



**Belmont**  
M E T A L S I N C.

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## DATA SHEET

L-1018 A

### BELMONT ELEMENTAL ANTIMONY

#### Typical End Uses

Belmont Elemental Antimony, available as regular-grade or high-grade, is a silvery-white crystalline solid. It is suitable for use as an alloying element in lead alloys used for applications such as battery grids, printers' type, solder, bearings, cable sheathing, and ammunition; as an alloying element for tin alloys, such as those used for pewter and costume jewelry; as a dezincification-resistance agent in copper-base alloys; as an addition to ductile iron to assist in forming nodular graphite; and as an addition to gray iron, where it acts as a powerful pearlite performer. It may also be suitable for use as a component of III of III-V semiconductors such as InSb, AISb, and BaSb, and as an alloying ingredient in thermoelectric alloys.

#### Chemical Composition

Regular-grade Antimony has a typical analysis of antimony, 99.65% min.; lead, 0.30% max.; arsenic, 0.15% max.; sulphur, 0.06% max.; iron, 0.03% max.; copper, 0.05% max.

High-grade Antimony has a typical analysis of antimony, 99.85% min.; lead, 0.10 max.; arsenic 0.05% max.; sulphur, 0.4% max.; iron, 0.03% max.; copper 0.01% max.

#### Forms and Sizes Available

Belmont Elemental Antimony is available in various size as granular, lumps, pieces, powder, slab, and special shapes.

### BELMONT ANTIMONY ALLOYS

Belmont offers a variety of standard and custom antimony alloys for casting applications, Standard and special compositions, including combinations, are available for:

Antimony-Arsenic  
Antimony-Copper

Antimony-Lead  
Antimony-Tin

#### Forms and Sizes Available

Belmont Antimony Alloys are available in various sizes as anodes, bar, ingot, lumps, mossy, pigs, powder, rod, sheet, shot, slab, wire, and special shapes.

### BELMONT ANTIMONY SULFIDE

Belmont offers 70% antimony sulfide suitable for a variety of chemical applications. It is available as lumps or powdered oxide.

- See Reverse -

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Belmont: The Non Ferrous Specialists

For maximum variety in non ferrous metals, alloys, formulations and shapes.

Custom shapes and compositions available.



## Sb:BELMONT ELEMENTAL ANTIMONY

### Mechanical Properties

Tensile Strength: 11.40 MPa; 1560 p.s.i. (1.1 kg/mm<sup>2</sup>)  
Brinell Hardness Number: 30 to 58  
Elastic Modulus: Tension, 77.759 GPa; shear, 19GPa  
Modulus of Elasticity: 11,300,000 p.s.i. (7884 kg/mm<sup>2</sup>)  
Torsion Modulus: 2,800,000 p.s.i. (1953 kg/mm<sup>2</sup>)

### Physical Properties

Melting Point: 1167°F(630.7°C)  
Boiling Point: 2889°F(1587°C)  
Density: 6.62 g/cc (0.239 lbs/in<sup>3</sup>) at 68°F(20°C)  
Linear Coefficient of Thermal Expansion: 8 to 11 m/m K at 68°F(20°C)  
Specific Heat: 207 J/kg°K at 77°F(25°C)  
0.049 cal/g(1.4 cal/oz)at 68°F(20°C)  
Latent Heat of Fusion: 163.17 kJ/kg; 38.3 cal/g(1095 cal/oz)  
Latent Heat of Vaporization: 1602 kJ/kg; 373 cal/g(10668 cal/oz)  
Thermal Conductivity: 25.9 Wm K; 0.045 cal/cm<sup>2</sup>/cm/sec/°C; 4.4% Ag  
Electrical Conductivity: 3.59% Ag  
Color: silvery-white  
Electrical Resistivity: 370 nohm at 32°F(0°C); 39.0 microhm-cm at 32°F (0°C)

### Corrosion Resistance

Air: Moderate general attack when air is moist and light is present  
Ammonia: resistant  
Alkalis and alkali salts: general attack  
Aqua regia: severe general attack  
Carbon dioxide: resistant  
Chlorine: severe general attack  
Hydrochloric acid: moderate attack in presence of air  
Hydrofluoric acid: resistant  
Nitric acid: severe general attack  
Sulfuric acid: severe general attack by warm, concentrated acid; resistant to cold or dilute acid.

### Safety Considerations

The eight hour average exposure limit for antimony and its compounds expressed as Sb is 0.5 mg/m<sup>3</sup>, 0.1 ppm. While metallic antimony may be handled freely without danger, a general recommendation is that direct skin contact with antimony and its compounds should be avoided. In operations creating dust or fumes, a properly designed exhaust ventilation system is required to capture such materials at the source and remove them from the work area. Under circumstances in which exhaust ventilation cannot be used, an approved respirator is necessary. Circumstances which give rise to the formation of stibine (H<sub>3</sub>Sb), a highly toxic gas, should be considered and avoided. Any sign of illness involving possible exposure to stibine should receive immediate medical evaluation. Good personal hygienic practices to avoid ingestion, as well as orderly housekeeping practices, are also required.

### 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.