



Belmont
M E T A L S I N C.

330 Belmont Avenue Brooklyn, N.Y. 11207
(718) 342-4900 FAX: (718) 342-0175

DATA SHEET

Sn-1

Sn: Belmont Elemental Tin

Typical Uses

Tin is alloyed with other elements in babbitts for bearings; pewter and jewelry alloys; low melting alloys; type metals; diecasting alloys; solders; titanium- and zirconium-base alloys; glass sealing alloys; and bronzes. Pure tin is used for modifying cast iron, for plating, and in chemical processes. Tin plate is used on cans, while tin coatings are used on cooking utensils, copper wire, and fasteners.

Chemical Composition

Element	ASTM B339 Grade A	ASTM B339 Ultra Pure Grade	QQ-T-371C	UNS L13002	UNS L13004
Tin, Min.	99.85	99.95	99.80	99.98	99.95
Aluminum, Max.	-----	-----	0.001	-----	-----
Antimony, Max.	0.04	0.005	0.04	0.008	0.02
Arsenic, Max.	0.05	0.005	0.04	0.0005	0.01
Bismuth, Max.	0.030	0.015	0.015	0.001	0.01
Cadmium, Max.	0.001	0.001	0.001	0.001	0.001
Copper, Max.	0.04	0.005	0.03	0.002	0.02
Iron, Max.	0.010	0.01	0.015	0.005	0.01
Lead, Max.	0.05	0.001	0.05	0.010	0.02
Nickel+Cobalt Max.	0.01	0.010	0.015	0.005	0.01
Sulfur, Max.	0.01	0.01	0.003	0.002	0.01
Zinc, Max.	0.005	0.005	0.001	0.001	0.005
Silver, Max.	0.01	0.010	0.01	-----	-----
*Other Impurities	-----	0.010	-----	-----	-----

*Maximum per impurity not listed above

UNS NUMBERS

L13006	Sn 99.80 min., As 0.05 Max.	L13010	Sn 99.65 Min.
L13007	Same as QQ-T-371	L13012	Sn 99.50 Min.
L13008	Same as ASTM B339, Grade A	L13014	Sn 99.00 Min.

ACS Reagent Grade Tin

Antimony, 0.02 Max.; Arsenic, 0.0001 Max.; non volatile with hydrobromic acid & bromine, 0.02% Max.

Other Tin Products

Belmont also stocks 99.99%(4-9's) Grade Tin, which can be provided in many of the forms shown on the reverse.

Other grades of tin and tin alloys are also available.

---Please See Reverse For Additional Information---

Belmont: The Non Ferrous Specialists
For maximum variety in non ferrous metals, alloys, formulations, and shapes.
Custom shapes and compositions available.

Forms Available and Typical Sizes

(not all grades available in all forms)

Pigs, 50 to 100 lbs	Shot, 8 x 20 Mesh	Anodes, ovals & flat
Ingot, 2 section x 5 lb	Granular, 20 to 60 Mesh	Feathered, 4 x 20 Mesh
Bar, 1 lb, 2 lb & 1/4 lb	Powder, 100 Mesh	Castings, To Print
Mossy, 1" x 8 Mesh	Wire, Various Diameters	Sheet & Rod, To Size

Mechanical Properties

Tensile Strength	2100 psi at 23°C(73°F)
Elongation	57% in 1in. at 23°C(73°F)
Brinell Hardness	3.9 HB at 20°C(68°F)
Modulus of Elasticity	4240 kg / mm ² (6.0 to 6.5 x 10 ⁶ psi)
Modulus of Rigidity	2.4 x 10 ⁶ psi

Physical Properties

Melting Point	231.9°C(449.4°F)
Boiling Point	2270°C(4120°F)
Density	7.29 g / cc(0.263 lbs / in ³) at 15°C(59°F)
Linear Coefficient of Thermal Expansion	23.8 x 10 ⁻⁶ / °C at 25°C(77°F)
Specific Heat	222 J / kg K (53 x 10 ³ BTU / lb/°C)
Latent Heat of Fusion	14.5 cal / g (25.6 BTU / lb)
Latent Heat of Vaporization	570 cal / g (1.03 x 10 ³ BTU / lb)
Thermal Conductivity	1.5 cal / cm ² / cm / sec / °C
Electrical Conductivity	15.6% IACS
Electrical Resistivity	11.0 microhm-cm at 0°C(32°F)
Volume Change on Freezing	2.8% Contraction

General Properties

Atomic Number, 50; Atomic Weight, 118.69

Safety Consideration: The inhalation of inorganic tin fumes or dust may cause an apparent benign pneumoconiosis called stannosis, which is reported not to be disabling.

Note: The information contained in this data sheet is the most accurate in our possession at the time of publication, and is based on our effort to meet accepted industry references, standards, and specifications. However, Belmont cannot assume responsibility for in-service performance of these products due to our lack of control over, or supervision of, their use.