



>>Entry Name: Potassium carbonate (K_2CO_3)

ENTRY UNDER REVIEW

Synonym(s): Carbonic acid, dipotassium salt, 8Cl. Pearl ash

CAS Registry Number: 584-08-7

K_2CO_3

Molecular Formula: CK_2O_3

Molecular Weight: 138.206

Accurate Mass: 137.912159

Percentage Composition: C 8.69%; K 56.58%; O 34.73%

Source/Synthesis: Synth. by reaction of CO_2 with KOH dissolved in MeOH or EtOH, or by thermal dehydration of the sesquihydrate

Use/Importance: Commercially available. Catalyst for coal gasification. Also used in photographic developers, fire extinguishers and the production of speciality glasses and ceramics

Biological Use/Importance: Diuretic

Physical Description: Hygroscopic colourless monoclinic cryst. Undergoes polymorphic change at 250° . Dec. on heating with CO_2 loss

Melting Point: Mp 901°

Solubility: V. sol. H_2O (112 g per 100 cm^3 at 20° ; 156 g per 100 cm^3); insol. EtOH, Me_2CO

Other Data: $\Delta H_f -1150\text{ kJ mol}^{-1}$; $\Delta G_f -1065\text{ kJ mol}^{-1}$; $S^\circ 155.5\text{ J K}^{-1}\text{ mol}^{-1}$

Hazard & Toxicity: Irritant

Aldrich: 31026-3

Fluka: 60110

Sigma: P4379

>>Derivative: Sesquihydrate

CAS Registry Number: 6381-79-9

Molecular Formula: $\text{C}_2\text{H}_6\text{K}_4\text{O}_9$

Molecular Weight: 330.457

Accurate Mass: 329.856013

Percentage Composition: C 7.27%; H 1.83%; K 47.33%; O 43.57%

Source/Synthesis: Cryst. from aq. solns. of K_2CO_3 at 40°

Use/Importance: Commercially available

Physical Description: Colourless monoclinic cryst. Dec. on heating with H_2O loss ($-\frac{1}{2}\text{ H}_2\text{O}$ at 235° ; $-1\frac{1}{2}\text{ H}_2\text{O}$ at 273°)

Solubility: V. sol. H_2O (268 g per 100 cm^3 at 100°); insol. EtOH

Hazard & Toxicity: Irritant

Aldrich: 24355-8

Fluka: 60115

Sigma: P2808

References:

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