# Antimony Encyclopedia Article

## Antimony

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# Antimony

Antimony is the fourth element in Group 15 of the **periodic table**. Its **atomic number** is 51, its atomic **mass** is 121.75, and its chemical symbol is Sb.

## Properties

Antimony is a **metalloid**. It exists in three allotropic forms: a silvery white metal; a yellow, crystalline solid; and an amorphous black powder. Its melting point is 1,166°F (630°C) and its **boiling point** is 2,975°F (1,635°C). Its most common allotropic form, the silver- white metal, is a relatively soft material that can be scratched by **glass**. Its **density** is 6.68 grams per cubic centimeter.

## Occurrence and Extraction

Antimony is rarely found in nature as an element. Its most common ore is the mineral stibnite, a form of antimony sulfide ($Sb_2S_3$). Pure antimony can be obtained from antimony sulfide by heating the compound with hot iron: $2Fe + Sb_2S_3$ $Fe_2S_3 + 2Sb$.

The usual source of most antimony produced today is the **recycling** of metal alloys. About half of the antimony produced in the United States is recycled from old **lead** storage **batteries**, in which the antimony was originally alloyed with lead.

## Discovery and Naming

Compounds of antimony have been known and used by humans for centuries. Probably the first person to describe the element in detail was the French chemist Nicolas Lemery (1645-1715). The origin of the element's name is uncertain, but probably comes from two Arabic words *anti* and *monos* that mean "not alone." The name was chosen because antimony does not occur alone in nature, only in compounds.

## Uses

Antimony is usually used in the form of an **alloy**. Lead- antimony alloys were once very widely used for solder, ammunition, fishing tackle, covering for electrical cables, low-melting alloys, and batteries. Such uses are now decreasing because of the serious health problems posed by lead. Antimony and its compounds are also used in transistors, the manufacture of **ceramics** and glass, and the production of plastic.