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>>Entry Name: Aluminium nitride (AlN)

CAS Registry Number: 24304-00-5

AlN

**Molecular Formula:** AlN

**Molecular Weight:** 40.988

**Accurate Mass:** 40.984613

**Percentage Composition:** Al 65.83%; N 34.17%

**General Statement:** Wurtzite struct.

**Source/Synthesis:** Synth. from Al and N<sub>2</sub> or Al<sub>2</sub>O<sub>3</sub>, C and N<sub>2</sub> at 1400-1500°; from R<sub>3</sub>AlNH<sub>3</sub> or Cl<sub>3</sub>AlNH<sub>3</sub> at 1200°; obt. by chemical vapour deposition methods. High purity materials synth. from organometallic or polymeric precursors by either a pyrolysis or carbothermal reduction process

**Use/Importance:** Used in high power integrated circuits and acoustic devices. Refractory. Hard. Commercially available

**Physical Description:** White air stable prismatic needles. Stable in acid. Slow dec. in hot conc. alkali

**Melting Point:** Mp 2400°

**Other Data:**  $E_g$  6.2 eV. Electrical cond.  $10^{-12} \Omega^{-1} \text{ m}^{-1}$ . Thermal cond.  $320 \text{ W m}^{-1} \text{ K}^{-1}$ . Relative permittivity  $\epsilon$  4.8.  $\Delta H_{f298}^\circ -318 \text{ kJ mol}^{-1}$ ;  $S_{298}^\circ 20.1 \text{ J K}^{-1} \text{ mol}^{-1}$

**Aldrich:** 24190-3

**References:**

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