

Hassium

Hs

General Information

Discovery

Hassium was first made in 1984 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 hassium have ever been made, and it will probably never be isolated in observable quantities. Created by a so-called "cold fusion" method, in which a target of lead is bombarded with atoms of iron.

Uses

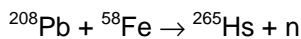
Unknown

Biological Role

None

General Information

A synthetic element created via nuclear bombardment, few atoms have ever been made and the properties of hassium 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:



Physical Information

Atomic Number	108
Relative Atomic Mass ($^{12}\text{C}=12.000$)	265
Melting Point/K	Not available
Boiling Point/K	Not available
Density/kg m ⁻³	41,000 (estimated)
Ground State Electron Configuration	[Rn]5f ¹⁴ 6d ⁶ 7s ²
Electron Affinity (M-M ⁻)/kJ mol ⁻¹	Not available

Key Isotopes

Nuclide	²⁶⁴ Hs	²⁶⁵ Hs
Atomic mass	264.13	265.13
Natural abundance	0%	0%
Half-life	approx 8x10 ⁻⁵ secs	approx 2x10 ⁻³ secs

Ionisation Energies/kJ mol⁻¹

M - M ⁺	750 (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

Many oxidation states predicted, but Hs^{III} has been predicted as probably the most stable state.

Covalent Bonds/kJ mol⁻¹

Not available