



>>Entry Name: Xenon

CAS Registry Number: 7440-63-3

Related CAS Registry Numbers(s): 12185-19-2 14066-95-6 14066-96-7 14066-97-8 14066-99-0 14067-00-6 24203-25-6 37217-17-7 53179-68-3 60212-94-4 70478-74-9

Xe

Molecular Formula: Xe

Molecular Weight: 131.29

Accurate Mass: 131.904144

Percentage Composition: Xe 100.00%

mass range 118 to 142, of which 9 are natural. Abundance: 0.086 ppm (by vol.) in atm. Oxidation states in compds.: +2, +4, +6, +8. Ccp struct. in solid state

Source/Synthesis: Obt. by fractionation of liq. air

Use/Importance: Used in discharge tubes and bactericidal lamps

Biological Use/Importance: Inhalation anaesthetic

Physical Description: Colourless, odourless, tasteless, monatomic gas. Reacts with fluorine and v. powerful fluorinating agents

Melting Point: Mp -111.8°

Boiling Point: Bp -107.1°

Solubility: Sol. H₂O (108.1 cm³ kg⁻¹)

Other Data: Forms clathrate compds.: Xe.3ROH (R = aryl), and hydrates Xe.5.75H₂O and 2Xe.X.17H₂O (X = Me₂CO, CH₂Cl₂, CHCl₃, CCl₄, THF etc). Forms complexes with HCl, HBr

>>Variant: Xenon 120

CAS Registry Number: 15151-08-3

Source/Synthesis: Prod. by proton bombardment of I or Ce

Other Data: $I = +0$. Decays by $\beta^{(+)}$ emission or orbital electron capture to ¹²⁰I

>>Variant: Xenon 121

CAS Registry Number: 17913-80-3

Source/Synthesis: Prod. from ¹²¹I (p,7n) or by proton bombardment of Ce

Other Data: $I = +5/2$. Decays by $\beta^{(+)}$ emission or orbital electron capture to ¹²¹I

>>Variant: Xenon 122

CAS Registry Number: 15151-09-4

Source/Synthesis: Prod. from ¹²²I (p,6n), ¹²²Te (α ,2n), or by proton bombardment of Ce

Other Data: $I = +0$. Decays by $\beta^{(+)}$ emission or orbital electron capture to ¹²²I

>>Variant: Xenon 123

CAS Registry Number: 15700-10-4

Source/Synthesis: Prod. from ¹²³I (p,5n)

Other Data: $I = +1/2$. Decays by $\beta^{(+)}$ emission or orbital electron capture to ¹²³I

>>Variant: Xenon 124

CAS Registry Number: 15687-60-2

Other Data: $I = +0$

>>Variant: Xenon 125

CAS Registry Number: 13994-18-8

Source/Synthesis: Prod. from ¹²⁵I (p,3n), or ¹²⁴Xe (n, γ)

Other Data: $I = +1/2$. Decays by orbital electron capture to ¹²⁵I