



CESIUM

What is cesium?

Cesium is a soft, silvery white metal found in rocks, soil, and dust. Cesium comes in many forms. Cesium 133 is not radioactive and found naturally in a variety of minerals. Cesium is a liquid at room temperature. Radioactive cesium forms in nuclear reactors and explosions. Two radioactive forms are cesium 134 and cesium 137.

Where can cesium be found and how is it used?

Cesium is manufactured outside the United States. Cesium compounds, such as cesium iodide and cesium fluoride, are used in scintillation counters, devices that convert ionizing radiation into light. Stable cesium is used in atomic clocks. Radioactive cesium is used to sterilize foods. It can also be found in medical supplies and sewage sludge.

How can people be exposed to cesium?

You could be exposed to cesium through:

- **Breathing, drinking water, eating food, or having skin contact** with cesium. If food is grown in contaminated areas, you can be exposed to radioactive cesium. You can also be exposed near radioactive waste, or near a source of radioactive cesium. Plants absorb radioactive cesium through the leaves.

How does cesium work and how can it affect my health?

It is very unlikely that you could be exposed to large amounts of stable cesium. Cesium irritates the eyes and burns the skin. Pure cesium is highly reactive with water so any contact on or in the body can cause burns. Radioactive cesium is not named as a cancer-causing substance.

How is cesium poisoning treated?

Exposure to stable cesium is not considered to be a major public health threat since it is mildly poisonous and has limited use. However, medical providers may prescribe a compound called Prussian Blue, which can remove stable cesium from the body in waste matter. In most cases, cesium leaves the body in urine.

What should I do if exposed to cesium?

If you believe you were exposed to cesium compounds, see your doctor. Radioactive cesium is much more dangerous due to the radioactivity, not the cesium itself.

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What factors limit use or exposure to cesium?

Very little cesium or cesium compounds are used in the United States. You are most likely to be exposed to compounds with stable cesium if you work where they are used. There are no workplace exposure limits for pure cesium.

Is there a medical test to show whether I've been exposed to cesium?

One test can show if you were exposed to a large dose of radioactive cesium. Another test can show cesium in the blood, waste matter, saliva, and urine.

Technical information for cesium

CAS Number: 7440-46-2

Chemical Formula: Cs

Carcinogenicity (EPA): Stable cesium – no information. There are no human studies that specifically associate exposure to radioactive cesium with increased cancer risk.

EPA: All radionuclides: 4 millirem per year

MCL (Drinking Water): No information.

OSHA Standards: None listed.

NIOSH Standards: For cesium hydroxide: 2 mg/m³ limit as an average for a 10-hour workday, 40-hour workweek.

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2004. *Toxicological Profile for Cesium*.

<https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=578&tid=107>

Agency for Toxic Substances and Disease Registry (ATSDR). 2004. *ToxFAQs for Cesium*.

<https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=576&toxid=107>

New Jersey Department of Health and Senior Services. *Hazardous Substances Fact Sheet: Cesium*. On-line version, <http://nj.gov/health/eoh/rtkweb/documents/fs/0353.pdf>, January 2004

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