



AMTECH

Advanced SMT Solder Products

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NWS-4400-HA-LF, Water Washable Solder Paste

Product Data Sheet

Product Highlights

- REM1 flux classification
- Long stencil life and wide process window
- Anti-tombstoning
- No beading
- Low voiding
- Excellent wetting of oxidized finishes
- Compatible with enclosed print heads
- RoHS II and REACH compliant
- Print & Dispense grade solder paste available

Available Alloys

Alloy	Temp °C	Temp °F
42Sn/58Bi	138	280
42Sn/57Bi/1Ag	138	280
96.5Sn/3.0Ag/0.5Cu	217-220	423-428
99.0Sn/0.3Ag/0.7Cu	217-221	423-430
96.5Sn/3.5Ag	221	430
99.3Sn/0.7Cu	227	441
95Sn/5Sb	235-240	455-464
95Sn/5Ag	221-245	430-473

Packaging

500 gram jars
500 gram cartridges
35 or 100 gram syringes
ProFlow cassettes

Test Results

Test J-STD-004 or other requirements (as stated)	Test Requirement	Result
Copper Mirror	IPC-TM-650: 2.3.32	M: <50% breakthrough
Corrosion	IPC-TM-650: 2.6.15	M: Minor
Quantitative Halides	IPC-TM-650: 2.3.28.1	L: <0.5%
Electrochemical Migration	IPC-TM-650: 2.6.14.1	M: <1 decade drop (cleaned)
Surface Insulation Resistance 85 °C, 85% RH @ 168 Hours	IPC-TM-650: 2.6.3.7	M: ≥100 MΩ (cleaned)
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: 210-270 Dispensing: 90-125
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

NWS-4400-HA-LF, Water Washable Solder Paste

Printer Operation

The following are general guidelines for stencil printer optimization with NWS-4400-HA-LF. Some adjustments may be necessary based on your process requirements.

Print Speed: 25-100 mm/sec

Squeegee Pressure: 70-250g/cm of blade

Under Stencil Wipe: Once every 10-25 prints, or as necessary

Stencil Life

> 8 hours @ 30-45% RH and 20-25 °C

~ 4 hours @ 45-75% RH and 20-25 °C

Cleaning

NWS-4400-HA-LF can be cleaned using deionized water at 40-60 °C with a recommended water pressure of 30-50 PSI. NWS-4400-HA-LF can also be cleaned using commercially available flux residue removers such as Kyzen Aquanox A4241, A4520, A4625 and A4625B (Batch Cleaners). Kyzen brand cleaners are available from Amtech.

Recommended Profile

This profile is designed to serve as a starting point for process optimization using NWS-4400-HA-LF. 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 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.

Amtech Low Oxide Powder Distribution

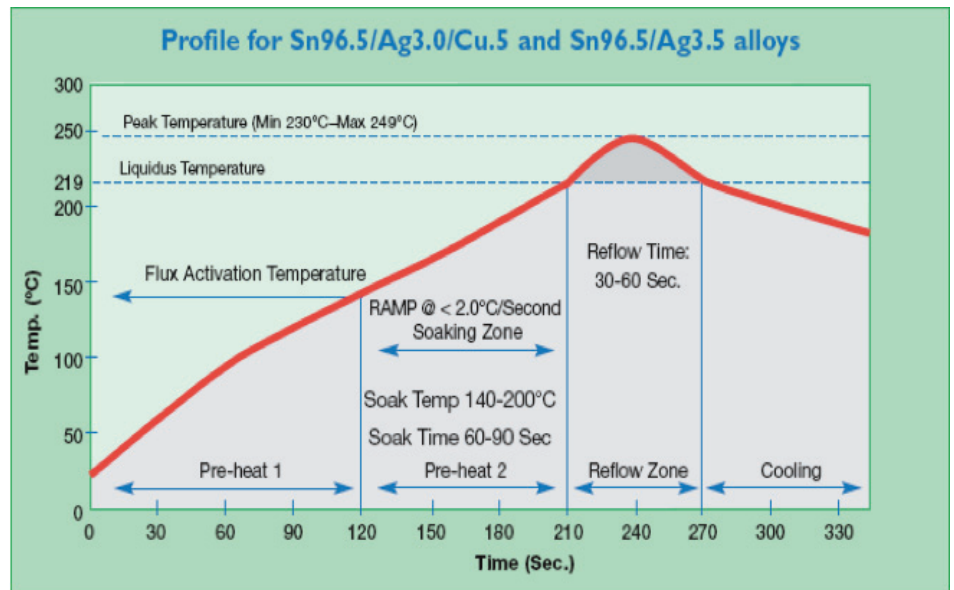
Micron Size	Type	Pitch Requirements
45-75µ	Type-2	24 mil and above
25-45µ	Type-3	16-24 mil
20-38µ	Type-4	12-16 mil
15-25µ	Type-5	8-12 mil
5-15µ	Type-6	5-8 mil
2-11µ	Type-7	< 5 mil

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.



AMTECH Part Numbers

NWS-4400-HA-LF 96.5Sn/3.0Ag/0.5Cu, Type 3, 500 gram jar: Part Number: 11760

NWS-4400-HA-LF 96.5Sn/3.0Ag/0.5Cu, Type 4, 500 gram jar: Part Number: 11755

NWS-4400-HA-LF 96.5Sn/3.0Ag/0.5Cu, Type 3, 500 gram cartridge: Part Number: 11750

NWS-4400-HA-LF 96.5Sn/3.0Ag/0.5Cu, Type 4, 500 gram cartridge: Part Number: 11751

Other alloy and packaging combinations available upon request.