

# Erbium - Er

## [Chemical properties of erbium](#) - [Health effects of erbium](#) - [Environmental effects of erbium](#)

<b>Atomic number</b>	68
<b>Atomic mass</b>	167.26 g.mol <sup>-1</sup>
<b>Electronegativity according to Pauling</b>	1.2
<b>Density</b>	9.2 g.cm <sup>-3</sup> at 20°C
<b>Melting point</b>	1522 °C
<b>Boiling point</b>	2510 °C
<b>Vanderwaals radius</b>	unknown
<b>Ionic radius</b>	unknown
<b>Isotopes</b>	9
<b>Electronis shell</b>	[ Xe ] 4f <sup>12</sup> 6s <sup>2</sup>
<b>Energy of first ionisation</b>	587.6 kJ.mol <sup>-1</sup>
<b>Energy of second ionisation</b>	1149 kJ.mol <sup>-1</sup>
<b>Standard potential</b>	- 2.30 V
<b>Discovered by</b>	Carl Mosander in 1843



## Erbium

Erbium is a soft, malleable, lustrous, silvery metal. It is very stable in air, it reacts very slowly with oxygen and water and dissolves in acids. Its salts are rose coloured and it has a sharp adsorption spectra in visible, ultraviolet and infrared light.

### *Applications*

Some erbium is added to alloys with metals such [vanadium](#) because it lowers their hardness, making them more workable. Due to its adsorption of infrared light, erbium is added to the glass of special safety spectacles for workers, such as welders and glass-blowers. It is used as a photographic filter as well, and to dope optical fibers at regular intervals to amplify signals. Finally, due to its pink colour, erbium is sometimes used as a glass and porcelain enamel glaze colorant.

### *Erbium in the environment*

Erbium is never found as a free element in nature. It is found in minerals that include all the rare-earth elements. Erbium is one of the more abundant rare-earth elements. The main mining areas are China and US. The most important ores are monazite and bastanite, were it is present in extrable amounts. Better suorces of the element are xenotime and euxenite. World production of erbium is 500 tonnes per year.

## Health effects of erbium

Erbium has no biological role even if it has been noted that it stimulates metabolism. It is difficult to determine the amount of erbium present in the human body. The levels are highest in bones, with smaller amounts being present in the liver and kidneys.

## Environmental effects of erbium

Erbium poses no environmental threat to plants and animals.