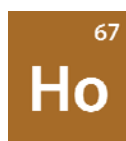


Stable Isotopes of Holmium

Isotope	Z(p)	N(n)	Atomic Mass	Natural Abundance	Nuclear Spin
Ho-165	67	98	164.930319	100.00%	7/2-



Holmium was discovered in 1878 by Marc Delafontaine and Jacques-Louis Soret. Its name comes from the Greek word *Holmia*, meaning “Sweden.”

A soft, lustrous metal with a silver-like appearance, holmium is a hexagonal crystalline solid with a metallic luster. It has one of the highest nuclear moments of any rare earth. It is paramagnetic, with a magnetic moment of 11.2 Bohr magnetons. It reacts slowly with water and is soluble in dilute acids. The metal forms fluoride, hydroxide, phosphate, oxalate and carbonate that are insoluble in water. Its water-soluble salts are chloride, bromide, iodide, acetate, nitrate and sulfate. Reactions of holmium with acids yield corresponding salts. The finely divided metal burns in oxygen at ordinary temperatures.

Holmium metal does not have significant commercial application. However, because of its unusual magnetic properties, it is being used in research studies to explore the magnetic and alloying behaviors of metals.

Properties of Holmium

Name	Holmium
Symbol	Ho
Atomic number	67
Atomic weight	164.93
Standard state	Solid at 298 °K
CAS Registry ID	7440-60-0
Group in periodic table	N/A
Group name	Lanthanoid
Period in periodic table	6 (Lanthanoid)
Block in periodic table	f-block
Color	Silvery white
Classification	Metallic

Properties of Holmium (continued)

Melting point	1472 °C
Boiling point	2695 °C
Vaporization point	2694 °C
Thermal conductivity	16.20 W/(m·K) at 298.2 °K
Electrical resistivity	87.0 μΩ·cm at 25 °C
Electronegativity	1.2
Specific heat	0.38 kJ/kg K
Heat of vaporization	265 kJ·mol ⁻¹
Heat of fusion	17 kJ·mol ⁻¹
Density of liquid	8.34 g/cm ³ at 1472 °C
Density of solid	8.78 g/cm ³
Electron configuration	[Xe]4f ¹¹ 6s ²
Metallic radius	1.767 Å (coordination number 12)
Atomic volume	18.78 cm ³ /mol
Oxidation state	+3