e LEAD FREE

Stabilized tin-copper-nickel Eutectic Alloy

SN100C

Nihon Superior's **SN100C** has been developed for lead-free wave soldering. With more than 400 lines in commercial production, some for nearly 5 years, and more than 40 million boards in service **SN100C** is the most proven lead-free wave solder alloy available today.

Image to follow

Wave Soldered with SN100C

The patented Ni addition to the Sn-Cu eutectic ensure:

- No shorts on QFP to 0.65mm, 100 pins
- Smooth bright fillets
- Good penetration of through holes
- No joint failures in more than five years of field service
- Can be used in air
- Dose not require special pot materials
- Easy to manage in solder pot
- Lower cost than silver containing alloys

Patent for SN100C has been applied for in 33 countries and which is partially obtained in Japan, U.S.A. Taiwan and Singapore. (JAP PAT. No.3152945/US PAT. No. 6180055/TAIWAN PAT. No. 123376/SINGAPORE PAT. No. 69432)

Grosvenor Electronic Supplies (UK), Priory Tec. Park, Saxon Way, Hessle, East Yorkshire, HU13 9PB. Tel: 01482 627327, Fax: 01482 627328

APPLICATIONS

Nihon Superior's **SN100C** is designed to be substituted for tin/lead solder alloy in the wave soldering process. It can be used in existing soldering equipment just as 63/37 tin lead.***** Minor adjustments to soldering techniques will be required but the resulting soldered joints will perform as well as tin/lead soldered joints.
Recommended soldering temperature is between 250-260°C

Compared with tin/lead solder, the leaching rate of copper in the molten solder is about half of that of 63/37 tin/lead. Copper levels are further controlled with the addition of **SN100Ce.**

SN100C provides creep strength more than 1000 times (load 1kg, 150°C). It has been reported that the sound quality audio system is better because of higher electrical conductivity.

Recommended Adjustments

Eliminate cold air

- Closed system to minimize entry of cold air
- Adjust damper to retain heat
- Ensure cold air does not blow back to wave solder

Preheat temperature

- Capacity to preheat to 100-130°C
- Preheater with tunnel will be required to retain heat

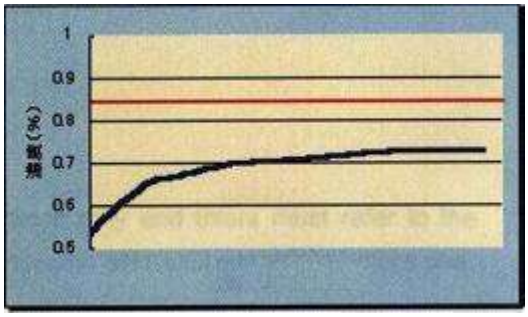
Minimise the distance from preheater to first wave

- Minimise the distance between waves
- Contact time: 3-4 sec.
- No special flux is requires, but its activity must survive to the exit area

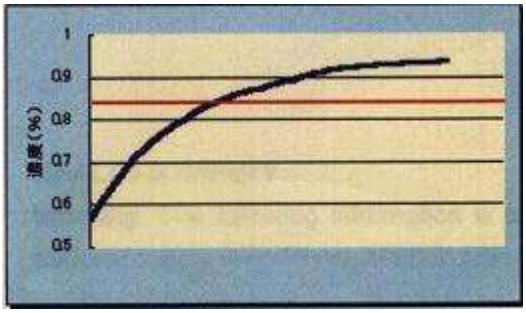
Managing the copper content of SN100C Wave Soldering Bath

During use copper is dissolved, from the boards and components, into the solder bath. If the copper content of the **SN100C** in the solder bath exceeds 0.85% there is likely to be an increase in the incidence of bridges, icicles and other defects. Nihon Superior have devised a simple but effective method of keeping the copper content in the optimum range of 0.6-0.85%. to replace solder carried off on the soldered boards, a top-up alloy with lower copper content, **SN100Ce** is used. To replace solder removed during the skimming of dross the standard SN100C alloy can be used. Grosvenor provides solder bath analysis to ensure that the copper content is within the recommended range.

***Consult equipment manufacturer for any special requirements.**



a) Cu content, when **SN100C** is used for top up



b) Cu content, when **SN100Ce** is used for top up

Product Range

Available in Cast Bar, Extruded Bar, Solid Solder Wire for Auto Feed Systems.

The specifications of SN100C & SN100Ce

		Contents (mass%)	
	Elements	**SN100C**	**SN100Ce**
Ingredients	**Sn**	**Balance**	**Balance**
	Cu	**0.6 ± 0.1**	**0.2 ± 0.2**
	Ni	*	*
Impurities	**Pb**	**0.05 max**	**0.05 max**
	Ag	**0.05 max**	**0.05 max**
	Bi	**0.03 max**	**0.03 max**
	Zn	**0.002 max**	**0.002 max**
	Sb	**0.05 max**	**0.05 max**
	As	**0.03 max**	**0.03 max**
	Fe	**0.02 max**	**0.02 max**
	Al	**0.002 max**	**0.002 max**
	Cd	**0.002 max**	**0.002 max**
Properties	**Melting Point**	**227°C**	**227-229°C**
	S.G.	**7.4**	**7.4**

For further information, please refer to the technical data & MSDS

Health & Safety

Warning: The following information is for guidance only and users must refer to the Material Safety Data Sheet (MSDS) relevant to the specific SN100C/SN100Ce before use.

Fume: Ensure adequate ventilation to ensure that operators are not exposed to the fumes released during flow soldering.

Heat: Molten solder is hot and dangerous. Gloves and goggles should be worn during handling.

Protection and Hygiene: Eating, drinking and smoking should not be permitted in the working area. Hands should be washed with soap and warm water after handling solder, especially before eating.