



# PRODUCT DATA SHEET

## Nihon Superior SN100C® Lead-Free Bar Solder



### CHEMICAL SPECIFICATION

Element	NT-SN100C (%)	NT-SN100Ce (%)
Tin (Sn)	Balance	Balance
Copper (Cu)	0.5 - 0.7	<0.4
Germanium (Ge)	0.004 - 0.01	0.004 - 0.01
Nickel (Ni)	0.04 - 0.07	0.04 - 0.07
Silver (Ag)	Max. 0.050	Max. 0.050
Aluminum (Al)	Max. 0.001	Max. 0.001
Arsenic (As)	Max. 0.03	Max. 0.03
Gold (Au)	Max. 0.05	Max. 0.05
Bismuth (Bi)	Max. 0.03	Max. 0.03
Cadmium (Cd)	Max. 0.002	Max. 0.002
Iron (Fe)	Max. 0.02	Max. 0.02
Indium (In)	Max. 0.05	Max. 0.05
Lead (Pb)	Max. 0.05	Max. 0.05
Antimony (Sb)	Max. 0.05	Max. 0.05
Zinc (Zn)	Max. 0.001	Max. 0.001

### PHYSICAL PROPERTIES

Melting Temp (°F).....	440.6
Melting Temp (°C) .....	227
Density (lg/cm <sup>3</sup> ) .....	7.4
Expansion (%).....	48
Deformation in the Traction .....	> 300 hours
Electrical Conductivity (μΩm).....	40.09 (with 1kg load at 180°C)
Resistance to Traction (N/mm <sup>2</sup> ).....	32.3
Thermal Fatigue .....	> 1000 Cycles (-40/+80°C)

*your partner for soldering solution*



Limits are % max unless otherwise shown as range or stated otherwise

Except where otherwise indicated, the component elements in each alloy shall deviate from their nominal mass percentage by not > 0.10% of the alloy mass when their nominal percentage is ≤ 1.0%; by not > 0.20% of the alloy mass when their nominal percentage is > 1.0% to ≤ 5.0% or by not > 0.50% when their nominal percentage is > 5.0%.

Developed and patented by Nihon Superior, the Sn100C alloy is currently being used in thousands of wave soldering machines around the world and has proven its reliability in products exposed to the most severe service environments. Nathan Trotter supplies the Sn100C bar in extruded form and also the Sn100CE for use as a replenisher bar when copper levels are found to be elevated.

### Features

- The trace addition of Ni means fewer shorts and no shrinkage defects
- Ni-stabilized intermetallic layer inhibits copper erosion
- Reliable in harsh environments
- High ductility ensures long service life of joints subjected to cyclic strain
- Sn100C is formulated for minimal generation of dross

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**NATHAN TROTTER IS ISO 9001:2008 REGISTERED**



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### APPLICATION

Nathan Trotter solder bar performs favorably in wave soldering, solder dip, and solder coating applications. For solder plating applications, please refer to Nathan Trotter ANODES.

### RECYCLING / RECLAIM

Tin Technology and Refining ([www.tintech.com](http://www.tintech.com)) is the recycling/reclaim division of Nathan Trotter. Tin Tech works in conjunction with Nathan Trotter solder bar customers to recycle dross, drippings, residues, paste, and other solder scrap that is generated from the use of solder. Tin Tech operates as a permitted, environmentally responsible smelter with full reduction capabilities enabling optimal recoveries for all types of solder scrap material.

### BAR SIZE/SHAPE

Standard sizes typically vary by application.

Application	Bar Description	Approx. Weight
Wave (PCB/THT)	KG Bar, Tri-Bar, Feeder Bar	2.2 lbs, 2.2 lbs, 20 lbs
Radiator	Ingot, Handy Bar, Notch Bar	40 lbs, 20 lbs, 7 lbs
Industrial (Battery)	Ingot, Finger, Shot	60 lb, 1 lb, 2 grams

### PACKAGING

Packaging can be made to customer specification. Standard packaging is either boxed (25 lbs or 50 lb boxes) or in the case of larger ingots, stacked and wrapped on a pallet. Each box is labeled with the alloy name, lot number, date of manufacture, weight of packaging unit, and any customer specific information required. Each lot will be accompanied by a certificate of analysis showing lot-specific chemistry.

### POT MAINTENANCE

In conjunction with the use of Nathan Trotter solder bar, NT offers a complimentary solder pot analysis program to ensure the user's application remains at optimal chemistry. In-house OES spectrometers are used for a timely turnaround for customer samples. It is recommended that this program is utilized regularly to verify pot chemistry is within operating specification.

### STORAGE, HANDLING, SHELF LIFE

Nathan Trotter Solder Bar has an indefinite shelf life when stored in a dry, non-corrosive environment. Bars and packages should always be handled with care as material is naturally heavy.

### HEALTH AND SAFETY

This product, during handling or use, may be hazardous to your health. Read the Safety Data Sheet (SDS) and warning label prior to use. SDS can be downloaded from our home page [www.nathantrrotter.com](http://www.nathantrrotter.com)

***For Sales or Technical Assistance, contact Nathan Trotter & Co:  
Info@nathantrrotter.com or 610-524-1440***

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