

Product Data Sheet

WMA-SMQ® 69HT High Temperature Water-Soluble Solder Paste

Benefits

- Formulated for high temperature alloys
- Superior humidity and slump resistance
- Excellent wetting reflow in air or nitrogen
- Water-soluble residue
- Consistent fine pitch printing
- Halide-free

Introduction

WMA-SMQ® 69HT is a halide-free, water-soluble solder paste formulated for use with high temperature alloys. This product was designed to have superior humidity and slump resistance. After reflow at temperatures up to 350°C in air or nitrogen, no ionic contamination remains after cleaning with plain water. WMA-SMQ® 69HT meets ANSI/J-STD-004 and 005 specifications as well as Bellcore criteria.

Alloys

Indium Corporation manufactures low-oxide spherical powder composed of Sn/Pb, Sn/Pb/Ag, and many other alloys covering a wide temperature range. Typical metal loads range from 85%-90% for standard alloy compositions. The actual metal % is application dependent and varies with alloy density. Solder powder is available in Type 1 thru 4 classifications per ANSI/J-STD-005 for printing and dispensing applications. Please call us for information on other mesh sizes and alloys.

Solder Powder Diameter

Type	Pitch	Mesh Size	Microns	Inches
1	STD	-100/+200	75-150	.0029-.0059
2	STD	-200/+325	45-75	.0017-.0029
3	Fine	-325/+500	25-45	.0010-.0017
4	Ultra-Fine	-400/+635*	20-38	.0008-.0015

*-400/+500 also available

Storage and Handling Procedures

WMA-SMQ69HT has a shelf life of 6 months when stored at <5°C. Solder paste should be allowed to reach ambient working temperature prior to use. Actual time to reach thermal equilibrium will vary with container size. In order to maximize the opened-jar paste performance, the paste should be covered when not in use.

Material Safety Data Sheets

The MSDS for this product can be found online at <http://www.indium.com/techlibrary/msds.php>

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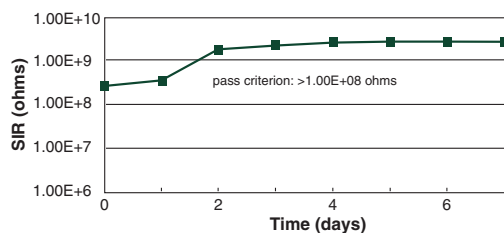
BELLCORE AND J-STD TESTS & RESULTS

Test	Result	Test	Result
J-STD-004 (IPC-TM-650)		J-STD-005 (IPC-TM-650)	
• Flux Type Classification	MO	• Typical Solder Paste Viscosity (Sn10, 92%, Type 3) Brookfield (5 rpm) Malcom	1150 kcps 2200 poise
• Flux Induced Corrosion (Copper Mirror)	Pass	• Typical Thixotropic Index: SSF (ICA Test)	-0.60
• Presence of Halide Silver Chromate Fluoride Spot Test	Pass	• Slump Test	Pass
• Non-Volatile Content (Solids Content)	95%	• Solder Ball Test	Pass
• SIR	Pass	• Typical Tackiness	50 grams
• Electromigration (Bellcore Test)	Pass	• Wetting Test	Pass
• Acid Value	68		
• Post Reflow Residue (ICA Test)	45%		

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

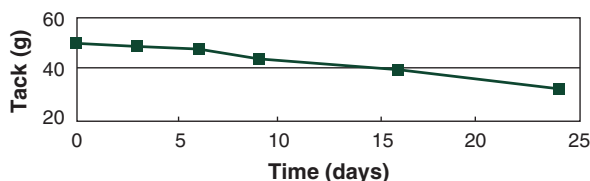
SIR Test Results

J-STD-004



Tack vs. Time Data

J-STD-005



Form No. 97665 (A4) R7

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ISO 9001
REGISTERED

WMA-SMQ® 69HT High Temperature Water-Soluble Solder Paste

Printing

Stencil Material:

Stainless Steel, Brass, or Nickel Plated

Stencil Thickness:

0.050"/1.27mm pitch: 0.010"/0.254mm to 0.008"/0.203mm
 0.025"/0.635mm pitch: 0.008"/0.203mm to 0.006"/0.152mm
 0.020"/0.508mm pitch: 0.006"/0.152mm to 0.004"/0.102mm
 0.016"/0.406mm pitch: 0.005"/0.127mm to 0.004"/0.102mm
 0.012"/0.305mm pitch: 0.004"/0.102mm to 0.003"/0.076mm

Squeegee:

80-90 Shore A Durometer Rubber or Stainless Steel Blade

Squeegee Speed:

25.4 mm to 50.8 mm per second for typical fine-pitch printing. Faster or slower speeds can be used depending on process requirements.

Squeegee Pressure:

0.018-0.027kg/mm of blade length

Cleaning

The residue is easily cleaned with plain water at a minimum of 40psi (2.7bar) and 55°C. These parameters may be adjusted to accommodate various board geometries and the efficiency of the cleaner.

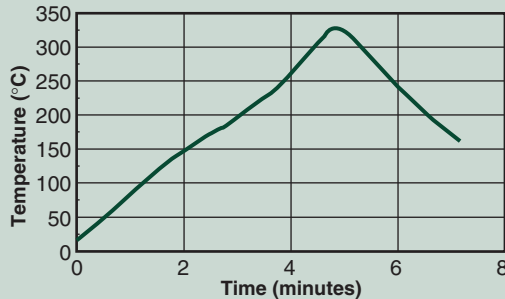
Stencil cleaning is best performed using plain hot water. Cleaning in common stencil cleaners or isopropyl alcohol is also effective.

Compatible Products

- Rework Flux: TACFlux 019

Reflow

Recommended Profile:



This profile is for use with Indalloy #151 (92.5Pb, 5Sn, 2.5Ag) & Sn10 (88Pb, 10Sn, 2Ag) 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 four basic stages:

1. Preheat: 1°C to 2°C/second rate of rise
2. Soak or Dryout: 30 to 60 seconds
3. Reflow: Peak temperature should be 10°C to 40°C above the liquidus of the alloy for 30 to 60 seconds.
4. Cool down: <4°C/second

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.

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