



>>Entry Name: Rubidium nitrate (RbNO₃)

Synonym(s): Nitric acid, rubidium salt, 8Cl

CAS Registry Number: 13126-12-0

RbNO₃

Molecular Formula: NO₃Rb

Molecular Weight: 147.473

Accurate Mass: 146.899613

Percentage Composition: N 9.50%; O 32.55%; Rb 57.95%

Source/Synthesis: Prepd. from Rb₂SO₄ + Ba(NO₃)₂ in aq. soln. or by neutralisation of Rb₂CO₃ with HNO₃ in aq. soln.

Use/Importance: Commercially available

Physical Description: Colourless hexagonal cryst.; hygroscopic; undergoes hexagonal to cubic transition at 164°; cubic to tetragonal transition at 219°; tetragonal to cubic transition at 291°

Melting Point: Mp 310°

Solubility: V. sol. (44 g per 100 cm³ at 16°; 452 g per 100 cm³ at 100°); spar. sol. Me₂CO

Other Data: ΔH_f° -495 kJ mol⁻¹; ΔG_f° -396 kJ mol⁻¹; S° 147 J K⁻¹ mol⁻¹

Hazard & Toxicity: Oxidiser, irritant

Aldrich: 28929-9

Fluka: 84010

Sigma: R1377

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1257D, (*ir*)

Breton, A., *C. R. Hebd. Seances Acad. Sci.*, 1941, **213**, 653, (*uv*)

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Vratny, F., *Appl. Spectrosc.*, 1959, **13**, 59, (*ir*)

Greenberg, J., *J. Chem. Phys.*, 1960, **33**, 900, (*ir*)

Brown, R.N. *et al.*, *Acta Cryst.*, 1962, **15**, 974, (*cryst struct, polymorphs*)

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