Europium - Eu

Chemical properties of europium - Health effects of europium - Environmental effects of europium

Atomic number	63
Atomic mass	167.26 g.mol^{-1}
Electronegativity according to Pauling	1.2
Density	5.25 g.cm^{-3} at 20°C
Melting point	1522 °C
Boiling point	2510 °C
Vanderwaals radius	unknown
Ionic radius	unknown
Isotopes	9
Electronic shell	[Xe] 4f^{12} 6s^{2}
Energy of first ionisation	587.6 kJ.mol^{-1}
Energy of second ionisation	1149 kJ.mol^{-1}
Standard potential	- 2.30 V
Discovered by	Carl Mosander in 1843

Europium

Europium is a soft silvery metal, both are and expensive. It is the most reactive of the lanthanide group: it tarnishes quickly in air at room temperature, burns at about 150 C to 180 C and reacts readly with water.

Applications

Europium is a neutron adsorber, , so it is used in nuclear reactors control rods. Europium phosphors are used in television tubes to give a bright red colour and as an activator for yttrium-based phosphors. For powerful street lighting a little europium is added to mercury vapour lamps to give a more natural light. A salt of europium is used for newer phosphorescent powder and paints.

Europium in the environment

Europium is one of the less abundant rare-earth elements: it is almost as abundant as tin. It is never found in nature as the free element, but there are many elements containing eruropium. Main mining areas are China and USA. Reserves of europium are estimated to be around 150.000 tonnes and world production of the pure metal is around 100 tonnes a year.

Health effects of europium

Europium has no known biological role. Europium salts could be mildly toxic by ingesiton, but its toxicity has not been fully investigated.

Environmental effects of europium

Europium poses no environmental threath to plants or animals. The metal dust presents a fire and explosion hazard.

Read more: https://www.lenntech.com/periodic/elements/eu.htm#ixzz81dNoAtwP