

Curium

Cm

General Information

Discovery

Curium was discovered by G.T. Seaborg, R.A. James and A. Ghiorso in 1944 in California, USA.

Appearance

Curium is a radioactive, silvery metal.

Source

Curium can be made in very small amounts by the neutron bombardment of plutonium. Minute amounts may exist in natural deposits of uranium.

Uses

Curium has little use outside research, as it is only available in extremely small quantities.

Biological Role

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

General Information

Curium is attacked by oxygen, steam and acids, but not by alkalis. Several oxides and halides of this element have been prepared.

Physical Information

Atomic Number	96
Relative Atomic Mass ($^{12}\text{C}=12.000$)	247 (radioactive)
Melting Point/K	1610
Boiling Point/K	Not available
Density/kg m ⁻³	13300 (293K)
Ground State Electron Configuration	[Rn]5f ⁷ 6d ¹ 7s ²

Key Isotopes

Nuclide	²⁴² Cm	²⁴⁴ Cm	²⁴⁷ Cm	²⁴⁸ Cm
Atomic mass	242.06	244.06	247.07	
Natural abundance	0%	0%	0%	0%
Half-life	163 days	17.6 yrs	1.6x10 ⁷ yrs	4.7x10 ⁵ yrs

Ionisation Energies/kJ mol⁻¹

M - M ⁺	581
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

Main Cm⁺³

Others Cm⁺², Cm⁺⁴