



>>Entry Name: Aluminium potassium sulfate (AlK(SO₄)₂)

ENTRY UNDER REVIEW

Synonym(s): Sulfuric acid, aluminium potassium salt (2:1:1), 8Cl. Anhydrous alum

CAS Registry Number: 10043-67-1

Related CAS Registry Numbers(s): 14635-80-4

Extra CAS Registry Numbers(s): 15007-61-1

KAl(SO₄)₂

Molecular Formula: AlKO₈S₂

Molecular Weight: 258.207

Accurate Mass: 257.848706

Percentage Composition: Al 10.45%; K 15.14%; O 49.57%; S 24.84%

General Statement: Struct. comprises alternate layers of six coordinate Al³⁽⁺⁾ and K⁽⁺⁾ with SO₄²⁽⁻⁾ between

Source/Synthesis: Synth. by dehydration of the alum

Use/Importance: Commercially available. Coagulating agent for rubber; also used in deodorants and waste water treatment

Physical Description: Colourless hexagonal plates (H₂SO₄)

Solubility: Sol. H₂O (7.74 g per 100 cm³ at 30°); insol. EtOH

Other Data: Corresp. NH₄⁽⁺⁾, Rb⁽⁺⁾, Cs⁽⁺⁾ salts also descr. ΔH_f° -2470 kJ mol⁻¹; ΔG_f° -2240 kJ mol⁻¹; S° 205 J K⁻¹ mol⁻¹

Fluka: 60055

>>Derivative: Dodecahydrate

Synonym(s): Potassium alum. **Kalinite**. Hexaaquaaluminium(3+) hexaaquapotassium(1+) bis(sulfate). α -Alum

CAS Registry Number: 7784-24-9

Molecular Formula: AlH₂₄KO₂₀S₂

Molecular Weight: 474.389

Accurate Mass: 473.975486

Percentage Composition: Al 5.69%; H 5.10%; K 8.24%; O 67.45%; S 13.52%

Source/Synthesis: May be synth. from Al₂O₃, H₂SO₄ + K₂SO₄. Mineral

Use/Importance: Mordant. Used in H₂O purif., paper sizing, dressing skins. Commercially available

Physical Description: Colourless cryst. (H₂O)

Melting Point: Mp 105°

Solubility: Sol. H₂O (11 g per 100 cm³ at 20°); insol. EtOH, Me₂CO

Other Data: Dec. on heating (-9H₂O at 64.5°, -12H₂O at 200°)

Aldrich: 23708-6

Fluka: 60060

Sigma: A6435

References:

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