



>>Entry Name: Samarium(II) iodide (SmI₂)

Synonym(s): Samarium diiodide. Kagan's reagent

CAS Registry Number: 32248-43-4

SmI₂

Molecular Formula: I₂Sm

Molecular Weight: 404.169

Accurate Mass: 405.728675

Percentage Composition: I 62.80%; Sm 37.20%

Source/Synthesis: Can be synth. from Sm + 1,2-diiodoethane

Use/Importance: Reducing agent for org. synth., reagent for C-C bond formn.; in THF, deoxygenates epoxides, reduces sulfones, azides, etc.; reacts with O₂ in soln. to form a peroxide complex which is an efficient peroxidising reagent. May induce C-C bond fragmentation

Physical Description: Air-sensitive dark green or yellow solid

Melting Point: Mp 527° (520°)

Boiling Point: Bp 1580°

Solubility: Sol. THF

Other Data: Reacts with H₂O (wine red soln.). $\Delta H_f^\circ -141 \text{ KJ mol}^{-1}$. $\mu_{\text{eff}} = 3.52\mu_B$ (25°)

Aldrich: 40934-0

Fluka: 84453

>>Derivative: Bis(*tert*-butyl cyanide) complex

CAS Registry Number: 97316-33-1

Molecular Formula: C₁₀H₁₈I₂N₂Sm

Molecular Weight: 570.435

Accurate Mass: 571.875673

Percentage Composition: C 21.06%; H 3.18%; I 44.49%; N 4.91%; Sm 26.36%

Physical Description: Air-sensitive dark green cryst.

Solubility: Sol. Me₃CCN

Other Data: Chain struct. with bridging iodines. V. bent Sm-N≡C (151°)

References:

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