



>>Entry Name: Potassium iodate(V) (KIO₃)

ENTRY UNDER REVIEW

Synonym(s): Iodic acid (HIO₃), potassium salt, 8CI

CAS Registry Number: 7758-05-6

KIO₃

Molecular Formula: KIO₃

Molecular Weight: 214.001

Accurate Mass: 213.852925

Percentage Composition: I 59.30%; K 18.27%; O 22.43%

Source/Synthesis: Synth. from aq. KMnO₄ + I₂

Use/Importance: Commercially available. Oxidising agent esp. with sulfur dyes; dough strengthener/conditioner used in baking bread

Physical Description: Colourless triclinic cryst. Becomes monoclinic at 72.5°. Also undergoes 2 phase changes below r.t. but remains triclinic

Melting Point: Mp 560°

Solubility: V. sol. H₂O (4.7 g per 100 cm³ at 0°; 32 g per 100 cm³ at 100°); insol. EtOH

Other Data: ΔH_f° -501 kJ mol⁻¹; ΔG_f° -418 kJ mol⁻¹; S° 152 J K⁻¹ mol⁻¹

Hazard & Toxicity: Oxidiser, irritant

Aldrich: 46776-6

Fluka: 60395

Sigma: P8269

References:

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Timokhina, N.I., *CA*, 1965, **63**, 2604d, (*synth*)

Sterzel, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1971, **383**, 231, (*ir*)

Hamid, S.A., *Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1973, **137**, 412, (*polymorphs*)

Kondilenko, I.I. *et al.*, *Zh. Prikl. Spektrosk.*, 1974, **21**, 282, (*Raman*)

Lucas, B.W., *Acta Cryst. C*, 1984, **40**, 1989; 1985, **41**, 1388, (*cryst struct, polymorphs*)

Kamman, P.W., *Baker's Dig.*, 1984, **58**, 18, (*rev, use*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2905C, (*haz*)

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