

Berkelium

Bk

General Information

Discovery

Berkelium was discovered by S.C. Thompson, A. Ghiorso and G.T. Seaborg in 1949 in California, USA.

Appearance

Berkelium is a radioactive, silvery metal.

Source

Berkelium is made in milligram quantities only by the neutron bombardment of plutonium.

Uses

Because of its rarity, berkelium has no commercial or technological use at present.

Biological Role

Berkelium has no known biological role. It is toxic due to its radioactivity.

General Information

Berkelium is attacked by oxygen, steam and acids, but not by alkalis. Compounds with oxygen and the halides have been prepared, but only in minute quantities.

Physical Information

Atomic Number	97
Relative Atomic Mass (¹² C=12.000)	247 (radiocative)
Melting Point/K	Not available
Boiling Point/K	Not available
Density/kg m ⁻³	14790 (293K)
Ground State Electron Configuration	[Rn]5f ⁹ 7s ²

Key Isotopes

Nuclide	²⁴⁷ Bk	²⁴⁹ Bk
Atomic mass	247.07	
Natural abundance	0%	0%
Half-life	1.4x10 ³ yrs	314 days

Ionisation Energies/kJ mol⁻¹

M	- M ⁺	601
M ⁺	- M ²⁺	
M ²⁺	- M ³⁺	
M ³⁺	- M ⁴⁺	
M ⁴⁺	- M ⁵⁺	
M ⁵⁺	- M ⁶⁺	
M ⁶⁺	- M ⁷⁺	
M ⁷⁺	- M ⁸⁺	
M ⁸⁺	- M ⁹⁺	
M ⁹⁺	- M ¹⁰⁺	

Other Information

Enthalpy of Fusion/kJ mol ⁻¹	Not available
Enthalpy of Vaporisation/kJ mol ⁻¹	Not available
Oxidation States	
Bk ^{IV}	
Covalent Bonds/kJ mol⁻¹	
Not applicable	