



AMTECH

Advanced SMT Solder Products

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NWS-4400-HA/NWS-4400-HA-LF, Water Washable Tacky Flux

Product Data Sheet

Product Highlights

- REM1 flux classification
- Optimized for Lead-free and standard alloy systems
- Wide process window
- Excellent wetting compatibility on most board finishes
- Complies with REACH articles 33 and 67 of regulation (EC) No. 1907/2006

Application

NWS-4400-HA/NWS-4400-HA-LF is formulated for syringe, stencil printing, and rework applications on all PCB surface finishes. NWS-4400-HA/NWS-4400-HA-LF may be used for BGA sphere attachment and reballing. NWS-4400-HA/NWS-4400-HA-LF is also designed to work on all flip chip bumping and chip scale packaging sites.

Compatible 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
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

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	M: <0.05%
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 M (cleaned)
Viscosity - Malcom @ 10 RPM/25 °C (x10 ³ mPa/s)	IPC-TM-650: 2.4.34.4	20-48
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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Cleaning

NWS-4400-HA/NWS-4400-HA-LF is a water washable tacky flux that can be left on the board for many SMT assemblies. For applications requiring cleaning, NWS-4400-HA/NWS-4400-HA-LF can be cleaned using di-ionized water at 40-60 °C with a recommended water pressure of 30-50 PSI. NWS-4400-HA/NWS-4400-HA-LF can also be cleaned using commercially available flux residue removers such as INVENTEC Promoclean™ and Promosolv™ cleaning chemistries.

Storage and Handling

Tacky flux should be stored at room temperature (20-25 °C). Syringes and cartridges should be stored vertically with the dispensing tip down. Properly stored tacky flux has a 12 month shelf life.

Packaging

- 10 & 30cc syringes
- 75 & 150 gram jars
- 170 & 340 gram cartridges

Recommended Profile

This profile is designed to serve as a starting point for process optimization using NWS-4400-HA/NWS-4400-HA-LF. To achieve better results with voiding or to reduce tombstoning, consider using a longer soaking zone 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.

