WS488
SAC305

Solder plus Support

Water Soluble Solder Paste

Features:

- Excellent Wetting
- Extended Cleaning Window
- Superior Slump Resistance
- 8 Hour + Stencil Life
- Aqueous Wash with Water
- Large Process Window

Description:

AIM's WS488 water soluble solder paste has been designed to wet virtually any solderable electronic surfaces, components, assemblies, and substrates. WS488 offers superior slump resistance, as well as excellent print characteristics and 8+ hours of stencil life. WS488 is compatible with all leaded and lead-free alloys, and has been developed for use in a wide range of applications. Easily cleaned in tap water, this all purpose water soluble product was created to meet the industry's demand for a consistently reliable water soluble product.

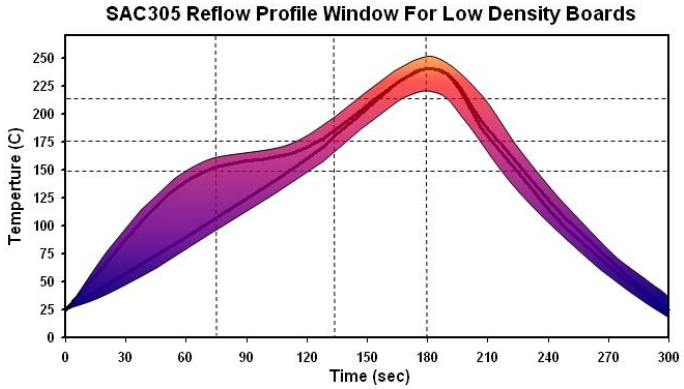
Printing:

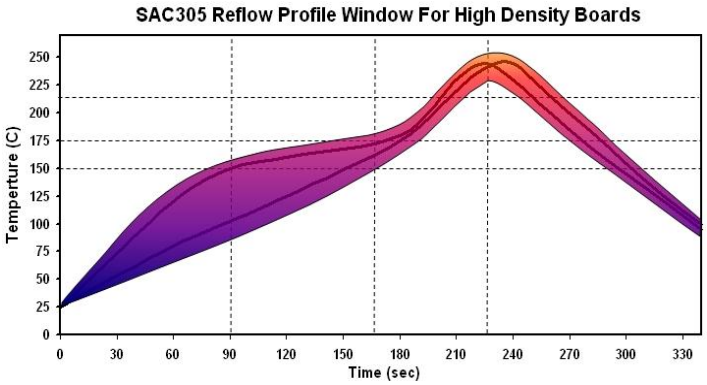
- Apply sufficient paste to the stencil to allow a smooth, even roll during the print cycle (a bead diameter of 12 to 16 mm (½ to ⅝ inch) is normally sufficient to begin).
- Apply small amounts of fresh solder paste to the stencil at controlled intervals to maintain paste chemistry and workable properties.
- WS488 provides the necessary tack time and force for today's high speed placement equipment, which will enhance product performance and reliability.

RECOMMENDED INITIAL PRINTER SETTINGS BELOW ARE DEPENDENT ON PCB AND PAD DESIGN			
PARAMETER	*RECOMMENDED INITIAL SETTINGS*	*PARAMETER*	*RECOMMENDED INITIAL SETTINGS*
Squeegee Pressure	0.10-0.30 kg/cm (.6 - 1.7 lbs/In.) of blade	PCB Separation Distance	0.75-2.0 mm (.030-.080")
Squeegee Speed	12-150 mm/sec (.5-6"/sec)	PCB Separation Speed	Slow
Snap-off Distance	On Contact 0.00 mm (0.00")		

Reflow Profile:

Two unique profile families are depicted below; both can be used in ramp-spike or ramp-soak-spike applications, and they each have similar reflow temperatures. The two profiles differ in where they reach their respective peak temperatures, as well as the time above liquidus (TAL). The shorter profile of the two would apply to smaller assemblies, where as the longer profile would apply to larger assemblies, such as backplanes or high-density boards. The shaded area defines the process window. Oven efficiency, board size/mass, component type and density all influence the final profile for a given assembly. These profiles are starting points, and processing boards with thermal-couples attached is recommended to optimize the process.





RATE OF RISE 2°C / SEC MAX	*RAMP TO 150°C (302°F)*	*PROGRESS THROUGH 150°C-175°C (302°F-347°F)*	*TO PEAK TEMP 230°C-245°C (445°F-474°F)*	*TIME ABOVE 217°C (425°F)*	*COOLDOWN ≤ 4 °C / SEC*	*PROFILE LENGTH AMBIENT TO COOL DOWN*
Short Profiles	≤ 75 Sec	30-60 Sec	45-75 Sec	30-60 Sec	45± 15 Sec	2.75-3.5 Min
Long Profiles	≤ 90 Sec	60-90 Sec	45-75 Sec	60-90 Sec	45± 15 Sec	4.5-5.0 Min

- THE RECOMMENDED REFLOW PROFILE FOR WS488 IS PROVIDED AS A GUIDELINE. OPTIMAL PROFILE MAY DIFFER DUE TO OVEN TYPE, ASSEMBLY LAYOUT, OR OTHER PROCESS VARIABLES. CONTACT AIM TECHNICAL SUPPORT IF YOU REQUIRE ADDITIONAL PROFILING ASSISTANCE.
- THE REFLOW PROFILE FOR THE SAC305 PASTES USING A VAPOR PHASE REFLOW OVEN: PEAK TEMPERATURE RANGE I S 230°C – 245°C.

Compatible Products:

- Electropure Solder Bar
- WS Tacky Flux
- WS715; WS375 Spray Flux
- WS482 Cored Wire
- Epoxy 4089 – Chip Bonding Epoxy
- 200AX – Stencil Cleaner

Cleaning:

WS488 can be cleaned easily with normal tap water. Deionized water is recommended for the final rinse. A temperature of 38°C (100°F) - 66°C (150°F) is sufficient for removing residues. An in-line or other pressurized spray cleaning system is suggested, but is not required.

Handling and Storage:

- WS488 has a refrigerated shelf life of 1 year at 4°C (40°F) - 12°C (55°F).
- Allow the solder paste to warm naturally to ambient temperature (8 hrs.) prior to breaking the seal for use.
- Mix the product lightly and thoroughly for 1 to 2 minutes to ensure even distribution of any separated material.
- Do not store new and used paste in the same container, and reseal any opened containers while not in use.
- Replace the internal plug and cap of the 500 gram jars to ensure the best possible seal.

Safety:

- Use with adequate ventilation and proper personal protective equipment.
- Refer to the accompanying Material Safety Data Sheet for any specific emergency information.
- Do not dispose of any lead-containing materials in non-approved containers.

Physical Properties:

ITEM	*SPECIFICATION*
Appearance	Gray, Smooth, Creamy
Alloy	SAC305
Melting Point	217°C
Particle Size	T3, T4, T5
General Metal Loading	88.5% (T3)
Viscosity	Print/Dispense Versions Available
Packaging	Available in all industry standard packaging.

Test Data Summary:

CLASSIFICATION			
Product Name	IPC Classification to J-STD-004	Copper Mirror to J-STD-004	Silver Chromate to J-STD-004
WS488	ORM1	< 50% Breakthrough – M	Halides Present
POWDER TESTING			
No.	Item	Results	Test Method
1	Powder Size	Type 3 – 45-25 micron Type 4 – 38-20 micron	J-STD-004 IPC TM 650 2.2.14
2	Powder Shape	Spherical	Microscope
FLUX MEDIUM TESTING			
No.	Item	Results	Test Method
1	Acid Value	55.17 mg KOH/g Flux	J-STD-004 IPC TM 650 2.3.13
2	Fluorides Spot Test	No Fluoride	J-STD-004 IPC TM 650 2.3.35.1 J-STD-004 IPC TM 650 2.3.35.2
3	Corrosivity Test/ Copper Mirror	< 50% Breakthrough – M	J-STD-004 IPC TM 650 2.3.32
4	Halide-Free/Silver Chromate Paper Test	Halides Present	J-STD-004 IPC TM 650 2.3.33
5	Surface Insulation Resistance (Solder paste was reflowed on test coupons, left at ambient temperatures for 2 weeks, then cleaned with 55-58°C tap water for 120 sec, and allowed to air dried for 30 min before testing)	Control Coupons > 1E9Ω at 96 & 168 h. - Pass Sample Coupons > 1E8Ω at 96 & 168 h. - Pass > No dendrite growth or corrosion, after a visual inspection - pass	J-STD-004 IPC TM 650 2.6.3.3
6	Compatibility Test	See list of recommended products above	GR-78-CORE
VISCOSITY TESTING			
No.	Item	Results	Test Method
1	T-Bar Spindle Test Method	Printing: 900 ± 10% kcps Dispensing: 400 ± 20% kcps	J-STD-005 IPC TM 650 2.4.34
SOLDER PASTE TESTING			
No.	Item	Results	Test Method
1	Tack Test	30.5 gf	J-STD-005 IPC TM 650 2.4.44
2	Tack Test	82.8 gf	JIS Z 3284 Annez 9
3	Solder Ball Test	Pass	J-STD-005 IPC TM 650 2.4.43
4	Wetting Test	Pass	J-STD-005 IPC TM 650 2.4.45
5	Paste Shelf Life	4°C (39°F) = 1 year	AIM TM 125-11
6	Solder Paste Slump Test	Pass	J-STD-005 IPC TM 650 2.4.35

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AIM IS ISO9001:2008 CERTIFIED

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ООО «ЛайфЭлектроникс» “LifeElectronics” LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

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- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
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- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

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- *Регистрацию проекта у производителя компонентов.*
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