PIPPA DE SALIS

ARSENIC

Element Symbol: As
Atomic Number: 33

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The name arsenic, originated from the Latim Arsenicum and Greek Arsenikos is known since the ancient times but it's discovery is credited to an alchemist known as Albert the Great (Albertus Magnus, 1193-1280) in the 13th century. Albert heated a common compound of arsenic, orpiment (As_2S_3), with soap and as a result of the process nearly pure arsenic was formed. By the 18th century the properties of metallic arsenic were sufficiently known to classify it as a semimetal.

Although inorganic Arsenic occurs naturally in soil and in many kinds of rock, it can be found most commonly in nature in a number of minerals such as Mispickel (arsenopyrite, FeSAs) which is found in France, Germany, Italy, Romania, Siberia and North America. It can thus enter the air, water and earth from dust as well as from volcanic eruptions. Small quantities can also be released into the atmosphere in the powerful process of burning and incinerating coal, as the product of discarded coal frequently contains some arsenic. Soil contamination can be result of pesticide use and mud containing As.

The most common ores of arsenic are arsenopyrite (FeAsS), orpiment (As_2S_3), and realgar (As_4S_4). These compounds are obtained as a by-product of the mining and purification of silver metal.

It's believed that the abundance of arsenic in the Earth's crust is about 5 parts per million which makes it the most abundant element in the Earth's crust.
The world's largest producers of arsenic are China, Chile, Mexico, Belgium, Namibia, and the Philippines. The United States does not produce any arsenic.

Arsenic is produce by heating arsenic-bearing minerals, such as iron arsenide ($FeAs_2$) in the absence of air.

In the past, inorganic compounds of arsenic were used as pesticides in cotton plantations and orchards. However, in these days, the As is mostly used in alloys in lead-acid batteries for automobiles, semiconductors and in light-emitting diodes, as an additive for metallurgical purposes due to its semi-metallic properties. A compound of Arsenic, gallium arsenide (GaAs), is also used to make light-emitting diodes (LEDs). LEDs produce the lit numbers in hand-held calculators, clocks, watches, and a number of other electronic devices.

The most important use of arsenic is considered to be in the preservation of wood. Surprisingly, even though Arsenic and its compounds are known to be toxic, it is reported that arsenic trioxide has been used to treat people with leukemia.

Recent research has been conducted by the University of Queensland regarding the toxicity of Arsenic for human and animal life and by the University of Newcastle regarding Arsenic mitigation and percentages of Arsenic in Australian water courses. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) has also realized examinations of arsenic in Australian export thermal coals intended for industrial scientific and research purposes.

Provided by the element sponsor Joana Rocha

ARTISTS DESCRIPTION

The poison of choice for the genteel murderer in days gone by. The linocut creates bold marks to draw the gaze and to clarify a relatively small image, and the hand-colouring of the floral design on the elegant cup is in keeping with the "Agatha Christie" scenario.

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