

**Nathan Trotter Tin Anodes**

Tin Anodes	Type	Packaging
1x4, 1x3	Extruded	Palletized
Ovals	Extruded	Palletized
D-Shapes	Cast or Extruded	Palletized
Stars: 10 pt, 12 pt, 16 pt	Extruded	Palletized
Waffles	Extruded	Palletized
Balls: 1/2", 3/4", 1", 2"	Extruded/ Cold-headed	50 lb box, 50 lb pail, 100 lb pail, 500/1000/ 2000 lb drum/crate/ supersack
Nuggets: 1/2", 3/4", 1"	Extruded	50 lb box, 50 lb pail, 100 lb pail, 500/1000/ 2000 lb drum/crate/ supersack
Rod	Extruded	Palletized

Tin (Sn) Anodes**Physical Properties**

Melting Temp (°F) (Solidus)	450
Melting Temp (°C) (Solidus)	232
Density (lbs/in ³)	0.264
Specific Gravity	7.30
Tensile Strength (tons/in ²)	0.94
Brinell Hardness HB	4.6

Chemical Composition (ASTM B339)

ELEMENT	Grade A Tin (%)	Low Lead Tin (%)	High Purity Tin (%)
Tin (Sn)	99.85 min	99.90 min	99.99 min
Copper (Cu)	0.04	0.04	0.002
Bismuth (Bi)	0.03	0.03	0.002
Nickel (Ni)	0.005	0.005	0.002
Silver (Ag)	0.01	0.01	0.002
Cobalt (Co)	0.005	0.005	0.002
Arsenic (As)	0.05	0.05	0.002
Lead (Pb)	0.05	0.005	0.005
Cadmium (Cd)	0.001	0.001	0.001
Iron (Fe)	0.01	0.01	0.002
Antimony (Sb)	0.04	0.04	0.005
Zinc (Zn)	0.005	0.005	0.002

APPLICATION

Nathan Trotter manufactured anodes perform favorably in reel-to-reel, rack, and barrel plating lines. Nathan Trotter hanging anodes and basket anodes are the industry leader in plating performance, consistency, and efficiency.

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%.



Nathan Trotter

Trusted for Over 200 Years

Product Data Sheet

Tin (Sn) Anodes

Other Anodes Supplied by Nathan Trotter

Nathan Trotter manufactures or distributes other anodes to compliment its core business of tin anodes. Other anodes supplied include:

Types of Anodes	Size/Description	Packaging
Nickel	Xstrata D Crowns, Inco S Pellets, Nickel Crowns, Nickel 1x1, Nickel 4x4	50 lb box, 551 lb drum, 2204 lb crate
Phos Copper (Acid)	15 mm Ball, 3/4" Ball, 1" Ball, 2" Ball, 3/8" x 1/2" Nugget	50 lb box, 551 lb drum, 2204 lb crate
Oxygen-Free Copper	3/4" Ball, 1" Ball, 2" Ball, 3/4" Nugget, 1" Nugget	50 lb box, 551 lb drum, 2204 lb crate
Zinc	2" Ball, 1" x 4" x Length	250 lb Drum, Palletized
Cadmium Balls	2" Ball	50 lb pail, 100 lb pail, 500 lb drum, 2000 lb drum
Tin/Lead Solder	See Tin Anode Sizing	See Tin Anode Packaging

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.

RECYCLING / RECLAIM

Tin Technology and Refining (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 Anodes have 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.nathantr Trotter.com

For Sales or Technical Assistance, contact Nathan Trotter & Co:
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