>>**Entry Name: Tin**
Synonym(s): Stannum (L.)

CAS Registry Number: 7440-31-5
Related CAS Registry Numbers(s): 12597-39-6 15700-33-1 22537-50-4 22541-90-8 26288-30-2 53237-30-2
Sn

Molecular Formula: Sn
Molecular Weight: 118.71
Accurate Mass: 117.9022
Percentage Composition: Sn 100.00%

Essential trace element. Abundance: 2.1 ppm (earth's crust); 3 x 10^{-3} ppm (sea water)
Source/Synthesis: Cassiterite (SnO_2) is the only important ore, but other, sulfide ores e.g. stannite, sometimes worked. Oxide is smelted, the impure metal refined electrolytically
Use/Importance: Important as coatings and alloys, e.g. Bronzes (with Cu), *Pewter* (with Sb), and type metals (with Pb, Sb, Bi). Radioactive ^{110}Sn used as a tracer
Melting Point: Mp 232°
Boiling Point: Bp 2625°

Aldrich: 24343-4
Fluka: 96523
Sigma: T1036

>>**Variant:** α-form
Synonym(s): Grey tin

Molecular Formula: Sn
Molecular Weight: 118.71
Accurate Mass: 117.9022
Percentage Composition: Sn 100.00%

Physical Description: Reacts with conc. HCl (aq.) → $SnCl_4$
Other Data: d^{20} 5.77 g cm^{-3}. Transforms into the β-form at 13.2°

>>**Variant:** β-form
Synonym(s): White tin

Molecular Formula: Sn
Molecular Weight: 118.71
Accurate Mass: 117.9022
Percentage Composition: Sn 100.00%

Physical Description: Soft, pliable, silvery-white metal. Reacts with conc. HCl (aq.) → $SnCl_2$. Unreactive to O_2 (film protection). Dissolves in acids and bases with liberation of H_2. Steam → H_2. Reacts with Cl_2, Br_2 in cold and F_2, I_2 on warming. Reacts vigorously with S, Se when heated
Other Data: d^{20} 7.27g cm^{-3}

>>**Variant: Tin 108**

CAS Registry Number: 24558-38-1

Source/Synthesis: Prod. from Cd (α,2n)
Other Data: *I* = +0. Decays by orbital electron capture or $\beta^{(+)}$ emission to ^{108}In

>>**Variant: Tin 111**

CAS Registry Number: 15720-78-2

Source/Synthesis: Prod. from Cd (α,3n), or ^{112}Sn (γ,n)
Other Data: *I* = + 7/2 ; μ = +0.61 μ_N. Decays by orbital electron capture or $\beta^{(+)}$ emission to ^{111m}In

>>**Variant: Tin 112**

CAS Registry Number: 15125-53-8

Other Data: *I* = +0