



Technical Bulletin



Solder plus Support

V9 No Clean Low Voiding Solder Paste

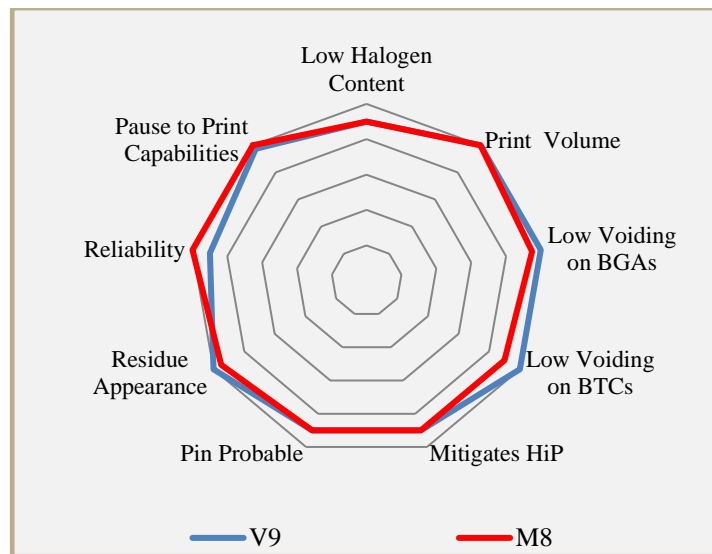
DESCRIPTION

AIM's V9 Low-Voiding No Clean solder paste is formulated for near-zero voiding on BGA, BTC and LED soldering applications. Significant void reduction achievable on all surface finishes including ENIG, ImSn and OSP. V9 exhibits stable print performance on fine feature devices over 12 hours. V9 post-process residue is easily pin-probed and has high SIR values.

FEATURES AND BENEFITS

- Low-Voiding: as low as 1% on BGA and <5% on BTCs
- Capable of Consistent Printing with Area Ratio <0.66
- High Reliability (SIR)
- Drop-in for M8
- REACH and RoHS* Compliant
- Available in SAC305 T4

CHARACTERISTICS



*Lead-free alloys.

STORAGE & SHELF LIFE

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 V9 Certificate of Analysis for product specific information.

PARAMETER	TIME	TEMPERATURE
Sealed Refrigerated Shelf Life	6 Months	0°C-12°C (32°F-55°F)
Sealed Unrefrigerated Shelf Life	1 Month	< 25°C (< 77°F)



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CLEANING

Pre-Reflow: AIM DJAW-10 effectively removes V9 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 V9 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: V9 residues can remain on the assembly after reflow and do not require cleaning. Where cleaning is mandated, AIM has worked closely with industry partners to ensure that V9 residues can be effectively removed with common defluxing agents. Contact AIM for cleaning compatibility information.

HEALTH & SAFETY

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

REFLOW PROFILE


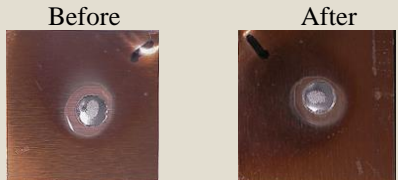
Detailed profile information may be found at <http://www.aimsolder.com/reflow-profile-supplements>.

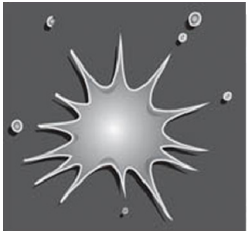
PRINTING

RECOMMENDED INITIAL PRINTER SETTINGS - DEPENDENT ON PCB AND PAD DESIGN

Parameter	Recommended Initial Settings
Squeegee Pressure	0.4 - 0.7kg/25mm
Squeegee Speed	13 – 152 mm/second
Snap-off Distance	On Contact 0.00 mm
PCB Separation Distance	0.75 - 2.0 mm
PCB Separation Speed	3 - 20 mm/second


TEST DATA SUMMARY

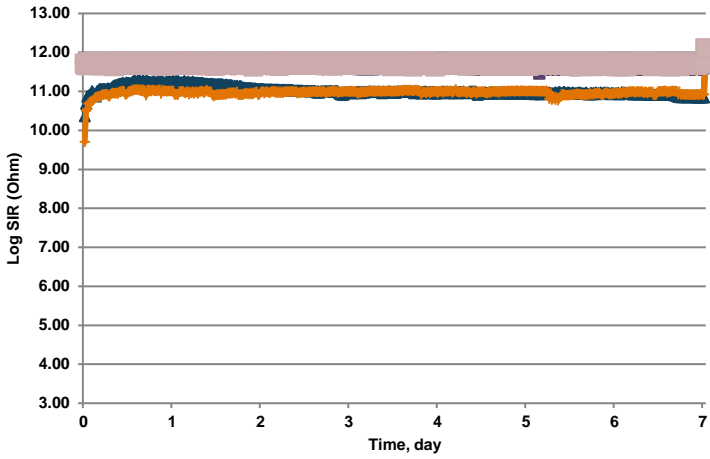
NAME	TEST METHOD	RESULTS	
IPC Flux Classification	J-STD-004 3.3	ROL0	
IPC Flux Classification	J-STD-004B 3.3	ROL1	
NAME	TEST METHOD	TYPICAL RESULTS	IMAGE
Copper Mirror	J-STD-004B 3.4.1.1 IPC-TM-650 2.3.32	LOW	
Corrosion	J-STD-004B 3.4.1.2 IPC-TM-650 2.6.15	PASS	

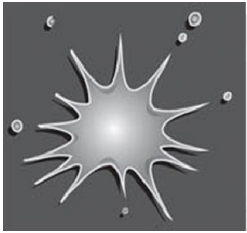


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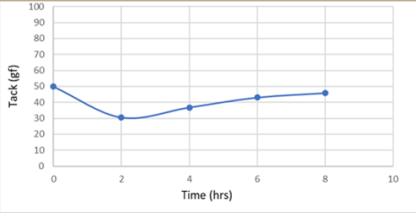
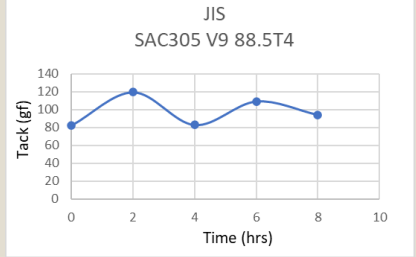
Quantitative Halides	J-STD-004B 3.4.1.3 IPC-TM-650 2.3.28.1	Br: 0.44% Cl: 0.0% Typical	
Qualitative Halides, Silver Chromate	J-STD-004B 3.5.1.1 IPC-TM-650 2.3.33	PASS	
Qualitative Halides, Fluoride Spot	J-STD-004B 3.5.1.2 IPC-TM-650 2.3.35.1	PASS	

NAME	TEST METHOD	TYPICAL RESULTS	IMAGE
Surface Insulation Resistance	J-STD-004B 3.4.1.4 IPC-TM-650 2.6.3.7	All measurement on test exceed 100 MΩ	 <p>Log SIR (Ohm)</p> <p>Time, day</p> <p> —●— V9 SAC305 1A —●— V9 SAC305 2A —●— V9 SAC305 3A —●— V9 SAC305 4A —●— V9 SAC305 1B —●— V9 SAC305 2B —●— V9 SAC305 3B —●— V9 SAC305 4B —●— control 1A —●— control 1B —●— control 1C —●— control 1D —●— control 2A —●— control 2B —●— control 2C —●— control 2D —●— control 3A —●— control 3B —●— control 3C —●— control 3D </p>
Flux Nonvolatile Determination	J-STD-004B 3.4.2.1 IPC-TM-650	94.14% Typical	
Acid Determination	J-STD-004B 3.4.2.2 IPC-TM-650	139.03 mg KOH/ Typical	
Viscosity (Malcom)	J-STD-005A 3.5.1 IPC-TM-650 2.4.34	130-200 Pa·s Typical	



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NAME	TEST METHOD	TYPICAL RESULTS	IMAGE
Visual	J-STD-004B 3.4.2.5	PASS	
Slump	J-STD-005A 3.6 IPC-TM-650 2.4.35	PASS	
Spread Test	J-STD-004B 3.7.2 IPC-TM-650 2.4.46	PASS	
Solder Ball	J-STD-005A 3.7 IPC-TM-650 2.4.43	PASS	 <p style="text-align: center;">15 min 4 hrs</p>
Tack	J-STD-005A 3.8 IPC-TM-650 2.4.44	36.1 gf Time 0 Typical	
Tack	JIS Z 3284 Annex 9	82.5 gf Time 0 Typical	<p style="text-align: center;">JIS SAC305 V9 88.5T4</p> 

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