

# Berkelium

***Bk***

## ***General Information***

### **Discovery**

Berkelium was discovered by S.G. 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 ( $^{12}\text{C}=12.000$ )	247 (radioactive)
Melting Point/K	Not available
Boiling Point/K	Not available
Density/kg m <sup>-3</sup>	14790 (293K)
Ground State Electron Configuration	[Rn]5f <sup>9</sup> 7s <sup>2</sup>

## Key Isotopes

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

## Ionisation Energies/kJ mol<sup>-1</sup>

M - M <sup>+</sup>	601
M <sup>+</sup> - M <sup>2+</sup>	
M <sup>2+</sup> - M <sup>3+</sup>	
M <sup>3+</sup> - M <sup>4+</sup>	
M <sup>4+</sup> - M <sup>5+</sup>	
M <sup>5+</sup> - M <sup>6+</sup>	
M <sup>6+</sup> - M <sup>7+</sup>	
M <sup>7+</sup> - M <sup>8+</sup>	
M <sup>8+</sup> - M <sup>9+</sup>	
M <sup>9+</sup> - M <sup>10+</sup>	

## Other Information

Enthalpy of Fusion/kJ mol<sup>-1</sup> Not available

Enthalpy of Vaporisation/kJ mol<sup>-1</sup> Not available

### Oxidation States

Bk<sup>+4</sup>