INVENTEC
PERFORMANCE CHEMICALS
INSPIRING INNOVATION

500 Main Street, Suite 18
PO Box 989
Deep River, CT 06417 USA

Toll Free: 800.435.0317
Phone: 860.526.8300
Fax: 860.526.8243
www.inventecusa.com

VS-213A, No-Clean Solder Paste

Product Data Sheet

Product Highlights

- ROL0 flux classification
- Designed for LGA, BGA, and CSP components
- Halogen free per EN14582 test method
- Excellent wetting on all common surface finishes
- Clear residue
- Low voiding
- Long stencil life
- RoHS II and REACH compliant

Available Alloys

Alloy	Temp °C	Temp °F
96.5Sn/3.0Ag/0.5Cu	217-220	423-428

Packaging

500 gram cartridges

Test Results

Test J-STD-004 or other requirements (as stated)	Test Requirement	Result
Copper Mirror	IPC-TM-650: 2.3.32	L: No breakthrough
Corrosion	IPC-TM-650: 2.6.15	L: No corrosion
Quantitative Halides	IPC-TM-650: 2.3.28.1	L: <0.5%
Electrochemical Migration	IPC-TM-650: 2.6.14.1	L: <1 decade drop (No-clean)
Surface Insulation Resistance 85 °C, 85% RH@ 168 Hours	IPC-TM-650: 2.6.3.7	L: 100 M (No Clean)
Tack Value	IPC-TM-650: 2.4.44	34g
Viscosity - Malcom @ 10 RPM/25 °C ($x10^3$mPa/s)- SAC305 T3/T4	IPC-TM-650: 2.4.34.4	Print: 120-185 Dispensing: 105-150
Visual	IPC-TM-650: 3.4.2.5	Clear and free from precipitation
Conflict Minerals Compliance	Electronic Industry Citizenship Coalition (EICC)	Compliant
REACH Compliance	Articles 33 and 67 of Regulation (EC) No 1907/2006	Contains no substance >0.1% w/w that is listed as a SVHC or restricted for use in solder materials

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Printer Operation

The following are general guidelines for stencil printer optimization with VS-213A. Some adjustments may be necessary based on your process requirements.

Print Speed: 25-150 mm/sec
Squeegee Pressure: 70-250g/cm of blade
Under Stencil Wipe: Once every 10-25 prints, or as necessary

Stencil Life

> 12 hours @ 30-45% RH and 20-25 °C
~ 4 hours @ 45-75% RH and 20-25 °C

Amtech Low Oxide Powder Distribution

Micron Size	Type	Pitch Requirements
45-75μ	Type-2	24 mil and above
25-45μ	Type-3	16-24 mil
20-38μ	Type-4	12-16 mil
15-25μ	Type-5	8-12 mil
5-15μ	Type-6	5-8 mil
2-11μ	Type-7	< 5 mil

Note: Type-6 and Type-7 may not be available in certain alloys.
Other powder distributions are available on request.

Storage

Solder paste should be stored between 3-8 °C (37-46 °F) to obtain the maximum refrigerated shelf life of six months. Unopened solder paste stored at room temperature, 25 °C (77 °F) will have a one-month shelf life. Syringes and cartridges should be stored vertically in the refrigerator with the dispensing tip down. Allow 4-8 hours for solder paste to reach an operating temperature of 20-25 °C (68-77 °F). Keep the solder paste container sealed while warming the solder paste to operating temperature.
NEVER FREEZE SOLDER PASTE.

Recommended Profile

This profile is designed to serve as a starting point for process optimization using VS-213A. To achieve better results with voiding or to reduce tombstoning, consider using a longer soaking zone, (170-220 °C) for 60-90 seconds, with a more rapid pre-heat stage. If there is evidence of solder de-wetting, consider lowering the peak reflow temperature, or reduce the time above liquidus to <60 seconds.