

Isotopes of Berkelium

Isotope	Atomic Mass	Half-life	Mode of Decay	Nuclear Spin	Nuclear Magnetic Moment
Bk-245	245.06636	4.94 days	EC to Cm-245; α to Am-241	3/2	No data available
Bk-246	246.0687	1.80 days	EC to Cm-246; α to Am-242	2	No data available
Bk-247	247.070300	1400 years	α to Am-243	3/2	No data available
Bk-248	248.07310	23.70 hours	EC to Cm-248; α to Am-244; β^- to Cf-248	1	No data available
Bk-249	249.07498	320 days	α to Am-245; β^- to Cf-249; SF	7/2	2.0
Bk-250	250.07831	3.217 hours	β^- to Cf-250	2	No data available

97

Bk

Berkelium is a radioactive rare earth metal, discovered in 1949 by Glenn T. Seaborg, Stanley G. Thompson and Albert Ghiorso, and named after the University of California at Berkeley, USA. Perhaps the first visible sample of a pure berkelium compound, berkelium chloride, was produced in 1962. It weighed just 3 billionths of a gram.

Berkelium is a soft, silvery-white metal that emits low-energy electrons and is therefore relatively safe to handle. Its most stable *alpha form* has a hexagonal symmetry. The crystal has a double-hexagonal close-packing structure, which changes with pressure and temperature. It transforms to the *beta modification*, which has a face-centered symmetry. Berkelium dissolves in various aqueous inorganic acids. It does not react rapidly with oxygen at room temperature; however, it reacts with molten metals, hydrogen, halogens, chalcogens and pnictogens to form various binary compounds.

There are no known commercial applications of berkelium outside of scientific research. Berkelium-249 is a common target nuclide to prepare still heavier transuranic elements and transactinides, such as lawrencium, rutherfordium and bohrium.

Properties of Berkelium

Name	Berkelium
Symbol	Bk
Atomic number	97
Atomic weight	[247]
Standard state	Solid at 298 °K
CAS Registry ID	7440-40-6
Group in periodic table	N/A
Group name	Actinoid
Period in periodic table	7 (Actinoid)
Block in periodic table	f-block
Color	Unknown, but probably metallic and silvery white or grey in appearance
Classification	Metallic
Melting point	1259 °K [or 986 °C or 1807 °F]
Boiling point	No data available
Density of solid	14.78 g/cm ³
Electron configuration	[Rn]5f ⁹ 7s ²