



>>Entry Name: Iodic acid (HIO₃), 11Cl, 10Cl, 9Cl

CAS Registry Number: 7782-68-5

Related CAS Registry Numbers(s): 15454-31-6

HOIO₂

Molecular Formula: HIO₃

Molecular Weight: 175.911

Accurate Mass: 175.897043

Percentage Composition: H 0.57%; I 72.14%; O 27.29%

Source/Synthesis: Formed from I₂ + HNO₃

Use/Importance: Commercially available strong electrolyte

Biological Use/Importance: Antiseptic, astringent

Physical Description: Colourless cryst. Partially dehydrates at 70° giving finally I₂O₅. Darkens on exposure to light

Melting Point: Mp 110 dec.°

Solubility: Insol. Et₂O, CHCl₃, EtOH; v. sol H₂O, HNO₃, EtOH aq.

Density: d⁰ 4.629

pKa Value: pK_a 0.8 (25°)

Hazard & Toxicity: Irritant. Strong oxidant. Dangerous reaction with some non-metals

Aldrich: 37990-5

Fluka: 58062

Sigma: I4763

>>Derivative: Deutero compd.

Synonym(s): Iodic acid-*d*. Deuteroiodic acid

CAS Registry Number: 15117-81-4

Molecular Formula: DIO₃

Molecular Weight: 176.917

Physical Description: White cryst.

pKa Value: pK_a 1.15 (25°)

>>Derivative: K salt

>>Derivative: NH₄ salt

>>Derivative: Me ester

Synonym(s): Methyl iodate

CAS Registry Number: 89706-07-0

Molecular Formula: CH₃IO₃

Molecular Weight: 189.937

Accurate Mass: 189.912693

Percentage Composition: C 6.32%; H 1.59%; I 66.81%; O 25.27%

Source/Synthesis: Formed from IF₅ + (Me₃Si)₂O in CH₂Cl₂

Physical Description: White solid

Solubility: Insol. solvs. with which it does not react

Other Data: Dec. at 80°

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1246B, (*ir*)

Mellor Compr. Treat. Inorg. Theor. Chem., Longman, London, Part 1, 1922, **2**, 296; 1956, **2/II**, 880, (*rev*)

Dasent, W.G. *et al.*, *J.C.S.*, 1960, 2429, (*deutero, ir*)

Durig, J.R. *et al.*, *J. Phys. Chem.*, 1965, **69**, 3886, (*deutero, synth, Raman*)

Compr. Inorg. Chem., Pergamon, Oxford, 1973, **2**, 1421, (*rev*)

Brauer, G., *Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **1**, 325, (*synth*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **15**, 665

Merck Index, 11th edn., 1989, No. 4905, (*synth, props*)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, IDK000