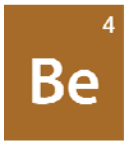
Stable Isotopes of Beryllium

Isotope	Z(p)	N(n)	Atomic Mass	Natural Abundance	Nuclear Spin
Be-9	4	5	9.0121822	100.00%	3/2-



Beryllium was discovered in 1797 by Louis-Nicolas Vauquelin. Its name derives from the Greek word *beryllos,* meaning "beryl."

The lightest alkaline-earth metallic element, beryllium is a hard, brittle, gray-white metal, with a hexagonal close-packed crystal system. It is the lightest structural metal known and can be fabricated by rolling, forging or machining. It is soluble in acids (except nitric acid) and alkalies. It is resistant to oxidation at ordinary temperatures, with high heat capacity and thermal conductivity. Its chemical reactions are similar to those of aluminum.

Beryllium is permeable to x-rays. It occurs in several minerals, mostly combined with silica and alumina, the most common minerals being beryl, chrysoberyl, phenacite and bertrandite. Beryllium oxide is a component of precious stones, such as emerald, aquamarine and topaz. It is found in trace amounts in the ore feldspar. It is used in nuclear reactors to moderate the velocity of slow neutrons.

Elemental beryllium and its compounds are very poisonous by inhalation or intravenous route. Chronic inhalation of beryllium dusts or fumes can cause *berylliosis*, a serious lung disease. Skin contact with soluble salts of the metal can cause dermatitis. Beryllium also is a carcinogen: there is sufficient evidence of its inducing cancer in animals and humans. It is one of the United States Environmental Protection Agency's listed priority pollutant metals in the environment.

Properties of Beryllium

Name	Beryllium
Symbol	Be
Atomic number	4
Atomic weight	9.01218
Standard state	Solid at 298 °K
CAS Registry ID	7440-41-7
Group in periodic table	2
Group name	Alkaline earth metal

ISOFLEX
Isotopes for Science, Medicine and Industry

1-415-440-4433 | USA & Canada Toll Free 1-888-399-4433 | Fax 1-415-563-4433
PO Box 29475 | San Francisco, CA 94129 USA | isoflex.com

Properties of Beryllium (continued)

Period in periodic table	2
Block in periodic table	s-block
Color	Gray-white or lead gray
Classification	Metallic
Melting point	1287 °C
Boiling point	2970 °C
Thermal conductivity	190.00 W/(m·K)
Electrical resistivity	3.36×10^{-10} μΩ·cm at 20 °C
Electronegativity	1.5
Specific heat	1820 J/(kg·K)
Heat of vaporization	297.00 $kJ \cdot mol^{-1}$
Heat of fusion	7.95 $kJ \cdot mol^{-1}$
Density of solid	1.85 g/cm^3
Electron configuration	$[He]2s^2$
Oxidation state	2+
Atomic radius	1.06 Å
Ionic radius	Be^{2+} : 0.30 Å