

Topic Page: [Cesium](#)

Definition: **cesium** from *Dictionary of Energy*

Chemistry. an alkali metal element having the symbol Cs, the atomic number 55, an atomic weight of 132.905, a melting point of 28°C, and a boiling point of 705°C; a soft solid that becomes liquid at about room temperature. The most reactive of all elements, it decomposes water to produce hydrogen that ignites spontaneously. Used in photoelectric cells and as a radiotherapy agent.

Summary Article: **cesium**

From *The Columbia Encyclopedia*

(sē'zēəm) [Lat.,=bluish gray], a metallic chemical element; symbol Cs; at. no. 55; at. wt. 132.90545; m.p. 28.4 degrees Celsius; b.p. 669.3 degrees Celsius; sp. gr. 1.873 at 20 degrees Celsius; valence +1. Cesium is a ductile, soft-as-wax, silver-white metallic element. It is in Group 1 of the periodic table. An alkali metal, it is the most alkaline of all elements. Cesium liquefies in a warm room; mercury and gallium are the only other metals with this property. Chemically cesium resembles rubidium and potassium. It is the most reactive metal and is never found uncombined in nature. Pure cesium can be prepared by electrolysis of fused cesium cyanide in an inert atmosphere; the pure metal must be kept under an inert liquid or gas or in a vacuum to protect it from air and water. Cesium reacts readily with oxygen; it is sometimes used to remove traces of the gas from vacuum tubes and from light bulbs. It reacts with ice; it reacts explosively with water to form cesium hydroxide, the strongest base known. Cesium reacts with the halogens to form a fluoride, chloride, bromide, and iodide. It also forms a sulfate, carbonate, nitrate, and cyanide. The chloride is used in photoelectric cells, in optical instruments, and in increasing the sensitivity of electron tubes. Cesium compounds are used in the production of glass and ceramics and as antishock agents in conjunction with drugs containing arsenic. Cesium-137, a waste product of nuclear reactors, is a radioactive isotope used in the treatment of cancer. Cesium is found in the mineral pollux, or pollucite, which occurs on the island of Elba, in SW Africa, in the United States in Maine and South Dakota, and in Manitoba, Canada. Commercially useful quantities of inexpensive cesium are now available as a byproduct of the production of lithium metal. Minute quantities of cesium chloride are found in mineral springs and in seawater. In 1860, R. W. Bunsen and G. R. Kirchoff discovered the element (the first to be discovered by the use of the spectroscope) and named it for the two bright blue lines characteristic of its spectrum. It was first isolated by Carl Sefferburg in 1881 by electrolysis of its salts.

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