6 months. Wait until the syringes are at room temperature before use to avoid condensation on the paste. Storage at room temperature: 5 days maximum.

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



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