SM824-7

ALPHA WS-619 LEAD FREE WATER SOLUBLE SOLDER PASTE

DESCRIPTION

ALPHA WS-619 lead free solder paste is completely water soluble and halide free. ALPHA WS-619 is designed for both stencil and dispensing applications in surface mounting processes where aqueous post reflow cleaning is required.

FEATURES & BENEFITS

- Minimal foam is generated from cleaned flux residues in recirculating post-cleaning equipment.
- High Reflow Tolerance using a variety of reflow profiles & a wide temperature range.
- Excellent wetting characteristics on all types of copper protective coatings (including OSPs).
- Compatible with either nitrogen or air reflow.

PHYSICAL PROPERTIES

- Alloys: SAC405 (95.5%Sn/4.0%Ag/0.5%Cu), SAC305 (96.5%/Sn 3.0%Ag 0.5%Cu)
- Rheology: Stencil printing and dispensing
- Powder Size: Type 3 (for stencil)
  Type 5 (for dispensing)

APPLICATIONS

Formulated for standard and fine pitch printing. ALPHA WS-619 is suitable for ultra fine pitch applications when used in conjunction with ALPHA CUT Laser Cut Stencils (up to 16 mils pitch). This paste is also designed for dispensing.

SAFETY

While the ALPHA WS-619 flux system is not considered toxic, its use in typical reflow will generate a small amount of reaction and decomposition vapors. These vapors should be adequately exhausted from the work area. Consult the MSDS for additional safety information.

SHIPPING AND STORAGE

ALPHA WS-619 is shipped in thermally controlled boxes and should be stored refrigerated upon receipt at 32^0 - 50^0F (0^0 - 10^0C). ALPHA WS-619 should be permitted to reach room temperature before unsealing its package prior to use.

Revised: 6/5/08

Cookson Electronics

ALPHA WS-619 TECHNICAL DATA

Physical Properties

Items	ALPHA WS-619 SAC 305/405 88.5-3-M21 (stencil printing)	ALPHA WS-619 SAC 305/405 86-5-M10 (dot dispensing)
Appearance (flux residues after reflowed)	Light yellowish color (before water washed)	Light yellowish color (before water washed)
Metal content (%)	88.5%	86.0%
Viscosity (Poise, Malcom spiral viscometer @10rpm)	Designated M21	Designated M10
Stencil life (55%RH, 22C)	>4 hours	Not applicable
Printability	Suitable for fine pitch printing applications (up to 16 mils pitch components, 15 mils circle)	Not applicable
Response to pause	Good	Not applicable
Dispensability	Not applicable	Yes

Chemical Properties

Items	ALPHA WS-619 Flux System
Halide content (IPC J-Std-004)	None by titration
Corrosivity (IPC J-Std-004)	Not applicable for water soluble solder paste

ALPHA WS-619 PROCESSING GUIDELINES

STORAGE-HANDLING

- Refrigerate to guarantee stability @ 32-50°F (0-10°C)
- Shelf life of refrigerated paste is 3 months
- Warm-up of 500g jar to room temperature (should be ~ 6 hours). Set up printer with room temperature paste. Check paste temperature with a thermometer.
- Do not remove worked paste from stencil and mix with unused paste in jar. This will alter rheology of unused paste.

PRINTING / DISPENSING

STENCIL: Recommend ALPHA CUT Laser Cut Stencil @ 0.005 inch (5 mil) thick for 0.016 inch (16 mil) pitch

SQUEEGEE: Metal (Recommended)

REFLOW

ATMOSPHERE:

- Clean-dry air or nitrogen atmosphere.

PROFILE (PRINTING):

- Ramp @ 1.0~2.0^{o}C/sec to 130^{o}C
- Slow ramp from 130^{o}C to 180^{o}C for 90~120 seconds
- Ramp @ 0.5~2^{o}C/sec to peak temperature 230^{o}C - 250^{o}C TAL for 40~80 seconds.
- Peak temperature: < 240^{0}C for standard OSP finish. 240 – 250^{0}C for Entek ® HT OSP finish
- Ramp down to R.T. @ 3~8^{o}C/sec.

PROFILE (DISPENSING):

- A straight ramp heating to reflow and straight ramp down to room temperature of all joints being soldered.

CLEANING

- ALPHA WS-619 is designed to be water rinsed in washing operations with minimal foaming in recirculating systems.
- The flux residues from ALPHA WS-619 are completely water soluble. This allows for more flexible washing conditions which can be board design specific.

Rev. 6-5=08