PRODUCT DATA SHEET

Indium6.91 High-Temperature

Water-Soluble Solder Paste

Introduction

Indium6.91 High-Temperature Water-Soluble Solder Paste is a halogen-free (per IEC 61249-2-21), water-soluble solder paste formulated for use with high-temperature alloys. This product was designed to eliminate the cost of cleaning with expensive and environmentally undesirable chemicals. After reflow at temperatures up to 380°C in nitrogen, no ionic contamination remains after cleaning with deionized water.

Features

- Formulated for high-temperature alloys, especially high-lead (Pb)
- Superior humidity resistance
- Excellent wetting in air or nitrogen
- Water-soluble residue
- Consistent fine-pitch printing
- Halogen-free per IEC 61249-2-21
- Nitrogen or forming gas reflow

Alloys

Indium Corporation manufactures low-oxide spherical powder composed of PbSn, Pb SnAg, and many other alloys covering a wide temperature range. Typical metal loads range from 84–92% for standard alloy compositions. The actual metal % is application-dependent and varies with alloy density. Solder powder is available in classifications per ANSI/J-STD-005 for printing and dispensing applications. Please call us for information on other mesh sizes and alloys.

Typical Viscosities				
Indalloy®#	Composition	Type	ML%	Viscosity*
228	88Pb/10Sn/2Ag	3	76	150kcps

* Derived from ANSI/IPC J-STD-005A - Brookfield T-Bar Viscosity

Standard Product Specifications

Nominal Range

Solder Paste Diameter	
Type*	Microns
3	25–45
4	20–38
5	15–25
6-SG	5–15

* Derived from ANSI/IPC J-STD-005A

Compatible Products

- Rework Flux: TACFlux®091

Packaging

Indium6.91 is available in jars or cartridges, or airlessly packaged in syringes (10cc or 30cc).

Storage and Handling Procedures

Refrigerated storage will prolong the shelf life of solder paste. Solder paste packaged in cartridges or syringes should be stored tip down.

Storage Conditions (unopened containers)	Shelf Life
<10°C	3 months
<-25°C	6 months

Solder paste should be allowed to reach ambient working temperature prior to use. Generally, paste should be removed from refrigeration at least 2 hours before use. Actual time to reach thermal equilibrium will vary with container size. Paste temperature should be verified before use. Containers should be labeled with date and time of opening.

Industry Standard Test Results and Classification		
Flux Classification	ORM0	
Based on the testing required by IPC J-standard-004B.		Conforms with requirements from ANSI/IPC J-STD-005A except slump, which varies with metal load and is not a key parameter for most applications for **Indium6.91**.
Halogen-free per IEC 61249-2-21, Test Method EN14582	<900 ppm Cl <900 ppm Br <1,500 ppm Total	

All information is for reference only. Not to be used as incoming product specifications.

Cleaning

The residue is easily cleaned with only water at 40–60psi and 40–55°C. These parameters may be adjusted to optimize the process.

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Reflow

Recommended Profile:

For Nitrogen (0_2<100ppm) Reflow:

This profile is for use with Indalloy®151 (92.5Pb/5Sn/2.5Ag) and Indalloy®163 (95.5Pb/2Sn/2.5Ag) alloys and will serve as a general guideline in establishing a reflow profile for your process. Adjustments will be necessary for use with other alloys. Various board geometries, densities, and oven types may require further profile adjustments.

The typical reflow profile encompasses:

- Preheat: 1 to 2°C/second rate of rise
- Reflow: Peak temperature should be 30 to 80°C above the liquidus of the alloy for 30 to 60 seconds
- Cool down: -5 to -10°C/second to solidus

Contact our engineers today: askus@indium.com
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