Bohrium *Bh*

General Information

Discovery

Bohrium was first made in 1981 by Peter Armbruster, Gottfried Munzenberg and co-workers at the GSI in Darmstadt, Germany.

Appearance

Unknown, but probably metallic grey in appearance.

Source

A transuranium element, only a few atoms of bohrium have ever been made, and it will probably never be isolated in observable quantities. Created by the so-called “cold fusion” method, in which a target of bismuth is bombarded with atoms of chromium.

Uses

Unknown

Biological Role

None

General Information

A synthetic element created via nuclear bombardment, few atoms have ever been made and the properties of bohrium are very poorly understood. It is a radioactive metal which does not occur naturally and is of research interest only. The first atoms were made via a nuclear reaction, the cold fusion method:

$^{209}Bi + {}^{54}Cr \rightarrow {}^{262}Bh + n$

Physical Information

Atomic Number	107
Relative Atomic Mass (^{12}C=12.000)	262.12
Melting Point/K	Not available
Boiling Point/K	Not available
Density/kg m^{-3}	37,000 (estimated)
Ground State Electron Configuration	$[Rn]5f^{14}6d^{5}7s^{2}$
Electron Affinity (M-M^{-})/kJ mol^{-1}	Not available

Key Isotopes

Nuclide	^{261}Bh	^{262}Bh	^{262m}Bh
Atomic mass	261.12	262.12	
Natural abundance	0%	0%	0%
Half-life	0.012 secs	0.1 secs	$8x10^{-3}$ secs

Ionisation Energies/kJ mol^{-1}

M - M^{+}	660 (est)
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

Bh^{VII} has been predicted as probably the most stable state.

Covalent Bonds/kJ mol^{-1}

Not available