

LFS-UFP-ZQ- NON REFRIGERATION

Halogen Free Ultra Life Paste SAC 305 (Sn96.5/Ag3.0/Cu0.5)

DESCRIPTION

ZQ has been formulated to provide increased stability at room temperatures whilst maintaining excellent printing and wetting properties.

ZQ gives bright, smooth and shiny void free solder joints with low, clear, post process residues that make for reliable pin probe testing.

ZQ is particularly suitable for fine pitch printing due to reduced particle size.

BENEFITS

- Does not require refrigeration
- Prints down to at least 0.2mm
- Decreased “head-in-pillow” problem
- Constant viscosity during 5 days continuous printing
- Constant viscosity during storage for 30 days up to 50°C
- Superior wetting and spreading characteristics
- Reduces or eliminates voiding, particularly under BGA’s
- High resistance to slumping
- High humidity resistance
- High resistance to solder balling
- Extended stencil life
- 3 - 5 day tack time

Typical specification and test results

	Specification
Alloy	96.5Sn, 3.0Ag, 0.5Cu
Flux type and content	11.8% RMA
Particle size	T4.5
Alloy melting temp	217-219°C
Viscosity	180
Tensile Strength (MPa)	37
Elongation	33%
Wetting time	1.58 sec
Silver Chromate Test	No discolouration
Insulation resistance	Pass
Electromigration	Pass
J-STD-004	ROL0

APPLICATION

If the product has been refrigerated allow to warm up to room temperature (at least 4 hours) if using for the first time. Stir with a spatula for at least 30 seconds to ensure homogenisation of paste. Apply sufficient paste to stencil to allow a smooth even roll

A bead diameter of 1/2 to 5/8 inch is normally sufficient. Squeegees should be set at 60° for highest print definition. Pressure should be 1Kg/50mm of squeegee length maximum, print speed 20-150mm/sec with 0.0mm snap-off distance (on contact).

Do not store new and used paste in the same container. Once a pot of paste has been opened, replace the internal plug, re-seal and store in a cool place out of direct sunlight. Do not return to fridge once opened. The solder paste does not require refrigeration, but can be stored in a fridge if preferred, as long as the warm-up procedure is adhered to prior to use. The 'Shelf life' is 12 months unopened between 3-25°C. Unopened paste can be stored at up to 50°C for 30 days without affecting viscosity.

REFLOW

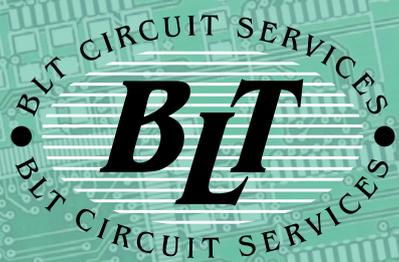
The **ZQ** paste can be reflowed using any of the two most commonly used profile types i.e RSS (Ramp-Soak-Spike) and RTS (Ramp-To-Spike). Please refer to Reflow Profile on page 2.

EQUIPMENT AND CIRCUIT CLEANING

BLT manufactures a range of aqueous and solvent cleaning equipment for stencils and misprinted boards. SCS/1 is particularly recommended for use with **ZQ** series solder pastes.

Post cleaning is not necessary for **ZQ** but however, should cleaning be necessary, Vigon N640 or Vigon US are recommended.

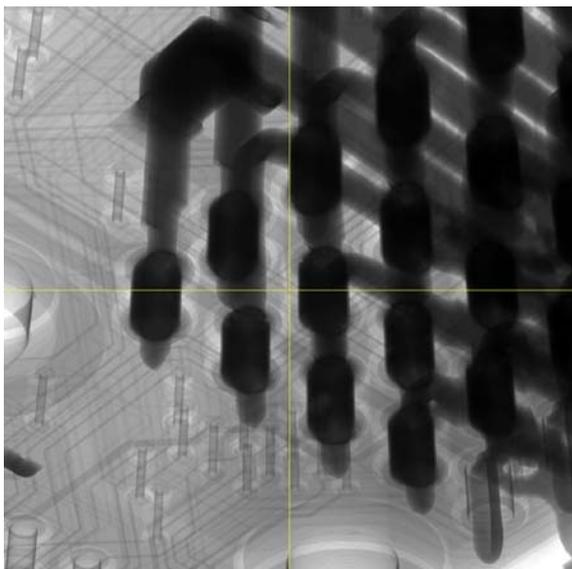




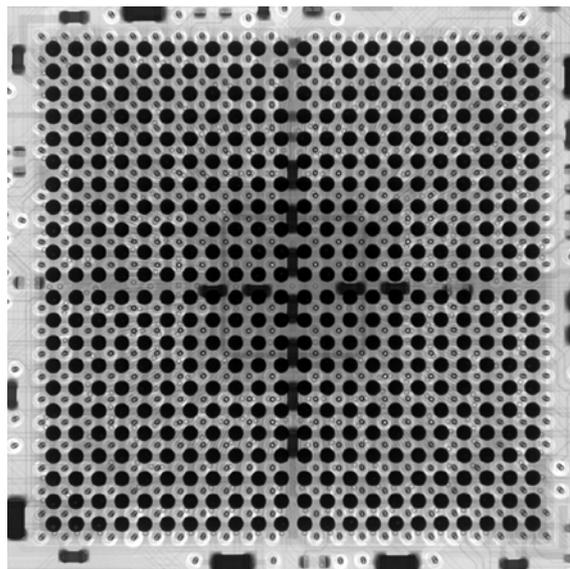
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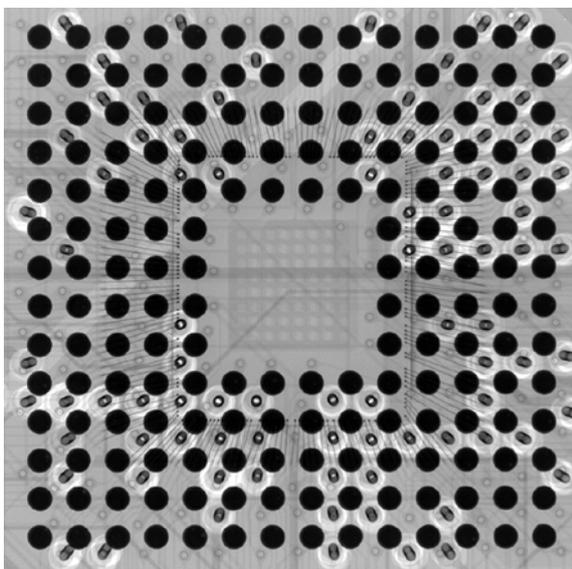
TYPICAL X-RAY EXAMPLES



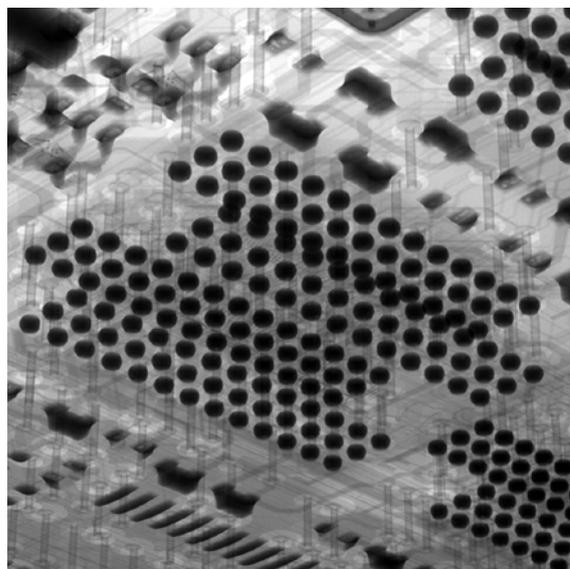
Pin In-Hole



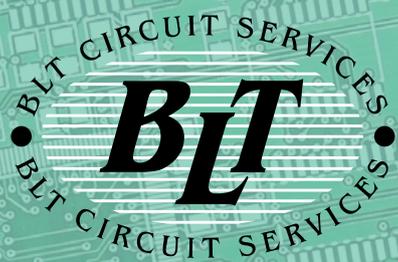
Micro-BGA



BGA



3D SMD Devices

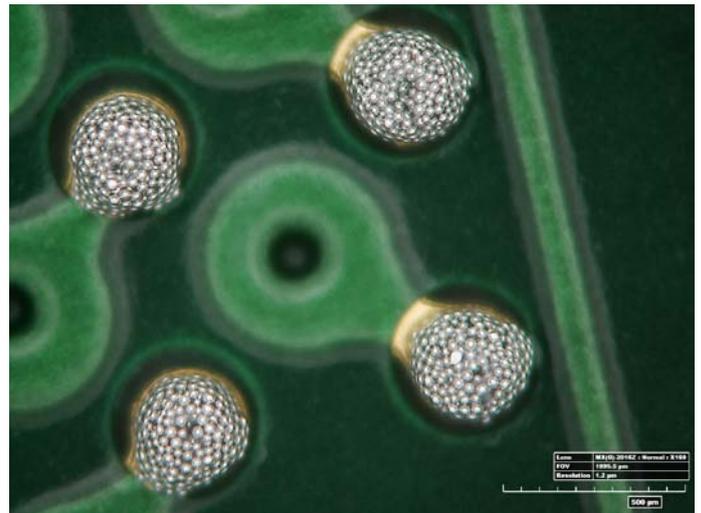
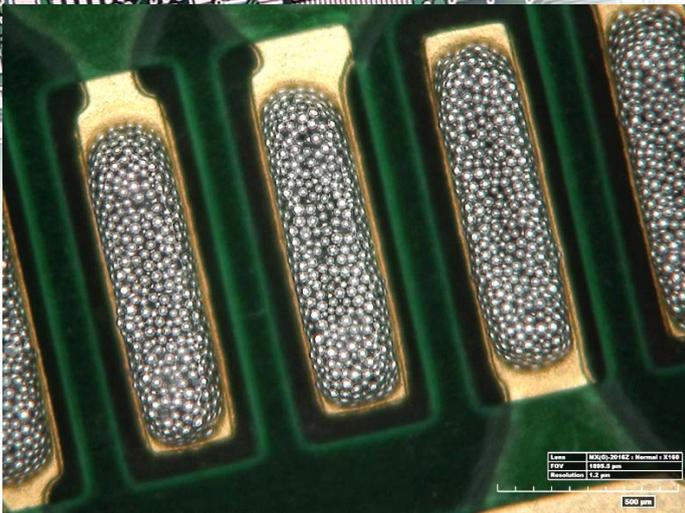


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**Halogen Free Ultra Life Paste
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SUPPORT DATA & TEST RESULTS

Printability



Type 4.5 giving excellent printing definition.

Recommended Reflow Profile

Typical Profile length 3-4.5 minutes

Initial heating rate 1-4°C

Soak time from 150-180°C 60-90 secs or 60-120 seconds if using a faster initial heating rate to 170°C Ramp

From 180°C to peak 2-3°C per second

Time above 220° C 30-90 seconds

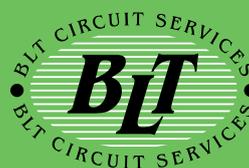
Peak temp 240-260°C* *To accommodate higher peak component profiles e.g. some BGAs and LEDs

Cool down 2-5°C per second

Please find two examples of a typical RSS and RTS with the ZQ PLUS paste on the following page.

Warranty

All reasonable endeavours have been made to ensure that the information contained in this data sheet is accurate, but it is submitted on the express condition that BLT Circuit Services Ltd. shall be under no liability whatsoever in respect thereof or for any loss, injury, damage or liability of whatsoever nature arising, suffered or incurred as a consequence of its use.

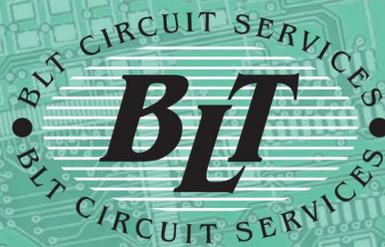


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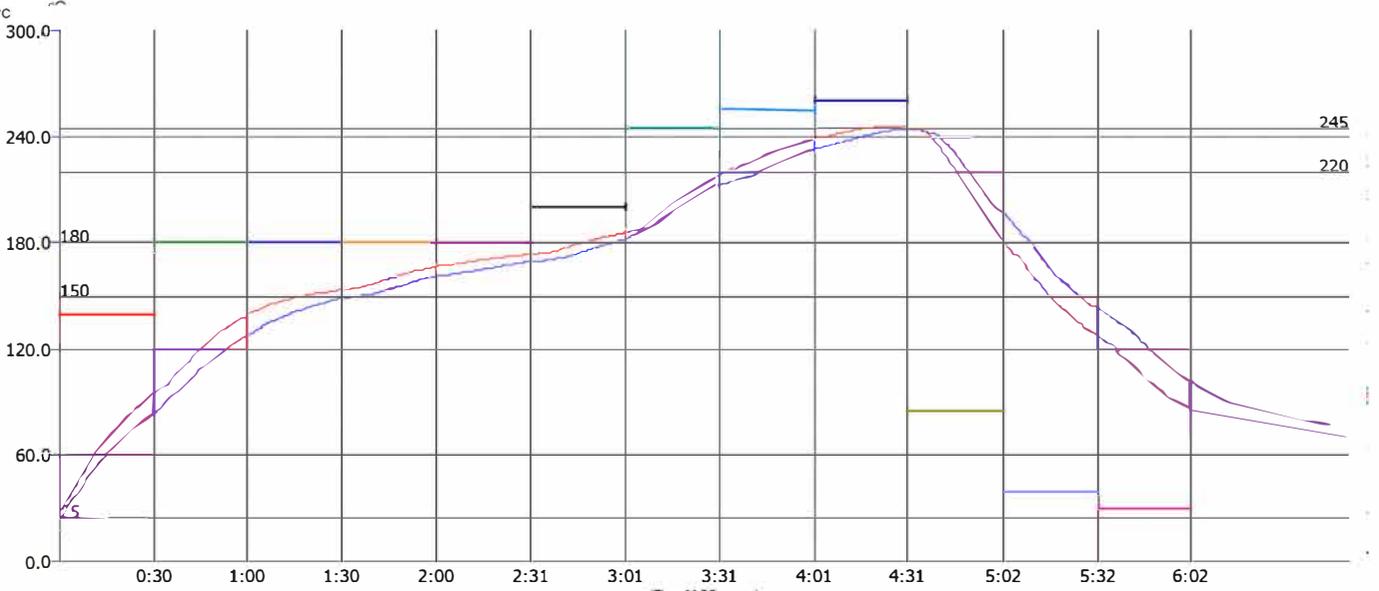
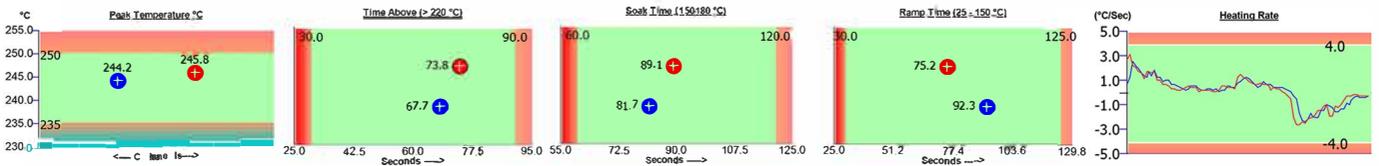
Web www.bltcircuitservices.co.uk



LFS-UP-ZQ-NON REFRIGERATION

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RAMP SOAK SPIKE DATA



Process Parameters		
Solder Type: ZQ Plus T4.5 Powder		
	Min	Max
Soak Time (150-180°C)	60 seconds	120 seconds
Time Above (t>220°C)	60 seconds	90 seconds
Peak Temperature	235°C	250°C

Zone Setpoints (Machine: : Vitronics myflow) Recipe: 0007 10X-SP												
70.00 cm/min (N2)	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	Z11	Z12
Top Heater (°C)	140	180	180	180	180	200	245	255	260	85	40	30
Bottom Heater (°C)	140	180	180	180	180	200	245	255	260	85	40	30

Channel	Process data									Zone Slopes (°C/Sec)													
	Peak	t5-150	t=150	t=180	150-180	t=220	t>220	t>245	t=Peak	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	Z11	Z12	MAX+	MAX-
1	244.2	92.3	96.0	177.7	81.7	220.4	67.7	0.0	4:32.2	2.5	1.7	1.0	0.5	0.3	0.5	1.2	0.8	0.5	-2.3	-2.3	-1.7	2.5	-2.3
2	245.8	75.2	78.9	168.0	89.1	210.2	73.8	10.0	4:24.4	3.1	2.1	0.7	0.5	0.2	0.5	1.5	0.8	0.4	-2.7	-2.4	-1.8	3.1	-2.7

Delta	1.6	17.1	17.1	9.7	7.4	10.2	6.1	10.0
Mean	245.00	83.75	87.45	172.85	85.40	215.30	70.75	5.00

0.6	0.4	0.3	0.0	0.1	0.0	0.3	0.0	0.1	0.4	0.1	0.1	0.6	0.4
2.80	1.90	0.85	0.50	0.25	0.50	1.35	0.80	0.45	-2.50	-2.35	-1.75	2.80	-2.50