



>>Entry Name: Osmium(VIII) oxide (OsO₄)

Synonym(s): Osmium tetroxide. Osmic acid

CAS Registry Number: 20816-12-0

Related CAS Registry Numbers(s): 62202-86-2

Extra CAS Registry Numbers(s): 61970-39-6

OsO₄

Molecular Formula: O₄Os

Molecular Weight: 254.198

Accurate Mass: 255.941127

Percentage Composition: O 25.18%; Os 74.82%

Source/Synthesis: Synth. by reaction of osmium metal with oxygen between 300 and 800°

Use/Importance: Oxidising agent for organic compds. particularly olefins. Starting material for many osmium compds. and complexes

Physical Description: Yellow monoclinic cryst.

Melting Point: Mp 40.5°

Boiling Point: Subl. 130°

Solubility: Sol. CCl₄, C₆H₆, EtOH, Et₂O; spar. sol. dil. H₂SO₄, H₂O (*ca.* 5.9 g per 100 cm³ at 15°, 7.2 g per 100 cm³ at 25°)

Other Data: Ir_{gas} ν₃ 912, ν₄ 313 cm⁻¹. Raman_{gas} ν₁ 965, ν₂ 333 cm⁻¹

Hazard & Toxicity: Highly toxic: volatile poisonous vapour

Aldrich: 41949-4

Fluka: 75632

Sigma: O5500

>>Derivative: PF₃ complex

>>Derivative: Dihydrate

>>Derivative: Py complex

>>Derivative: Quinuclidine complex

>>Derivative: Hexamethylenetetramine complex (2:1)

References:

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