

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

LF-4300 Lead-Free, Water Washable Solder Paste

Product Data Sheet

Product Highlights

- RELO 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
- RoHS II and REACH compliant
- Compatible with enclosed print heads
- Print and dispense grade solder paste available

Available Alloys

Alloy	Temp °C	Temp °F
42Sn/58Bi	138	280
42Sn/57Bi/Ag1	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/0.7 Cu	227	441
95Sn/5Sb	235-240	455-464
95Sn/5Ag	221-245	430-473

Packaging

500 gram jars500 gram cartridges35 or 100 gram syringesProFlow 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)- SAC305 T3/T4	IPC-TM-650: 2.4.34.4	Print: 155-215 Dispensing: 80-115
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 LF-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

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

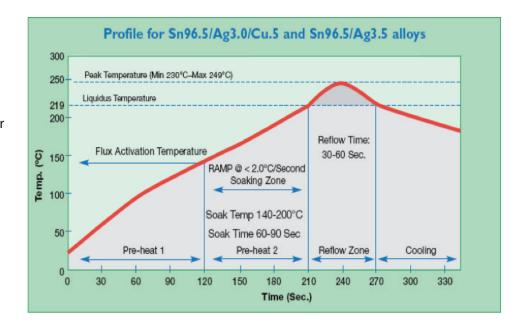
Storage

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 LF-4300. 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 Part Numbers

LF-4300 96.5Sn/3.0Ag/0.5Cu, Type 3, 500 gram jar: Part Number: 11480 LF-4300 96.5Sn/3.0Ag/0.5Cu, Type 4, 500 gram jar: Part Number: 11530

LF-4300 96.5Sn/3.0Ag/0.5Cu, Type 3, 500 gram cartridge: Part Number: 11460 LF-4300 96.5Sn/3.0Ag/0.5Cu, Type 3, 35 gram syringe: Part Number: 11410

LF-4300 96.5Sn/3.0Ag/0.5Cu, Type 4, 35 gram syringe: Part Number: 11535

Other alloy and packaging combinations available upon request.