



## 99C Lead-Free Bar Solder

### Physical Properties

Melting Temp (°F)	441
Melting Temp (°C)	227
Density (lbs/in <sup>3</sup> )	0.301
Specific Gravity (g/m <sup>3</sup> )	7.28
Shear Strength (MPa)	37
Tensile Strength (tons./in. <sup>2</sup> )	54
Izod Impact Strength (J)	20.30
Thermal Conductivity ( W/m-k)	40.09
Elastic Modulus (GPa)	31.50
Electric Resistivity (10-9 ohm-m)	144

### Chemical Specifications

ELEMENT	JSTD-006C (%)
Tin (Sn)	98.8 - 99.8
Silver (Ag)	0.10
Cadmium (Cd)	0.002
Lead (Pb)	0.07
Aluminum (Al)	0.005
Copper (Cu)	0.60 - 0.80
Arsenic (As)	0.03
Iron (Fe)	0.02
Zinc (Zn)	0.003
Gold (Au)	0.05
Indium (In)	0.10
Antimony (Sb)	0.20
Bismuth (Bi)	0.10
Nickel (Ni)	0.01

### Additional solder alloys manufactured by Nathan Trotter

#### Lead-Free Alloys

Sn96.5/Ag3.0/Cu0.5 (SAC305)  
 Sn99/Ag0.3/Cu0.7 (SAC 0307)  
 Sn100 (Tin Bar)  
 Sn95/Sb5  
 Sn97/3Cu

#### Leaded Alloys

Sn60/Pb40  
 Sn62/Pb36/Ag2  
 Sn30/Pb70  
 Sn20/Pb80  
 Sn40/Pb60

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%.

#### Main Office

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#### Quality Metals Since 1789

ISO Certified Since 1997 / Tin / Tin Alloys / Solder / Nonferrous Metals



#### 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.

#### BAR SIZE/SHAPE

Standard sizes typically vary by application.

Application	Bar Description	Approx. Weight
Wave (PCB/THT)	KG Bar, Tri-Bar, Feeder Bar	1 lb, 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.

#### 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.

#### 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](mailto:Info@nathantrrotter.com) or 610-524-1440**

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