

PRODUCT DATA SHEET

PicoShot® WS-5M

Jetting Solder Paste

Introduction

Indium Corporation's **PicoShot® WS-5M** jetting solder paste is a water-soluble, halogen-free material specifically formulated to be compatible with Mycronic jetting systems. Inherently chemically compatible with Indium6.6HF solder paste, **PicoShot® WS-5M** is optimized for long-term and consistent jetting. **PicoShot® WS-5M** provides exceptional jetting performance, and its unique oxidation barrier promotes complete powder coalescence during reflow to eliminate graping and similar reflow issues.

Features

- Developed in association with Mycronic for its MY-Series jetting systems
- Exceptional jetting performance
 - Capable of the smallest dot volume among pastes in its class: 6.5nl/dot, 350µm diameter
 - Precision deposit (x, y) targeting
 - Long usage (syringe) life >8 hours
 - Minimal satellites
- Unique flux oxidation barrier promotes complete powder coalescence during reflow
 - Minimizes graping
- Flux residue easily cleanable with DI water
- Reduces head-in-pillow (HIP) defects

Jetting Settings

- Optimized for MY600 and MY700 systems
- Ejector type:
 - AG04 (atmospheric pressure)
 - AG01 (above 1,000m elevation)
- Cassette model for this paste is activated by a barcode on the paste syringe

Storage and Handling Procedures

Storage between -20°C and 0°C is recommended and will prolong the shelf life of solder paste. Solder paste packaged in syringes should be stored tip down. Solder paste should be allowed to reach ambient working temperature prior to use. Generally, paste should be removed from freezer at least 3 hours before use. Actual time to reach thermal equilibrium will vary with syringe size and ambient conditions, such as local air flow. Paste temperature should be verified before use. Do not use if thawed paste has been left at room temperature for more than 24 hours. Do not refrigerate, although unused paste in syringe can be refrozen at <0°C up to four times.

Storage Conditions (unopened syringes)	Shelf Life
-20°C–0°C	6 months

Standard Product Specifications

Industry Standard Test Results and Classification			
Flux Classification	ORH0	Typical Solder Paste Viscosity (Malcom) for SnPb T5 (Poise)	715
Based on the testing required by IPC J-STD-004A		Conforms with all requirements from IPC J-STD-005A	
Halogen-free per IEC 61249-2-21, Test Method EN14582	<900ppm Cl <900ppm Br <1,500ppm Total		

All information is for reference only.

Not to be used as incoming product specifications.

From One Engineer To Another®



Form No. 99870 R4

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Cleaning

PicoShot® WS-5M residues are water-soluble and best removed by an inline or batch-type cleaning process using spray pressure and heated DI water. A spray pressure of 60psi and a DI water temperature of 55°C can be used as a starting point. The optimal spray pressure and temperature are a function of board size, complexity, and the efficiency of the cleaning equipment, and should be optimized accordingly. For gaps less than approximately 50µm (2mil), the addition of an appropriate surfactant in the water washing tank will lower the surface tension of the water to allow for faster penetration of the cleaning medium and improve cleaning effectiveness. We recommend cleaning the flux residue within 12 hours after reflow for optimal test performance. Electrical testing should be completed after the flux residue is removed.

Complementary Products

- **Equipment Conditioner:** PicoShot® Conditioner C-1
- **Solder Paste:** Indium6.6HF
- **Rework Flux:** TACFlux® 066HF
- **Flux Pen:** FP-300
- **Cored Wire:** CW-301
- **Wave Flux:** 1095-NF

Technical Support

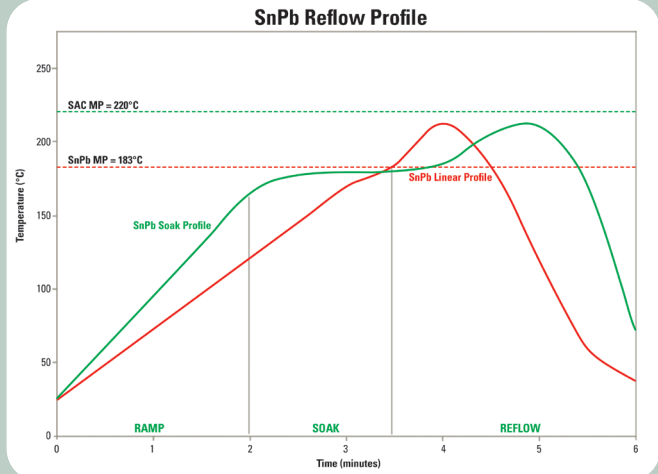
Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder properties, alloy compatibility and selection of solder preforms, wire, ribbon, and paste. Indium Corporation's Technical Support Engineers provide rapid response to all technical inquiries.

Safety Data Sheets

Please refer to the SDS document within the product shipment, or contact our local team to receive a copy.

Reflow

Recommended Profile:



Standard ramp-to-spike (linear) profile is preferred.

- Preheat ramp rate
 - 1.8–2.2°C/second is typical
- Time above liquidus
 - 30–40 seconds
- Ambient to peak
 - 2–3 minutes
- Atmosphere
 - Designed for air reflow
 - Nitrogen (<200ppm O₂) may be used to enhance wettability onto challenging surfaces, but will generally not be needed

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified.
Indium Corporation is an ISO 9001:2015 registered company.

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