



>>Entry Name: Iridium

CAS Registry Number: 7439-88-5

Ir

Molecular Formula: Ir

Molecular Weight: 192.22

Accurate Mass: 192.962917

Percentage Composition: Ir 100.00%

S. Tennant (London). No known biological role. Distribution: 0.001 ppm (earth's crust)

Source/Synthesis: Occurs with Pt

Use/Importance: Used in specialist alloys

Physical Description: Hard, lustrous silvery metal

Melting Point: Mp 2443° (2410°)

Boiling Point: Bp 4500° (4100°)

Other Data: Stable to air and H₂O. Inert to acids. Attacked by fused alkalis and by Na₂O₂ (or KOH) and KNO₃

Aldrich: 44922-9

Fluka: 58190

Sigma: I8631

>>Variant: Iridium 189

CAS Registry Number: 14265-84-0

Source/Synthesis: Prod. from Re (α ,2n), or ¹⁹⁰Os (p,2n). Daughter of ¹⁸⁹Pt

Other Data: $I = +3/2$; $\mu = 0.13 \mu_N$. Decays by orbital electron capture to ¹⁸⁹Os

>>Variant: Iridium 190

CAS Registry Number: 14981-91-0

Source/Synthesis: Prod. from Os (d,n), ⁹⁰Os (p,n), ¹⁸⁷Re (α ,n), ¹⁹²Os (p,3n), or ¹⁹²Os (d,4n)

Other Data: $I = +4$; $\mu = 0.04 \mu_N$. Decays by orbital electron capture to ¹⁹⁰Os

>>Variant: Iridium 191

CAS Registry Number: 13967-66-3

Other Data: $I = +3/2$; $\mu = +0.1462 \mu_N$. Nmr relative sensitivity (¹H=1.00) 2.53×10^{-5} ; receptivity (¹³C=1.00) 0.023

>>Variant: Iridium 192

CAS Registry Number: 14694-69-0

Source/Synthesis: Prod. from Ir (n, γ), or ⁹²Os (d,2n). Commercial production route: neutron bombardment of 99.9% Ir metal

Other Data: $I = -4$; $\mu = +1.92 \mu_N$. Decays by $\beta^{(-)}$ emission (95%) to ¹⁹²Pt, or orbital electron capture (5%) to ¹⁹²Os

>>Variant: Iridium 192m1

Source/Synthesis: Prod. from Ir (n, γ), or Os (d,2n)

Other Data: $I = +1$ (value uncertain). Decays by isomeric transition (99.9825%) to ¹⁹²Ir, or by $\beta^{(-)}$ emission (0.0175%) to ¹⁹²Pt

>>Variant: Iridium 192m2

Source/Synthesis: Prod. from Ir (n, γ)

Other Data: $I = +9$. Decays by isomeric transition to ¹⁹²Ir

>>Variant: Iridium 193

CAS Registry Number: 13967-67-4

Other Data: $I = +3/2$; $\mu = +0.1592 \mu_N$. Nmr relative sensitivity (¹H=1.00) 3.27×10^{-5} ; receptivity (¹³C=1.00) 0.050