



>>Entry Name: Aluminium sodium oxide (AlNaO₂)

ENTRY UNDER REVIEW

Synonym(s): Sodium aluminium oxide (NaAlO₂). Sodium aluminate (NaAlO₂)

CAS Registry Number: 1302-42-7

NaAlO₂

Molecular Formula: AlNaO₂

Molecular Weight: 81.97

Accurate Mass: 81.961136

Percentage Composition: Al 32.92%; Na 28.05%; O 39.04%

General Statement: NaFeO₂ type struct.

Source/Synthesis: α-form obt. from Al₂O₃ and Na₂CO₃ or from Aluminium hydroxide [HRS97-F](#) and NaOH. β-form is formed at 1.1 x 10⁴ atm. at 900°. α and β designation is reversed in earlier literature

Use/Importance: Used in water treatment, sizing of paper; raw material for manuf. of zeolites, ceramics and catalysts in petroleum industry

Physical Description: White cryst. or powder

Melting Point: Mp 1700°

Other Data: Various hydrated forms known. cf. also Aluminium sodium oxide (Al₅NaO₈) [JZF32-V](#). For species in soln. see Aluminate (Al(OH₄)⁽⁻⁾) [JPG43-M](#). $\Delta H_{f298}^{\circ} -1133.2$ kJ mol⁻¹; $S^{\circ} 70.4$ J K⁻¹ mol⁻¹

References:

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Peterson, G.E. *et al.*, *J. Chem. Phys.*, 1969, **51**, 2610, (*Na-23 nqr*)
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Müller, D. *et al.*, *Chem. Phys. Lett.*, 1981, **79**, 59, (*Al-27 nmr*)
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