AMTECH
Advanced SMT Solder Products

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Pt #, SMD4300AX10, SMD4300AX10T5, SMD4300AX250T3
SMD4300AX250T5 **Manufactured for Chip Quik by Amtech**

4300, Water Washable Solder Paste

Product Data Sheet

Product Highlights

- REL0 flux classification in a Water Washable Solder Paste
- Tier I Military/Avionic OEM approved
- Exceptional print definition at high printing speeds up to 100mm/sec
- Residue can be left on the board in most assemblies (not recommended for high impedance assemblies)
- Clear Residue
- Low voiding, including LGA components
- Low mid-chip beading
- REACH compliant
- Compatible with enclosed print heads
- Print and 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	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 MΩ (no-clean)
Tack Value	IPC-TM-650: 2.4.44	37g
Viscosity - Malcom @ 10 RPM/25 °C ($x10^3$mPa/s)- Sn63/Pb37 T3/T4	IPC-TM-650: 2.4.34.4	Print: 200-275 Dispensing: 100-140
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

4300, Water Washable Solder Paste

Printer Operation

The following are general guidelines for stencil printer optimization with 4300. 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

4300 is a water washable solder paste that can be left on the board for many SMT assemblies. For applications requiring cleaning, 4300 can be cleaned using deionized water at 40-60 °C with a recommended water pressure of 30-50 PSI. 4300 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.

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

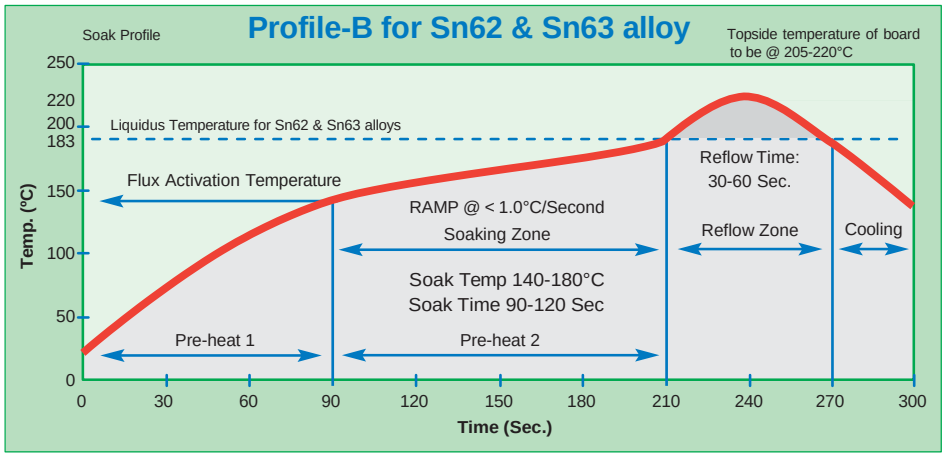
Note: Type-6 and Type-7 may not be available in certain alloys.
Other powder distributions are available on request.

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 4300. 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

4300 63Sn/37Pb, Type 3, 500 gram jar: Part Number: 11170
4300 63Sn/37Pb, Type 4, 500 gram jar: Part Number: 11250
4300 63Sn/37Pb, Type 3, 35 gram syringe: Part Number: 11080
4300 62Sn/36Pb/2Ag, Type 3, 500 gram jar: Part Number: 11040
4300 62Sn/36Pb/2Ag, Type 4, 500 gram jar: Part Number: 11045
4300 62Sn/36Pb/2Ag, Type 3, 35 gram syringe: Part Number: 11025
Other alloy and packaging combinations available upon request.

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