

SP 300

SOLDER PASTE NO-CLEAN "LEAD FREE"



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DESCRIPTION

SP 300 no-clean solder paste has been developed in MBO laboratories. It is designed to offer a high level of activity by leaving low residues, clear and non-corrosive. This product, suitable for printing applications meets the international requirements of the electronics industry.

- **ROLO classification (J-STD-004)**
- Halide free.
- **RoHS compliant.**
- High activity.
- Low and neutral residues.
- Fast print capabilities (up to 100 mm/s). Best results between 40 to 80 mm/s.
- Long abandon time (8 hours).
- Long stencil-life (8 hours).
- Fine-pitch (400µm) and ultra-fine pitch (<300µm) capabilities.
- Type 3 to type 5 available. Other on request.

SP 300 no-clean solder paste is manufactured in compliance with the international standards.

SP 300 solder paste is suitable for "**Pin in Paste**" applications.

AVAILABLE ALLOYS

Alloy	Alloy number ISO 9453 (2014)	Melting Point (°C)	Metal content (%)	Viscosity (Pas) Malcom 10 rpm
Sn96.5Ag3.5	703	221	88 - 89	215 +- 20
Sn96.5Ag3 Cu0.5	711	217/220	88 - 89	210 +- 20
Sn95.5Ag3.8Cu0.7	713	217	88 - 89	215 +- 20
Sn99Ag0.3Cu0.7	501	217/227	88 - 89	210 +- 20
Sn99CuSP	401	227	88 - 89	210 +- 20
Other : consult us				

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TECHNICAL DATA

Category	Standard	Results
Activity Level (classification)	IPC J-STD-004	ROL0
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, 1×10^{12} ohms
Electromigration Resistance Testing	GR-78-Core Section 13.1.4	Pass, $>1 \times 10^{10}$ ohms
Visual aspect of residues	IPC-HDBK-005	Clear
Viscosity	Malcom spiral viscometer (J-STD-005)	210 Pa.s (SAC 0307-3)
Solder ball test	IPC J-STD-005	Acceptable

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. **Recommended settings: 3 minutes at 1000 rpm and 2 minutes at 500 rpm.**

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

30-100 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

20-26°C and 35% to 70% RH. Minimize exposure of solder paste direct to air flow.

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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 Equipment

Spray, immersion, vapour degreaser or scrubber.

Cleaning solvents

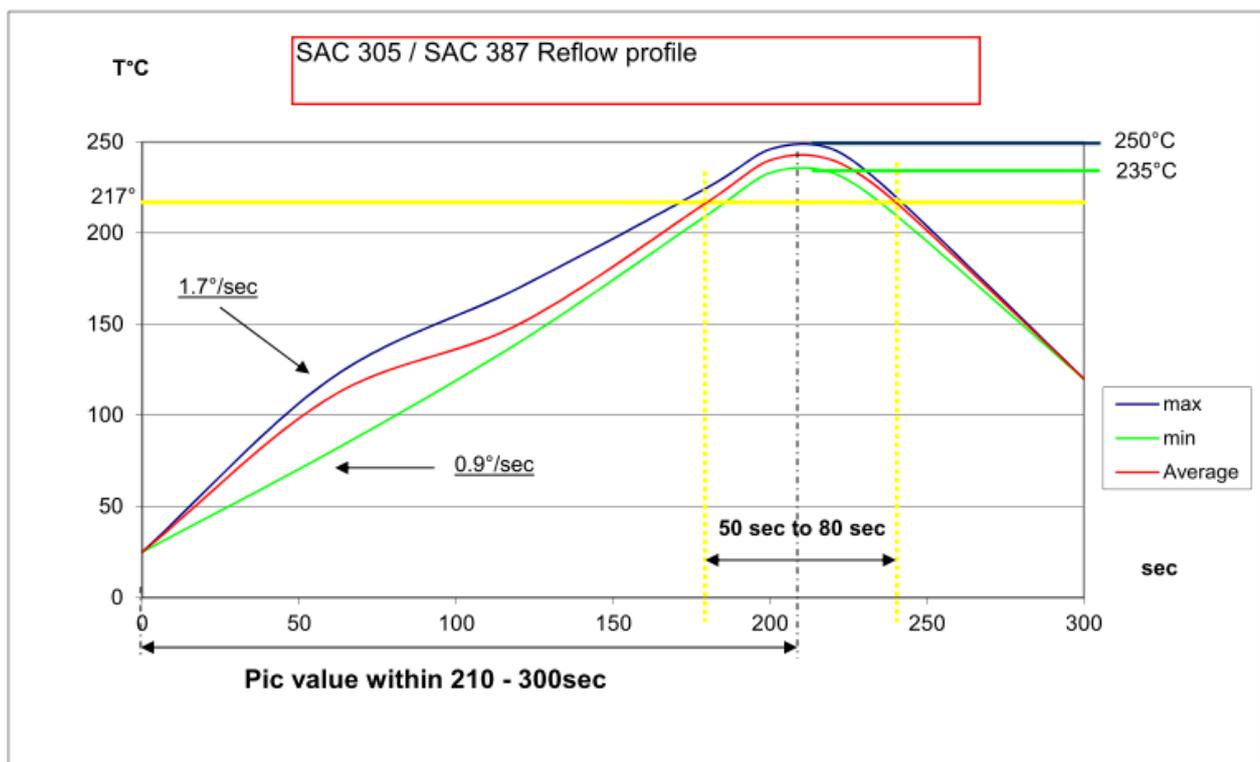
Most stencil cleaners, stencil wipes and saponifiers. Although this product is no-clean, if a cleaning card is required, the use of **ZESTRON products** gives excellent results and is especially recommended.

Temperature

35-60°C.

Spray Pressure

20 to 40 psi.



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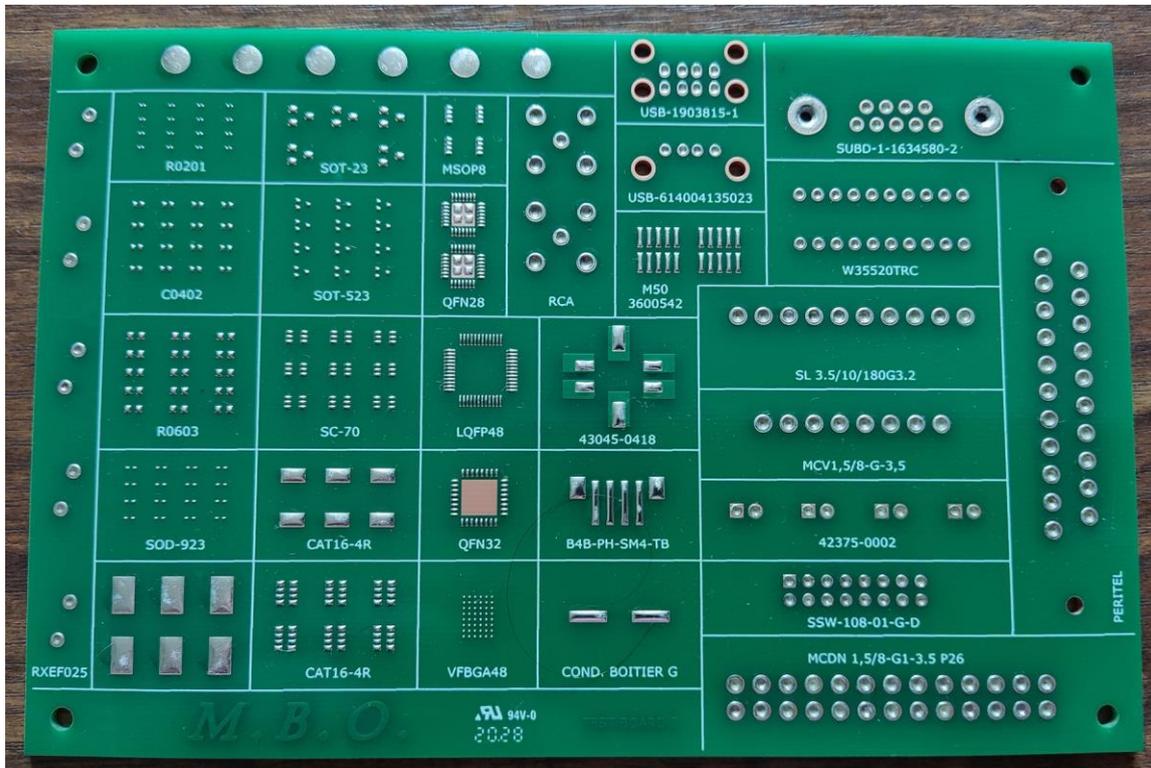


STORAGE AND PACKAGING

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

Storage: in original container between 5 and 10°C for up to 12 months. Wait until the pot 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 emptied in 3 days.

REFLOW



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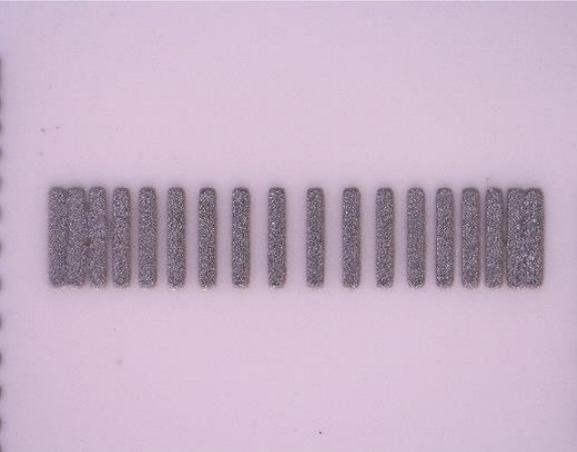
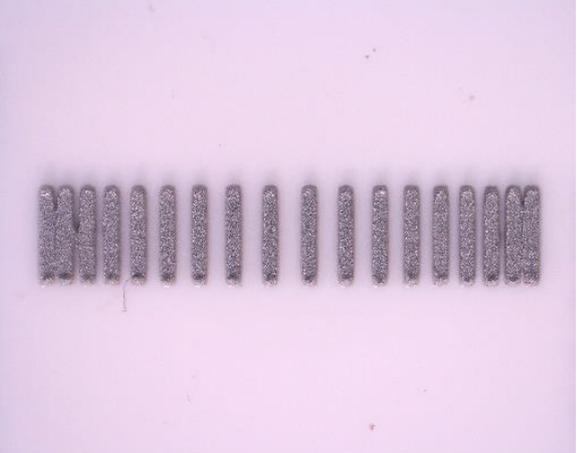
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COLD / HOT SLUMP :

<p>IPC TM 650 2.4.35 (A-20 = 0.1 mm thick 25 °C)</p>	<p>0.15 mm</p> 
<p>IPC TM 650 2.4.35 (A-21 = 0.2 mm thick 25 °C)</p>	<p>0.10 mm / 0.15 mm</p> 

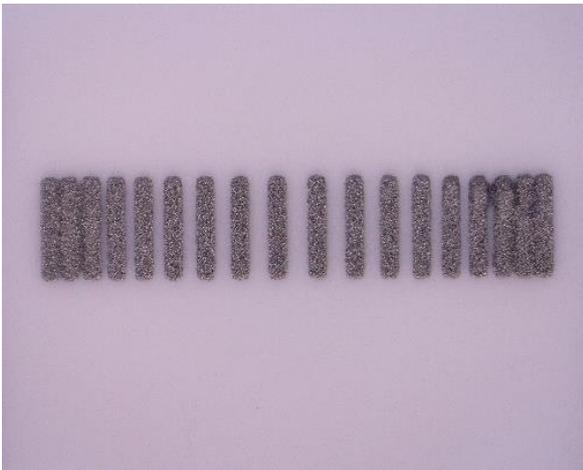
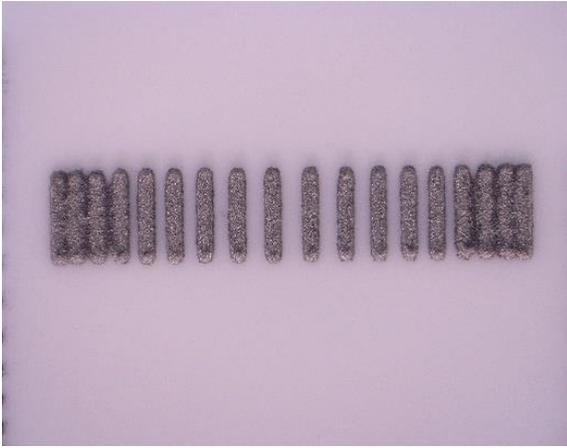
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<p>IPC TM 650 2.4.35 (A-20 = 0.1 mm thick 150 °C)</p>	<p>0.15 mm</p> 
<p>IPC TM 650 2.4.35 (A-21 = 0.2 mm thick 150 °C)</p>	<p>0.20 mm</p> 

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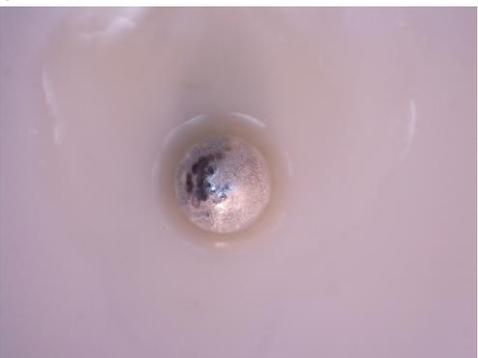
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SOLDER BALL TEST :

IPC TM 650 2.4.43	<p>Acceptable</p> <p>t = 0 h</p>  <p>t = 2 h</p>  <p>t = 4 h</p> 
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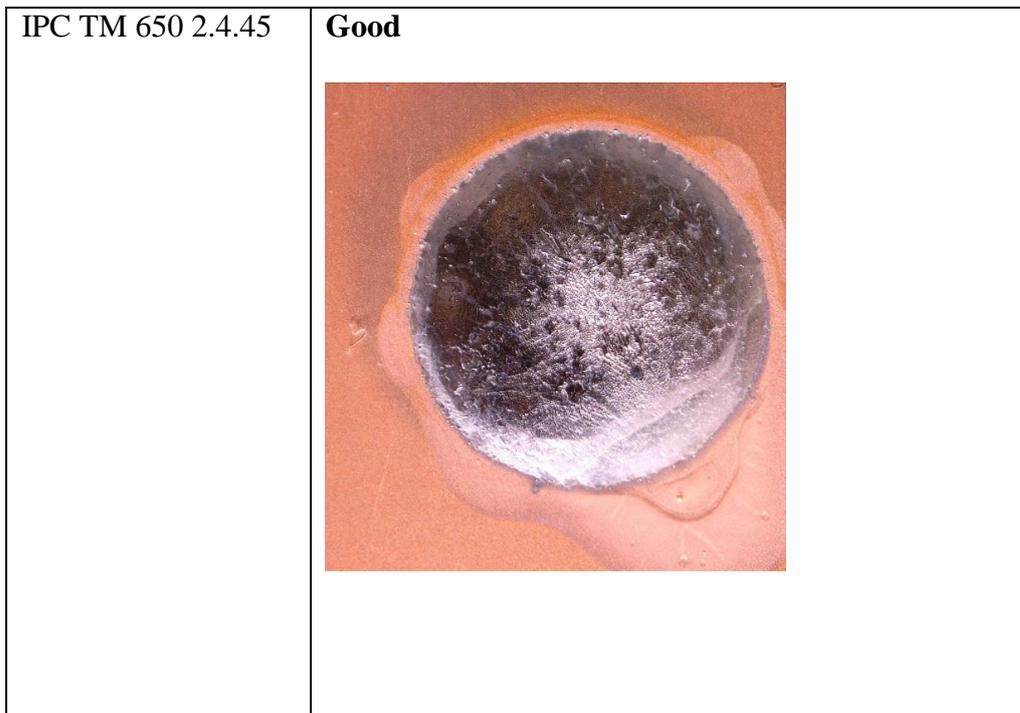
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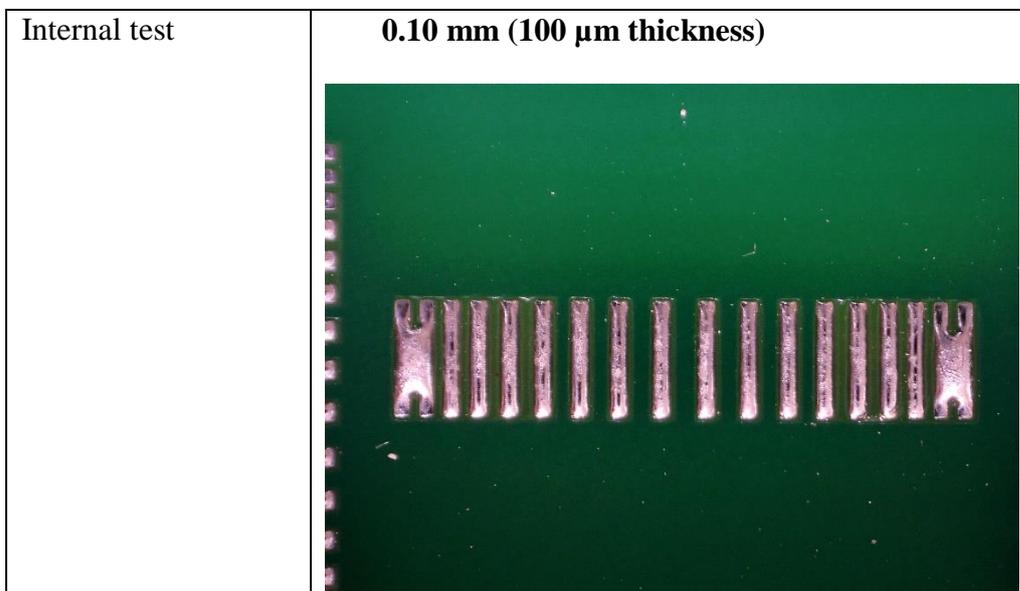
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WETTING TEST



BRIDGE TEST:

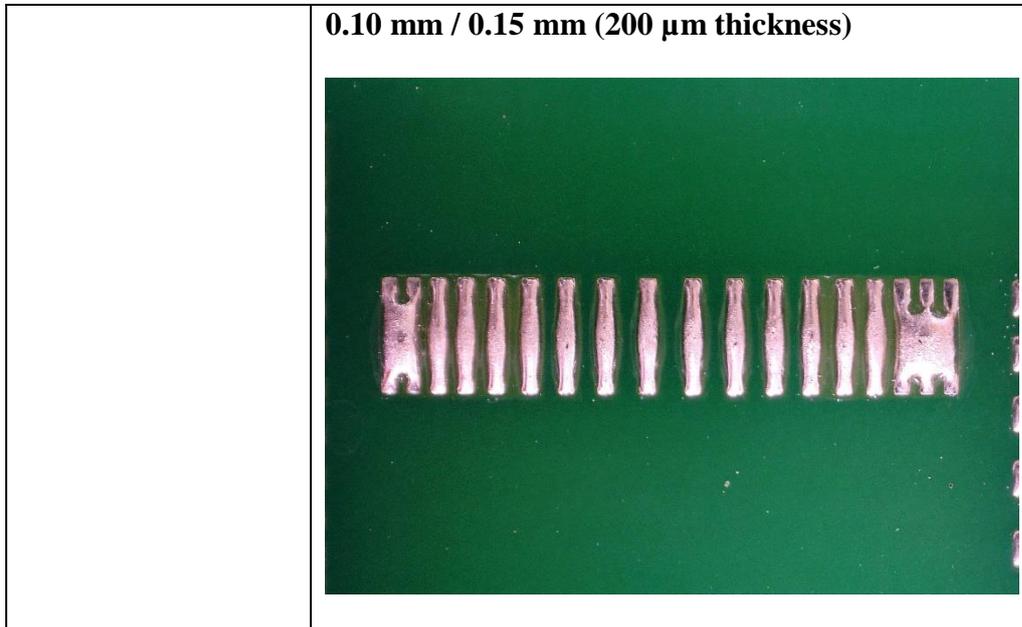


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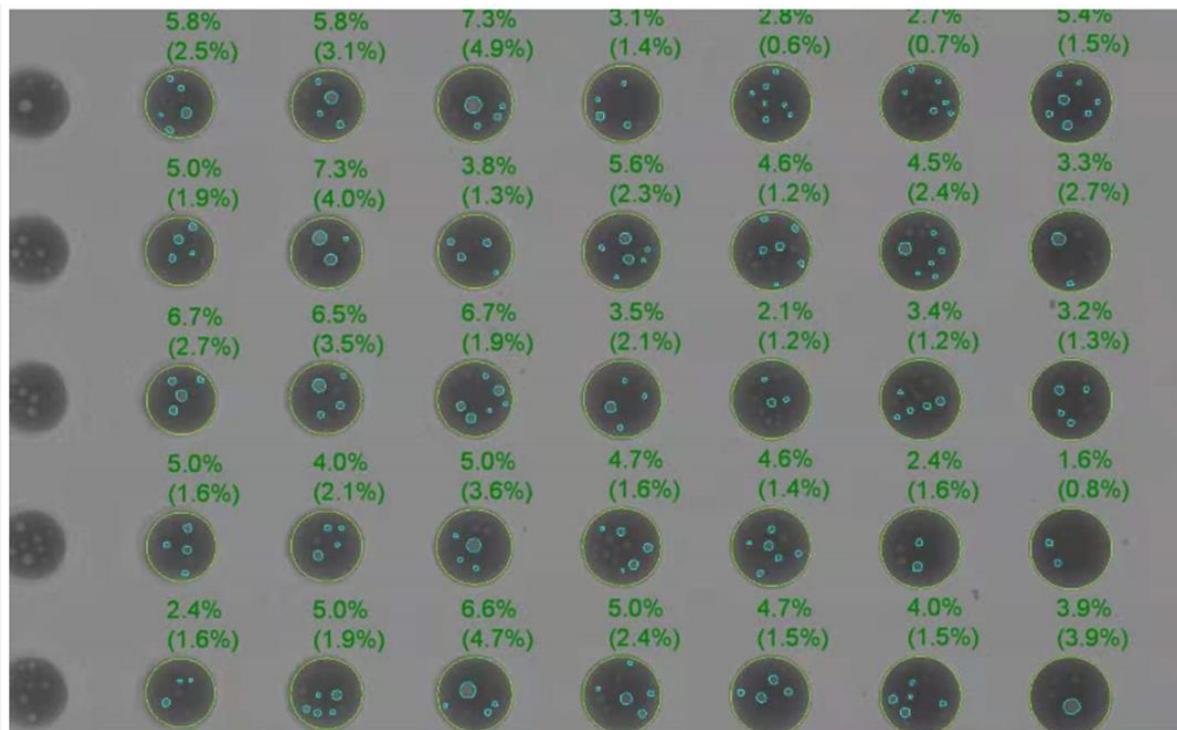
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VOIDS results (SAC 305 – 4) :

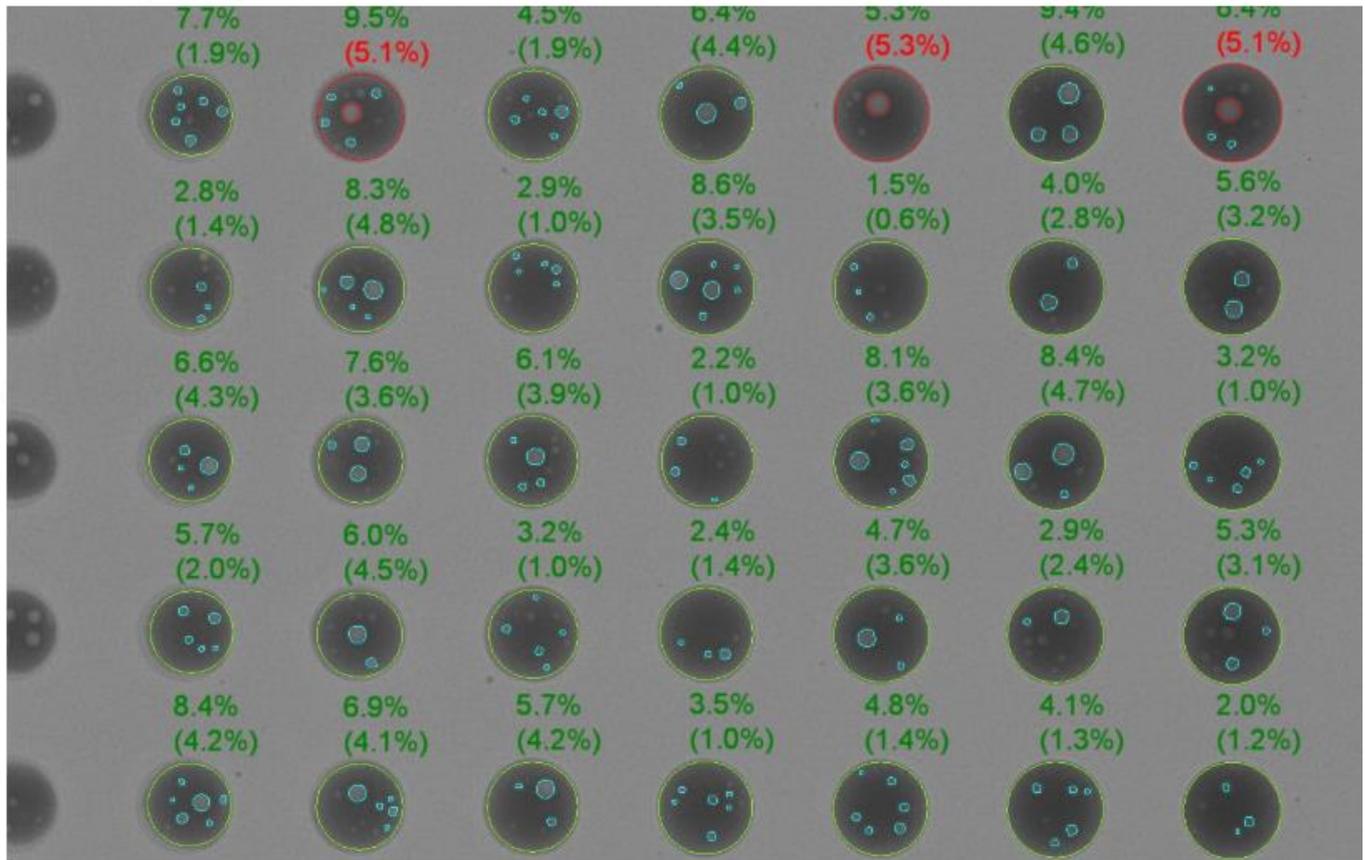


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Additional information:

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.