

Medium Melting Point **Lead Free** Solder Paste

SB6N58-A730-2

■ Features

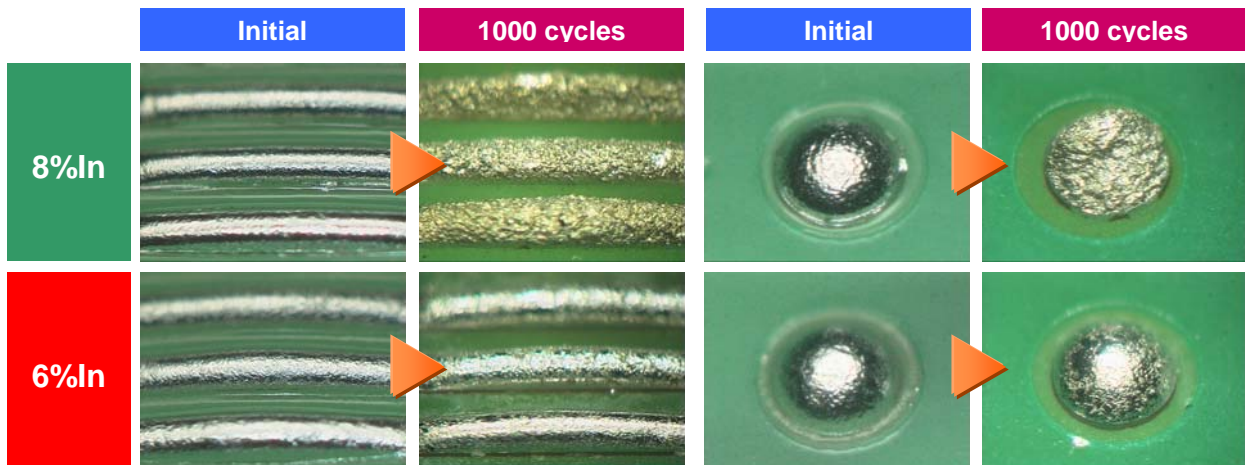
- 1) Realizes **LOW REFLOW TEMPERATURE** than SnAgCu solder paste.
- 2) Specially developed flux system **PREVENTS EXCESSIVE REACTION** with solder alloy and ensures stable and consistent performance.
- 3) **PERFECT MELTING** and **WETTING** by reflow in **AIR**.

■ Alloy is 6% indium type with less structural transformation

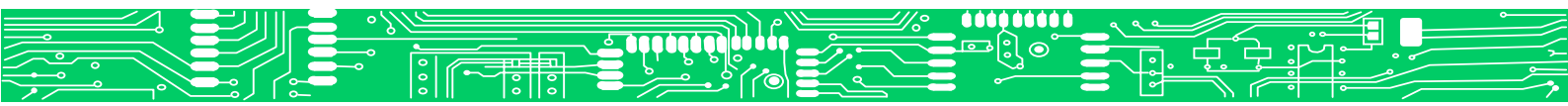
Indium type alloy structure has a lower melting point than SnAgCu type, allowing low-temperature reflow for low heat resistance components. But a problem of the indium type alloy is large deformation of structural shape due to heat. This is attributable to growth of compound inside the structure and fine cracks due to occurrence of strain stress.

In developing indium type solder paste of low melting point, we investigated several types of indium type alloy composition. As to the degree of structural transformation due to thermal shock, which is a characteristic of the indium type, the higher the content of indium, the larger it is. This is because, first, the precipitation transformation start temperature of Sn-in alloy after soldering is lower than solidus (8% indium product: about 120°C, 6% indium product: about 150°C), the precipitation transformation start temperature becomes lower when the content of indium is large and the melting point is lower. For this reason, in heat cycle testing, if the upper limit temperature is close to this precipitation transformation start temperature, the solder considerably deforms.

Koki, therefore, adopted “Sn3.5Ag0.5Bi6In” with less transformation among alloy compositions of low melting point.

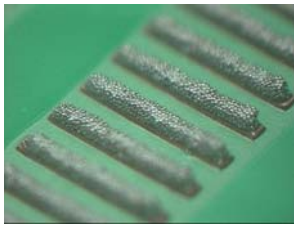


- Heat cycle condition : -40 ~ +125°C 30min./cycle after removal of flux residue

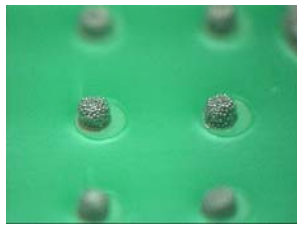


Printability

(Continual printing at 50mm/sec. stencil 120 μm laser cut)

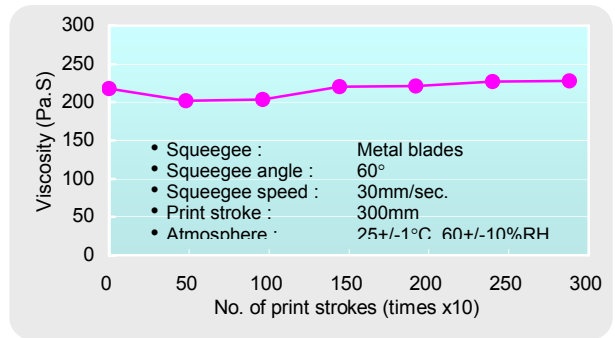


0.4mm pitch
(10th print; parallel)

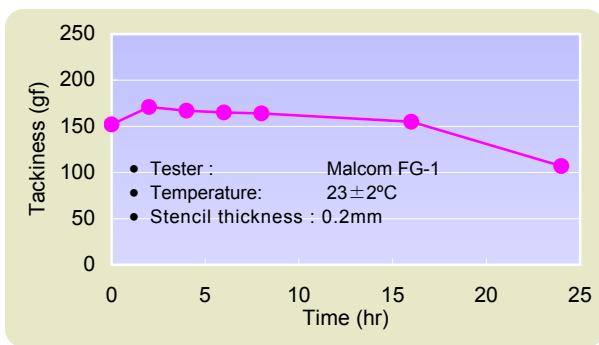


0.30 mm diameter
(10th print; CSP pattern)

Viscosity variation in continual print

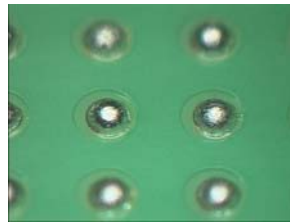


Tack time

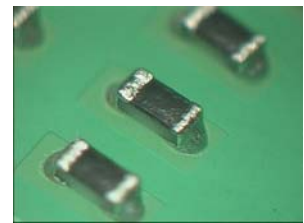


Solder wetting

(After 8 hours kneading on sealed-up stencil)

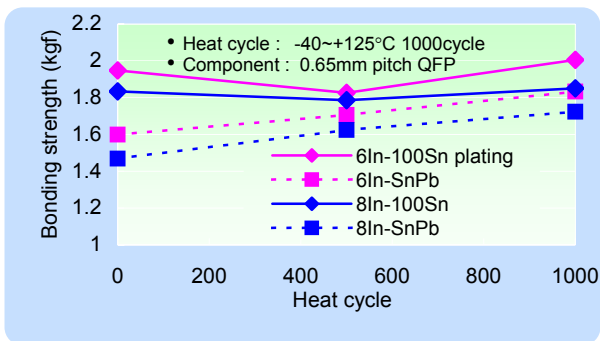


0.3mm diameter



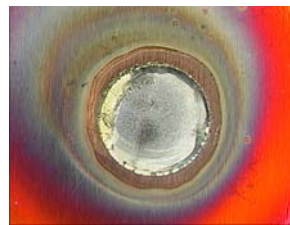
0603 chip (100Sn)

Bonding strength



Solder spreading

(Hot plate-150°C×60sec.+Solder bath 240±2°C for 5sec.)

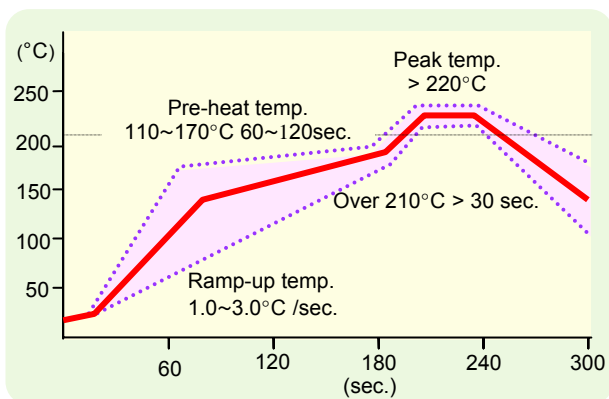


Cu



Nickel

Recommended reflow profile



Specifications

Application		Printing - Stencil
Alloy	Composition (%)	Sn90, Ag3.5, Bi0.5, In6
	Melting point (°C)	202 - 211
	Particle size (μm)	20 - 38
Flux	Halide content (%)	0.2
	Flux type	ROL1
Product	Flux content (%)	11.5
	Viscosity*1 (Pa.S)	220
	Copper plate corrosion*2	Passed
	Solder spread factor (%)	> 85
	Tack time	> 24 hours
	Shelf life (below 10°C)	3 months

*Specifications are subject to change

KOKI COMPANY LIMITED

32-1, Senju Asahi-cho, Adachi-ku, Tokyo 120-0026
Tel : (03) 5244-1521 Fax : (03) 5244-1525 www.ko-ki.co.jp