Metalloids Encyclopedia Article

Metalloids

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

Contents

Metalloids Encyclopedia Article.....1

Contents.....2

Metalloids.....3

Metalloids

The **periodic table** is divided into **metals** on the left and non-metals on the far right. Separating them are metalloids or semimetals. Metalloids are on either side of a stair-like line and have properties of both metals and non-metals. There are seven metalloids: **boron**, **silicon**, **germanium**, **arsenic**, **selenium**, **antimony**, and **tellurium**. They conduct **electricity**, but not as well as metals and are called **semiconductors**. Their ability to conduct electricity increases with **temperature**. Semiconductors are used in electronic and for making transistors. A computer chip can hold more than a million transistors. Other devices made from semiconductors include hand-held calculators, digital watches, and desktop computers.

Germanium is a relatively rare element found in transistors. Selenium, although rarer than germanium, has several allotropic forms. Electric conductivity of selenium is increased when light shines on it. In addition to being used as a semiconductor in photoelectric cells and copy machines, selenium is also used in **ceramics**, **glass**, and medicine. Like selenium, tellurium is used in electronic devices. The most common form is as a **silver**, brittle metal-like substance. It is the only element that is found in combination with **gold**.

Silicon reacts chemically like **carbon** although it does not form multiple bonds. It is used in making alloys with **iron**, **copper**, and bronze. Silicones are **chains** of silicon and **oxygen** and have organic groups attached. These polymers, depending on the length of the chain and the pattern of the chain are used for **water** repellents, oils, lubricants, polishes, antacids, and in paints that resist **heat**. Pure silicon can be mixed with antimony, arsenic or boron and used to make integrated circuits. Arsenic has two allotropes, yellow arsenic and metallic arsenic, which is brittle. Its major use is as a poison in weed killers and insecticides.

Antimony is used in the manufacture of vases, **cosmetics**, and ornaments. It also has two allotropes, a metallic, brittle silver white form, and a soft, yellow unstable form. Antimony is used as an **alloy** with **lead** in **batteries**, making it more resistant to acid.