



# AMTECH

Advanced SMT Solder Products

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.amtechsolder.com

## NWS-4400-HA, 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
- REACH compliant
- Print & Dispense grade solder paste available

#### Available Alloys

Alloy	Temp °C	Temp °F
63Sn/37Pb	183	361
62Sn/36Pb/2Ag	179	354
62.8Sn/36.8Pb/0.4Ag	179-183	354-361
60Sn/40Pb	183-191	361-376
43Sn/43Pb/14Bi	144-163	291-325
42Sn/58Bi	138	280

#### Packaging

500 gram jars  
700 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 <sup>3</sup> mPa/s)- Sn63/Pb37 T3/T4	IPC-TM-650: 2.4.34.4	Print: 200-275 Dispensing: 130-180
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, Water Washable Solder Paste

## Printer Operation

The following are general guidelines for stencil printer optimization with NWS-4400-HA. 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 can be cleaned using deionized water at 40-60 °C with a recommended water pressure of 30-50 PSI. NWS-4400-HA 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. To achieve better results with voiding or to reduce tombstoning, consider using a longer soaking zone, (140-180 °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 Part Numbers

NWS-4400-HA 63Sn/37Pb, Type 3, 500 gram jar: Part Number: 11789

NWS-4400-HA 63Sn/37Pb, Type 3, 700 gram cartridge: Part Number: 11800

NWS-4400-HA 63Sn/37Pb, Type 4, 700 gram cartridge: Part Number: 11810

Other alloy and packaging combinations available upon request.

## 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.**

