Terbium Encyclopedia Article

Terbium

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Terbium

Terbium is a lanthanide series, rare earth element denoted by the atomic symbol, Tb. Its atomic number is 65 and its atomic weight is 158.9254. It is a silvery-gray metal with a melting point of 2,473°F (1,356°C) and a boiling point of 5,846°F (3,230°C). It is malleable, ductile, and so soft it can be cut with a knife.

During the period from 1839 to 1843, Carl Gustaf Mosander attacked one of the most confusing and frustrating problems facing chemists of the time: the composition of the rare earth minerals. In 1839, he discovered that one of those minerals, *erbia*, contained at least two new elements, lanthanum and cerium.

In 1843, he attacked a second mineral, yttria, and found that it, too, was a complex mixture. This mineral eventually yielded ten new elements. Mosander is given credit for the discovery of one of these, *terbium*, although his work also contributed to the identification of others in the group. Terbium was isolated in a more pure form by Jean-Charles-Galissard de Marignac (1817-1894) in 1886.

Terbium, like erbium, yttrium, and ytterbium, are all named for the Swedish town of Ytterby, where the rare earth minerals were first found.

The double salt, TbF_3ZnS is used in phosphors in color television sets. When hit with n electron beam, the compound emits a green color. The element is also used as a dopant in calcium and strontium salts used in solid-state devices. Research shows that terbium may also be useful as a stabilizer in fuel cells.