

## WS488 WATER SOLUBLE SOLDER PASTE

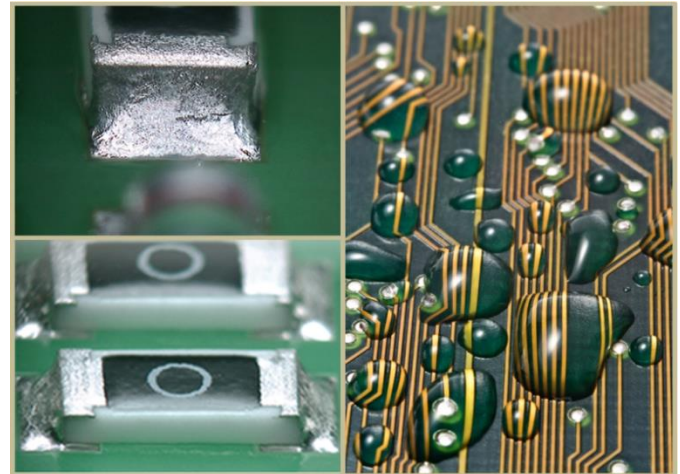
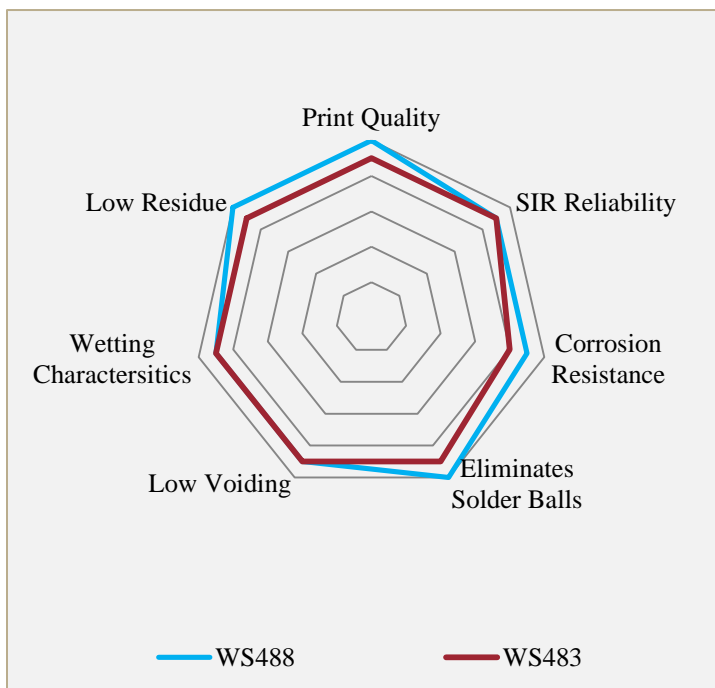
### FEATURES

- 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 DJAW-10 effectively removes WS488 solder paste from stencils while in process. DJAW-10 can be hand applied or used in under stencil wipe equipment. DJAW-10 will not dry WS488 and will enhance transfer properties. Do not over-apply DJAW-10. Do not apply DJAW-10 to stencil topside. Isopropanol (IPA) is not recommended in process, but may be used as a final stencil rinse.

**Post-Reflow Flux Residue:** WS488 residues can remain on the assembly after reflow for up to 2 weeks without corrosion. Cleaning is mandated and can be performed in plain water between 50°C-60°C (120°F-140°F) following with a final rinse in DI water.




## 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	ORM1	
IPC Flux Classification	J-STD-004B 3.3.1	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 style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Before</p>  </div> <div style="text-align: center;"> <p>After</p>  </div> </div>
Quantitative Halides	J-STD-004B 3.4.1.3 IPC-TM-650 2.3.28.1	0.07% Typical	M1

# TECHNICAL DATA SHEET

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	 <p><b>TACK TEST</b> IPC TM-650 2.4.44 Sn63 WS-DP001-26 89.5T3</p> <table border="1"> <caption>Tack Test Data</caption> <thead> <tr> <th>Time (hrs)</th> <th>Tack (gf)</th> </tr> </thead> <tbody> <tr><td>0</td><td>30.5</td></tr> <tr><td>1</td><td>8</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>13</td></tr> <tr><td>6</td><td>18</td></tr> <tr><td>7</td><td>17</td></tr> <tr><td>8</td><td>20</td></tr> </tbody> </table>	Time (hrs)	Tack (gf)	0	30.5	1	8	2	10	3	15	4	12	5	13	6	18	7	17	8	20
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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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