



>>Entry Name: Sodium carbonate monohydrate

Synonym(s): Carbonic acid, disodium salt monohydrate. Crystal carbonate

CAS Registry Number: 5968-11-6

$\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$

Molecular Formula: $\text{CH}_2\text{Na}_2\text{O}_4$

Molecular Weight: 124.004

Accurate Mass: 123.974844

Percentage Composition: C 9.69%; H 1.63%; Na 37.08%; O 51.61%

Source/Synthesis: Commercially available. Synth. by thermal dec. of the decahydrate over conc. H_2SO_4

Physical Description: Colourless orthorhombic deliquescent cryst. Dec. on heating by H_2O loss ($-\text{H}_2\text{O}$ at 100°)

Solubility: V. sol. H_2O ; insol. EtOH, Et_2O

Other Data: $\Delta H_f^\circ -1433.9 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -1291.3 \text{ kJ mol}^{-1}$; $S^\circ 170 \text{ J K}^{-1} \text{ mol}^{-1}$

Hazard & Toxicity: Irritant

Aldrich: 23095-2

Fluka: 71355

Sigma: S5903

>>Variant: Mineral-form

Synonym(s): Thermonatrite

CAS Registry Number: 15490-92-3

Molecular Formula: $\text{CH}_2\text{Na}_2\text{O}_4$

Molecular Weight: 124.004

Accurate Mass: 123.974844

Percentage Composition: C 9.69%; H 1.63%; Na 37.08%; O 51.61%

Source/Synthesis: Deposit from saline lakes and in arid areas

Physical Description: Colourless, grey or yellow cryst.

References:

Harper, J.P., *Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1936, **95**, 266, (*cryst struct*)

Bauer, T.W. *et al.*, *Can. J. Chem.*, 1952, **30**, 76, (*thermochem data*)

Kirk-Othmer Encycl. Chem. Technol., 2nd edn., Wiley, 1963, **18**, 458, (*rev, uses*)

Gmelin Handbook Inorg. Chem., Syst. No. 21, 1964, **1**, 309; 1966, **3**, 1328, (*rev, bibl*)

Wu, K.K. *et al.*, *Acta Cryst. B*, 1975, **31**, 890, (*nd, cryst struct*)

Groenveld, F. *et al.*, *J. Chem. Thermodyn.*, 1983, **15**, 881, (*cryst struct*)

Sigma-Aldrich Library of Chemical Safety Data, 1988, **2**, 3135A, (*haz*)