Arsenic: Background Information

Element Symbol: As

Atomic Number: 33

Atomic Mass: 74.9216

Categorized: Chemical element in the nitrogen family, Group 15 (Va) of the periodic table

Properties/Toxicity: Semi-metallic element (intermediate between metals and nonmetals)and combines with various elements => hydrogen and arsenic form arsine, an extremely poisonous gas, oxygen and arsenic form a pentoxide and trioxide a deadly poison called arsenic (III).

History

- Realgar, orpiment, and other arsenic minerals were known to the Greeks during Aristotle's time; however the element had not been identified.

- Arsenic had not been identified as such until the 4th century in 1649.

- Arsenic was first described by Albertus Magnus in the 13th century.

Occurrence and Uses

- Arsenic appears in several allotropic forms. The most stable form is a silver-gray and brittle crystalline solid that tarnished rapidly in air. In appearance, it is metallic and has a specific gravity of 5.7. At high 613ºC (1135ºF), it sublimes and goes directly from solid to gaseous form forming a cloud of white arsenic trioxide. A yellow crystalline form (specific gravity of 2.0)and a black amorphous form are also known.
- Arsenic is ranked5 2nd in natural abundance among the elements in crystal rocks
- Arsenic occurs in many ores, including realgar and orpiment.

- Arsenic is used with other metals to make hard and strong corrosion-resistant alloys.
- Its compounds are used in pigments, animal poisons, insecticides. glassmaking, printing, tanning, preservatives, and in pyrotechnics.
- A number of organic compounds are used in medicine, including Salvarsan, formerly used in the treatment of syphilis and yaws.
- Many arsenic compounds are strong poisons and can be carcinogenic.
- Arsenic disulfide is used as a pigment in fireworks and paint.