

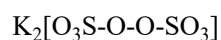


>>Entry Name: Potassium persulfate ($K_2S_2O_8$)

ENTRY UNDER REVIEW

Synonym(s): Potassium peroxodisulfate(VI). Peroxydisulfuric(VI) acid, dipotassium salt, 8CI

CAS Registry Number: 7727-21-1



Molecular Formula: $K_2O_8S_2$

Molecular Weight: 270.324

Accurate Mass: 269.830874

Percentage Composition: K 28.93%; O 47.35%; S 23.72%

Source/Synthesis: Cryst. from soln. after electrolysis of K_2SO_4 at low temp. and high current density

Use/Importance: Commercially available. Powerful oxidising agent; often used in the presence of $Ag^{(+)}$ which acts as a catalyst. Used as an initiator for alkene polym. in aq. systems, esp. for manuf. of polyacrylonitrile and its copolymers. Also used for etching printed circuit boards, bleaching and as an oxidant in org. synth.

Physical Description: Colourless triclinic cryst. Dec. on heating to $K_2S_2O_7$ with loss of O_2

Solubility: Mod. sol. H_2O (6.2 g per 100 cm^3 at 25°)

Other Data: $\Delta H_f^\circ -1918\text{ kJ mol}^{-1}$

Hazard & Toxicity: Oxidiser, irritant. LD_{50} (rat, orl) 802 mg/kg

Aldrich: 21622-4

Fluka: 60490

Sigma: P7715

References:

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Simon, A. *et al.*, *Z. Anorg. Allg. Chem.*, 1962, **315**, 196, (Raman)

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House, J.E. *et al.*, *Thermochim. Acta*, 1978, **24**, 117, (stability)

Thiele, W. *et al.*, *Chem. Technol.*, 1979, **31**, 198, (synth)

Vacek, V. *et al.*, *Chem. Prum.*, 1982, **32**, 178, (props)

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