

AMTECH NWS-4400-HA-LF

Advanced SMT Solder Products



LEAD-FREE SOLDERING
LEAD-FREE SOLDER PASTE
EXCELLENT WETTING PROPERTIES

PRODUCT APPLICATION & 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
- RoHS II and REACH compliant
- Print & Dispense grade solder paste available

COMPATIBLE ALLOYS

ALLOY	TEMPERATURE °C	TEMPERATURE °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/0.7Cu	227	441
95Sn/5Sb	235-240	455-464
95Sn/5Ag	221-245	430-473

Custom alloys available.
Contact us for availability.

TEST RESULTS

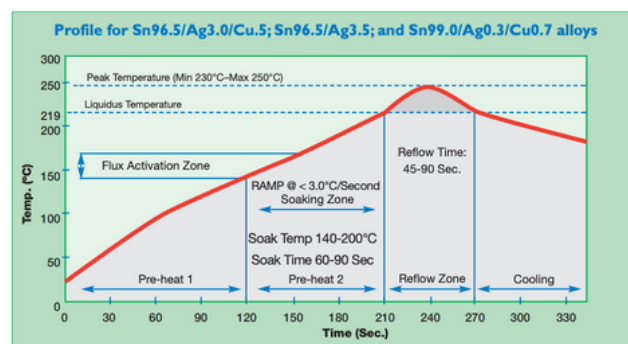
TEST J-STD-004 OR OTHER REQUIREMENTS (AS STATED)	TEST REQUIREMENT	RESULT
Copper Mirror	IPC-TM-650: 2.3.32	M: <50% breakthrough
Corrosion	IPC-TM-650: 2.6.15	M: Minor
Quantitative Halides	IPC-TM-650: 2.3.28.1	L: <0.5%
Electrochemical Migration	IPC-TM-650: 2.6.14.1	M: <1 decade drop (cleaned)
Surface Insulation 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 (x103mPa/s) - SAC305 T3/T4	IPC-TM-650: 2.4.34.4	Print: 210-270 Dispensing: 90-125
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

PROCESS RECOMMENDATION

The best process will depend on factors such as operating conditions, equipment, board or component design. Our team is ready to advise you.

REFLOW GUIDELINE

This profile is designed to serve as a starting point for process optimization. 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 <90 seconds.



CLEANING POST SOLDERING

NWS-4400-HA-LF can be cleaned using deionized water at 40-60°C with a recommended water pressure of 30-50 PSI. NWS-4400-HA-LF 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.

Inventec has over 60 years' experience in high-tech cleaning for aqueous and solvent based systems. Our solder materials are aligned with our cleaning solutions, which guarantees excellent cleaning with our materials.

PROCESS TYPE	DEFLUXING SOLUTIONS
Manual	Quicksolv™ DEF90, Quicksolv™ DEF70, Promoclean™ TP61
Aqueous (Immersion or spray)	Promoclean™ DISPER 607, Promoclean™ DISPER 707, Promoclean™ DISPER 800
Co-solvent	Topklean™ EL 80 + Promosolv™ rinsing solvents
Mono-solvent (vapor phase)	Promosolv™ 70ES, Promosolv™ 70IS

Other products available, depending on specific customer requirements. Check also our maintenance cleaning solutions.

PRINTER OPERATION

The following are general guidelines for stencil printer optimization with NWS-4400-HA-LF. 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

Amtech Low Oxide Power 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.

PACKAGING, STORAGE & SHELF LIFE

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.

AVAILABLE PACKAGING



SYRINGE
10cc (35g)



JAR
250 / 500g



CARTRIDGE
700g

HEALTH, SAFETY & ENVIRONMENT

No issues when used as recommended. In accordance with the Annex II of Directive 2011/65/UE (RoHS), including its amendments, we certify that this product does not contain quantities above 0.1% of Hg, Pb, Cr VI, PBB, PBDE, DEHP, BBP, DBP, DIBP and above 0.01% of Cd. INVENTEC PERFORMANCE CHEMICALS also fulfills its direct obligations under the REACH and Conflict Mineral regulations. Please refer always to the Safety Data Sheet (SDS or MSDS) prior to use. Our SDS can be downloaded at www.quickfds.com. We will request to provide your email address, so we can automatically send you a new version of the SDS when a future update would occur.

TECHNICAL SUPPORT & FREE-OF-CHARGE TESTING

Inventec has a worldwide dedicated Technical Support team to help you along the various stages of our cooperation.

Depending on your request, we provide online or onsite support:

- To select the right product based on your specific needs
- To assist you in your product qualification process
- To guide you with the initial set up of your process at all your worldwide manufacturing facilities
- To provide fast response on technical issues which could occur at any time during mass production

When flux cleaning is necessary, customers are welcome to visit our CLEANING CENTERS to witness the process firsthand and experience the effectiveness of our solutions. We offer both aqueous- and solvent-based processes.

Inventec is unique in the world by developing not only cleaning materials but also soldering and coating solutions. These materials are very closely linked with each other from a process point of view. Talking to our Technical Team, who understands very well these 3 different product groups, will help you greatly to overcome technical challenges within your overall process.

Contact our technical support via contact@inventec.dehon.com or your local sales representative.

ABOUT INVENTEC & AMTECH

Inventec™ is a global provider of **SOLDERING, CLEANING, COATING, COOLING** materials for **Electronic, Semiconductor and Industrial applications**. For over 60 years we have shown leadership in innovation by putting **HEALTH IMPACT, SUSTAINABILITY** and **RELIABILITY** at the core of our product development.

With ISO 9001 & 14001 production sites in France, Switzerland, USA, Mexico, Malaysia and China we can guarantee a smooth and cost-effective supply chain.

We supply to many industries but the excellent performance of our products in applications which demand high reliability, leads us to focus especially on the **AUTOMOTIVE, AEROSPACE, SEMICONDUCTOR, ENERGY** and **MEDICAL** industry.

Inventec™ acquired AMTECH™ in 2014, from where it received the rights to manufacture and commercialize the AMTECH™ product range. Inventec™ will remain supplying AMTECH™ products to our worldwide customers by aligning to our Inventec™ branding policy. If you are in doubt that you are buying genuine AMTECH™ product, contact us to check if your supply source is an authorized distributor or reseller. AMTECH™ products are produced in the USA.



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SOLDERING

CLEANING

COATING

COOLING

This data is based on information that the manufacturer believes to be reliable and offered in good faith. In no event will INVENTEC PERFORMANCE CHEMICALS be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.

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