

ALPHA[®] WS-820 Paste Flux

Water-Soluble, Halide-Free Paste Flux

DESCRIPTION

ALPHA WS-820 is a water-soluble, halide-free paste flux designed with excellent cleanability for use in lead-free alloy components.

ALPHA WS-820 was formulated to meet the requirements of water soluble solder lead-free applications. The product was developed to increase the reflow profile window of ALPHA WS-819, while offering exceptional post reflow cleanability and low BGA voiding.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Able to spread and wet using straight ramp or soak reflow profiles in air
- High spread/wetting lead free paste compatible with lead free alloys and surface finishes
- High Reflow Yield with IPC Class II Voiding Performance when used to solder BGA components
- Excellent wetting characteristics on all common surface finishes (including ENTEK HT OSP). JIS Spread 88.6% on ENTEK HT OSP
- Cleanable with water based cleaning systems

PRODUCT INFORMATION

Packaging Sizes: 30cc syringe, 100 gram jar

Environmental Compliance: RoHS Directive EU/2015/863; amending Annex II of 2011/65/EU

APPLICATION GUIDELINES

Usage: ALPHA WS-820 paste flux may be applied by screen printing or pin transfer (substrate) or doctor blade / dip coating (package). It can also be dispensed.

Reflow: ALPHA WS-820 can be successfully reflowed in clean-dry air or nitrogen atmosphere. If there is significant ΔT (>10 °C) between component, a soak profile may be required. Refer to reference reflow profiles attached.

Cleaning: ALPHA WS-820 residue is designed to be water rinsed in washing operations with minimal foaming in recirculating systems. The flux residues from ALPHA WS-820 are completely water soluble. This allows for more flexible washing conditions which can be board design specific.

Effective residue cleanability is up to 48 hours after reflow. This allows maximum process flexibility. If lower/no foaming is desired in cleaning equipment, ALPHA P-2000 defoamer may be used. Note that cleaning temperature of >150 °F (65 °C) may cause the undesirable formation of tin salts.

TECHNICAL DATA

Category	Results	Procedure/Remarks
Chemical Properties		
Activity Level	ORH0	IPC J-STD-004
Halide Content	Halide - Free	By Titration
Electrical Properties		
SIR (IPC 7 days @ 85 °C /85% RH)	Pass	IPC J-STD-004 (Pass $\geq 1 \times 10^8$ ohm),
Physical Properties		
Color	Smooth Amber Paste	
Viscosity		
(10rpm at 25 °C by Malcom Viscometer)	250 to 550 Poise	

REFLOW PROFILES

Figure 1: Typical Ramp Reflow Profile for SAC Alloys

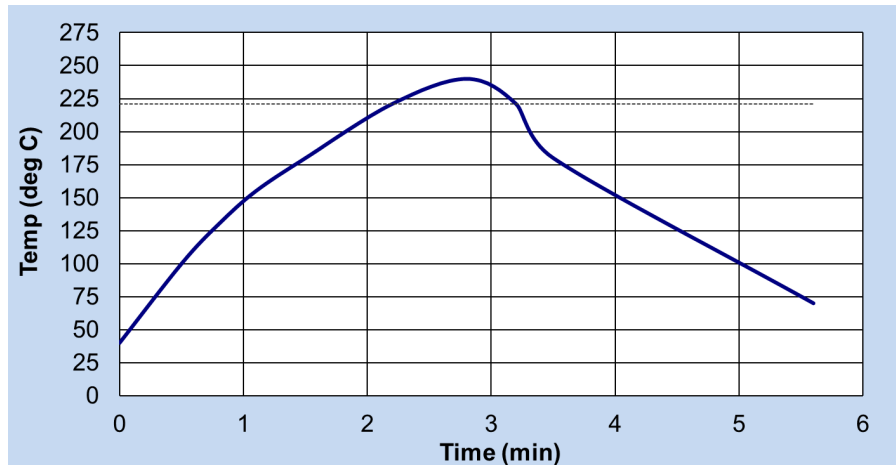
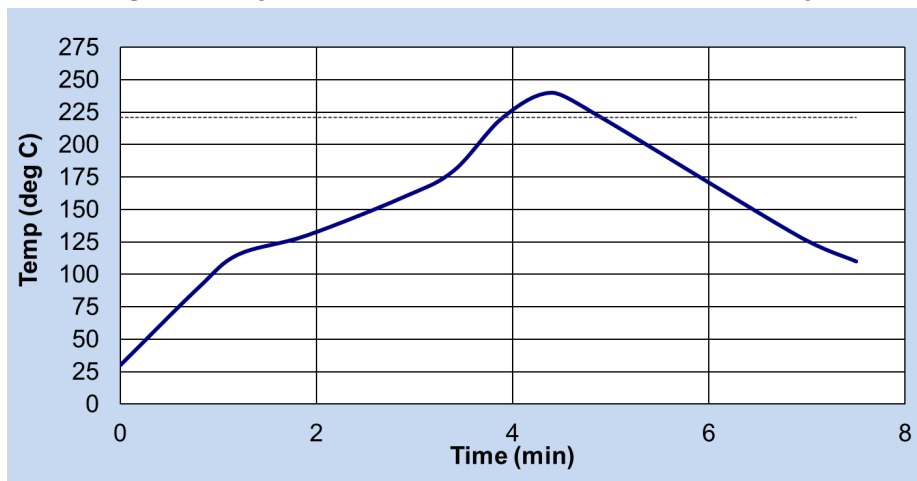


Figure 2: Typical Soak Reflow Profile for SAC Alloys



NOTE: The processing guidelines recommended and typical reflow profiles presented were tested in the lab with acceptable performance. Optimization to each board application should still be carried out by users to ensure bet results.

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

STORAGE

The flux should be stored in sealed containers and need not be refrigerated. Shelf life of unopened containers at room temperature (19 to 25 °C / 66 to 77 °F) is 4 months from the manufacturing date. If the material has been chilled, the container should be allowed to reach room temperature before opening in order to prevent moisture condensation from ambient air onto the flux.

CONTACT INFORMATION

**To confirm this document is the most recent version, please contact
 Assembly@MacDermidAlpha.com
www.macdermidalpha.com**

<p>North America 109 Corporate Blvd. South Plainfield, NJ 07080, USA 1.800.367.5460</p>	<p>Europe Unit 2, Genesis Business Park Albert Drive Woking, Surrey, GU21 5RW, UK 44.01483.758400</p>	<p>Asia 8/F., Paul Y. Centre 51 Hung To Road Kwun Tong, Kowloon, Hong Kong 852.3190.3100</p>
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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