

CESIUM

(Data in kilograms of cesium content, unless otherwise noted)

Domestic Production and Use: Although cesium was not recovered from any domestically mined ores, it is believed that at least one domestic company manufactured cesium products from imported pollucite ore. Cesium, usually in the form of chemical compounds, was used in research and development and commercially in electronic, photoelectric, and medical applications.

Salient Statistics—United States: Salient statistics, such as production, consumption, imports, and exports, are not available. The cesium market is very small, with annual consumption probably amounting to only a few thousand kilograms. As a result, there is no active trading of the metal and, therefore, no official market price. However, several companies publish prices for cesium and cesium compounds. These prices remain relatively stable for several years. The per-unit price for the metal or compounds purchased from these companies varies inversely with the quantity of material purchased. For example, in 1999, one company offered 1-gram ampoules of 99.98%-grade cesium metal at \$63.30. The price for 100 grams of the same material from this company was \$956.00, or \$9.56 per gram. At another company, the price for a 1-gram ampoule of 99.95%-pure cesium was \$49.40.

Recycling: None.

Import Sources (1995-98): The United States is 100% import reliant. Canada is the major source of cesium ores. Other possible sources of cesium-bearing material include Germany and the United Kingdom.

<u>Tariff:</u> Item	Number	Normal Trade Relations <u>12/31/99</u>
Alkali metals, other	2805.19.0000	5.5% ad val.
Chlorides, other	2827.39.5000	3.7% ad val.

Depletion Allowance: 15% (Domestic and foreign).

Government Stockpile: None.

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Events, Trends, and Issues: U.S. demand for cesium remained essentially unchanged. The United States is likely to continue to be dependent upon foreign sources unless domestic deposits are discovered or technology is developed to use low-grade raw materials. The high cost and extreme reactivity of cesium limit its application at present. Because of the small scale of production of cesium products, no significant environmental problems have been encountered.

World Mine Production, Reserves, and Reserve Base: Data on mine production of cesium are not available, and data on resources are sketchy. The estimates of reserves and of the reserve base are based on occurrences of the cesium aluminosilicate mineral pollucite, found in zoned pegmatites in association with the lithium minerals lepidolite and petalite. Pollucite is mined as a byproduct with other pegmatite minerals; commercial concentrates of pollucite contain about 20% cesium by weight.

	Reserves¹	Reserve base¹
Canada	70,000,000	73,000,000
Namibia	7,000,000	9,000,000
Zimbabwe	23,000,000	23,000,000
Other countries	<u>NA</u>	<u>NA</u>
World total (may be rounded)	100,000,000	110,000,000

World Resources: World resources of cesium have not been estimated.

Substitutes: The properties of rubidium and its compounds are quite similar to those of cesium and its compounds; thus, rubidium and cesium are used interchangeably in many applications.

NA Not available.

¹See Appendix C for definitions.