



>>Entry Name: Potassium bromate(V) (KBrO₃)

ENTRY UNDER REVIEW

Synonym(s): Bromic(V) acid, potassium salt, 8CI

CAS Registry Number: 7758-01-2

KBrO₃

Molecular Formula: BrKO₃

Molecular Weight: 167.001

Accurate Mass: 165.886788

Percentage Composition: Br 47.85%; K 23.41%; O 28.74%

Source/Synthesis: Synth. by neutralisation of K₂CO₃ with aq. HBrO₃

Use/Importance: Commercially available. Powerful brominating agent for deactivated aromatics in sulfuric acid. Also used as an oxidising agent. Dough conditioning agent used in bread making. Normally decomposed during the baking process

Physical Description: Colourless hexagonal cryst.

Melting Point: Mp 434°

Solubility: Sol. H₂O (13 g per 100 cm³ at 40°; 50 g per 100 cm³ at 100°); spar. sol. EtOH; insol. Me₂CO

Other Data: ΔH_f° -360 kJ mol⁻¹; ΔG_f° -271 kJ mol⁻¹; S° 149 J K⁻¹ mol⁻¹. Pyroelectric

Hazard & Toxicity: Oxidiser, toxic, cancer suspect agent

Aldrich: 22485-5

Fluka: 60086

Sigma: P6459

References:

- Aldrich Library of FT-IR Spectra*, 1st edn., 1985, **2**, 1254B, (*ir*)
Swanson, H.E. *et al.*, *Natl. Bur. Stand. Circ. (U.S.)*, No. 539, 1957, **7**, 38, (*cryst struct*)
Hird, F.J.B. *et al.*, *Biochem. J.*, 1961, **80**, 612-615, (*use*)
Sterzel, W. *et al.*, *Z. Anorg. Allg. Chem.*, 1971, **383**, 231, (*ir*)
Okado, J. *et al.*, *J. Phys. Soc. Jpn.*, 1972, **32**, 1412, (*K-39 nmr*)
Kondilenko, I.I. *et al.*, *Opt. Spektrosk.*, 1975, **38**, 689, (*Raman*)
Harrison, J.J. *et al.*, *J.O.C.*, 1981, **46**, 2169, (*use*)
Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 2896A, (*haz*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2284-2285
Himata, K. *et al.*, *Food Addit. Contam.*, 1997, **14**, 809-818, (*anal*)
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, PKY300