



>>Entry Name: Rubidium perchlorate

Synonym(s): Chloric(VII) acid, rubidium salt. Rubidium chlorate(VII). Perchloric acid, rubidium salt, 8Cl

CAS Registry Number: 13510-42-4

RbClO₄

Molecular Formula: ClO₄Rb

Molecular Weight: 184.918

Accurate Mass: 183.860306

Percentage Composition: Cl 19.17%; O 34.61%; Rb 46.22%

Source/Synthesis: Prepd. by electrolytic oxidation of RbClO₃ or by neutralisation of Rb₂CO₃ with HClO₄ in aq. soln.

Use/Importance: Oxidising agent

Physical Description: Colourless orthorhombic cryst. becoming cubic at 279°

Solubility: Sol. H₂O (approx. 0.5 g per 100 cm³ at 0°; 18 g per 100 cm³ at 100°); spar. sol. MeOH (0.06 g per 100 cm³ at 25°); prac. insol. EtOH (9x10⁻³ g per 100 cm³ at 25°)

Other Data: $\Delta H_f^\circ -437 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -308 \text{ kJ mol}^{-1}$. $S^\circ 164 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Explosive when mixed with organic or organometallic compds.

Aldrich: 40060-2

Sigma: R6627

References:

Braekken, H. *et al.*, *Z. Kristallogr.*, 1930, **75**, 538, (*polymorphs*)

Gmelin Handbook Inorg. Chem., Syst. No. 24, 1955, 160, (*rev, bibl*)

Swanson, H.E. *et al.*, *NBS Monogr. (U.S.)*, 1963, **2**, 30, (*cryst struct*)

Lutz, H.D., *Spectrochim. Acta A*, 1983, **39**, 7, (*ir, Raman, synth*)

Baltisberger, J.H. *et al.*, *J.A.C.S.*, 1992, **114**, 7489, (*Rb-87 nmr*)