



AMTECH
Advanced SMT Solder Products

INVENTEC
PERFORMANCE CHEMICALS

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LF-4300.2 Lead-Free, Water Washable Solder Paste

Product Data Sheet

Product Highlights

- REM1 flux classification in a Water Washable Solder Paste
- Resists moisture absorption and humidity for up to 16 hours, helps prevent slumping, tombstoning, microballing, and "head and pillow"
- 24 hour stencil/tack life
- Flux residues are clear, easy-to-clean, and compatible with batch cleaning systems
- Exceptional print definition at high printing speeds up to 100mm/sec
- 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/57.6Bi/0.4Ag	139-140	282-284
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 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 corrosion (uncleaned)
Quantitative Halides	IPC-TM-650: 2.3.28.1	M: ≥0.05 and <0.5%
Electrochemical Migration	IPC-TM-650: 2.6.14.1	L: <1 decade drop (cleaned)
Surface Insulation Resistance 40°C, 90% RH@ 168 Hours	IPC-TM-650: 2.6.3.7	L: ≥100 MΩ (cleaned)
Tack Value (initial/24 hrs)	IPC-TM-650: 2.4.44	40g
Viscosity - Malcom @ 10 RPM/25°C (x10 ³ mPa/s)- SAC305 T3/T4	IPC-TM-650: 2.4.34.4	Print: 160-210 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-4300.2. 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

> 16 hours @ 30-45% RH and 20-25 °C, 24 hrs

~ 8 hours @ 45-75% RH and 20-25 °C, ~8 hrs

Cleaning

LF-4300.2 can be cleaned using deionized water at 40-60°C with a recommended water pressure of 30-50 PSI. LF-4300.2 can also be cleaned using flux residue removers such as Inventec Disper 607 and Disper 610.

Recommended Profile

This profile is designed to serve as a starting point for process optimization using LF-4300.2. 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 <90 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 twelve 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.**

