

## WS488 WATER SOLUBLE SOLDER PASTE

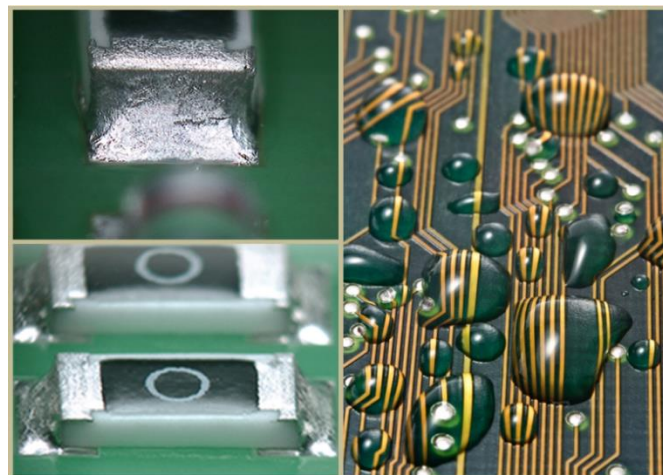
### FEATURES

- Excellent Wetting
- Extended Cleaning Window
- Superior Slump Resistance
- 8 Hour+ Stencil Life
- Wash With Water Alone
- Low Foaming

### DESCRIPTION

AIM's WS488 water soluble solder paste has been engineered for powerful wetting performance on all solderable electronic surfaces, components, assemblies, and substrates. WS488 offers robust environmental tolerance, excellent print characteristics and 8+ hours of stencil life. WS488 has been developed to provide stable performance with all leaded and lead-free alloys. WS488 highly soluble residues are easily removed in plain water, even under low stand-off components. This all-purpose water soluble product was created to meet the industry's demand for a consistently reliable water soluble solder paste.

### CHARACTERISTICS



### HANDLING & STORAGE

Parameter	Time	Temperature
Sealed Refrigerated Shelf Life	6 Months	0°C-12°C (32°F-55°F)
Sealed Unrefrigerated Shelf Life	2 Weeks	< 25°C (< 77°F)

Do not add used paste to unused paste. Store used paste separately; keep unused paste tightly sealed with internal plug or end cap in place. After opening, solder paste shelf life is environment and application dependent. See AIM's paste handling guidelines for further information. Alloy and storage conditions may affect shelf life. Please refer to WS488 Certificate of Analysis for product specific information.

### CLEANING

**Pre-Reflow:** AIM stencil cleaner effectively removes solder paste from stencils while in process. Stencil cleaner can be hand applied or used in under stencil wipe equipment. Stencil cleaner will not dry paste and will enhance transfer properties. Do not over-apply stencil cleaner. Do not apply stencil cleaner to stencil topside. Isopropanol (IPA) is not recommended in process but may be used as a final stencil rinse.

**Post-Reflow Flux Residue:** AIM recommends water soluble flux residue to be removed within 24 hours for optimal results but can be left on the board for up to 2 weeks. Cleaning can be performed in plain water between 50°C-60°C (120°F-140°F) following with a final rinse in DI water.

\*All information for reference only. Not to be used as incoming product specifications or for process design. Consult Certificate of Analysis for product specific information.

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## REFLOW PROFILE

Detailed profile information may be found at <http://www.aimsolder.com/reflow-profile-supplements>. Contact AIM for additional information.

## PRINTING

Recommended Initial Printer Settings - Dependent on PCB and Pad Design	
Parameter	Recommended Initial Settings
Squeegee Pressure	0.10-0.30 kg/cm (.6 - 1.7 lbs/in.) of blade
Squeegee Speed	12-150 mm/sec (.5-6"/sec)
Snap-off Distance	On Contact 0.00 mm
PCB Separation Distance	0.75 - 2.0 mm
PCB Separation Speed	Slow

## TEST DATA SUMMARY

Name	Test Method	Results	
IPC Flux Classification	J-STD-004 Current rev	ORM1	
Name	Test Method	Typical Results	Image
Copper Mirror	J-STD-004B 3.4.1.1 IPC-TM-650 2.3.32	M = < 50% Breakthrough	
Corrosion	J-STD-004B 3.4.1.2 IPC-TM-650 2.6.15	Minor	<div>Before</div>  <div>After</div> 
Quantitative Halides	J-STD-004B 3.4.1.3 IPC-TM-650 2.3.28.1	0.07% Typical	M1

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Name	Test Method	Typical Results	Image																						
Qualitative Halides, Silver Chromate	J-STD-004 3.5.1.1 IPC-TM-650 2.3.33	Halides Present																							
Qualitative Halides, Fluoride Spot	J-STD-004B 3.5.1.2 IPC-TM-650 2.3.35.1	No Fluoride																							
Surface Insulation Resistance	J-STD-004 3.2.4.5 IPC-TM-650 2.6.3.7	PASS	Cleaned																						
Acid Value Determination	J-STD-004B 3.4.2.2 IPC-TM-650 2.3.13	55.2 mg KOH/g Flux Typical																							
Viscosity	J-STD-005A 3.5.1 IPC-TM-650 2.4.34	600-1000 Kcps Typical																							
Visual	J-STD-004B 3.4.2.5	Dark Brown																							
Slump	J-STD-005A 3.6 IPC-TM-650 2.4.35	PASS																							
Solder Ball	J-STD-005A 3.7 IPC-TM-650 2.4.43	PASS																							
Tack	J-STD-005A 3.8 IPC-TM-650 2.4.44	30.5 gf Typical	<div><p><b>TACK TEST</b> IPC TM-650 2.4.44 Sn63 WS-DP001-26 89.5T3</p><table><caption>Tack Test Data (Approximate)</caption><thead><tr><th>Time (hrs)</th><th>Tack (gf)</th></tr></thead><tbody><tr><td>0</td><td>28</td></tr><tr><td>0.5</td><td>25</td></tr><tr><td>1</td><td>10</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>15</td></tr><tr><td>4</td><td>12</td></tr><tr><td>5</td><td>12</td></tr><tr><td>6</td><td>18</td></tr><tr><td>7</td><td>18</td></tr><tr><td>8</td><td>18</td></tr></tbody></table></div>	Time (hrs)	Tack (gf)	0	28	0.5	25	1	10	2	10	3	15	4	12	5	12	6	18	7	18	8	18
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Wetting	J-STD-005A 3.9 IPC-TM-650 2.4.45	PASS																							

\*In order to be rated ORL0, the solder paste has to pass SIR without cleaning. As WS488 is a water soluble paste chemistry that requires cleaning, it is rated ORM1 by IPC standards.

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