



>>Entry Name: Aluminium carbides

Molecular Formula: [CAI]

>>Variant: Aluminium carbide (Al₂C)

CAS Registry Number: 151339-49-0

Molecular Formula: CAI₂

Molecular Weight: 65.974

Accurate Mass: 65.963078

Percentage Composition: C 18.21%; Al 81.79%

General Statement: Synth. in Ar matrix and identified by ir spectroscopy

Source/Synthesis: Synth. by laser evapn. of Al/C mixt.

>>Variant: Aluminium carbide (Al₂C₂)

CAS Registry Number: 154427-19-7

Molecular Formula: C₂Al₂

Molecular Weight: 77.985

Accurate Mass: 77.963078

Percentage Composition: C 30.80%; Al 69.20%

General Statement: Synth. in Ar matrix and identified by ir spectroscopy

Source/Synthesis: Synth. by laser evapn. of Al/C mixt.

>>Variant: Aluminium carbide (AlC)

CAS Registry Number: 37265-94-4

Molecular Formula: CAI

Molecular Weight: 38.993

Accurate Mass: 38.981539

Percentage Composition: C 30.80%; Al 69.20%

General Statement: Synth. in Ar matrix and identified by epr, ir electronic vis and fluorescence spectroscopy

Source/Synthesis: Synth. by laser evapn. of Al/C mixt. or Al₄C₃, or by discharge of CS₂/Ar using Al electrodes

>>Variant: Aluminium carbide (Al₄C₃)

CAS Registry Number: 1299-86-1

Molecular Formula: C₃Al₄

Molecular Weight: 143.959

Accurate Mass: 143.926156

Percentage Composition: C 25.03%; Al 74.97%

General Statement: Carbon has 5 (distorted tdp) or 6 (octahedral) coord.; Al 4 (tetrahedral) coord.

Source/Synthesis: Synth. from the elements at 1000°

Physical Description: Moisture-sensitive pale yellow cryst.

Other Data: Dissoc. at 1600° to Al + C. Low conc. Al₂C₂ detected in gas by ms. $\Delta H_f^\circ -207.3 \text{ kJ mol}^{-1}$. Dissolves in hot H₂O or acids to give CH₄

Aldrich: 24187-3

Fluka: 6210

>>Variant: Aluminium carbide (AlC₂)

CAS Registry Number: 37297-57-7

Molecular Formula: C₂Al

Molecular Weight: 51.004

Accurate Mass: 50.981539

Percentage Composition: C 47.10%; Al 52.90%

General Statement: Synth. in Ar matrix and identified by epr spectroscopy

Source/Synthesis: Synth. by laser evapn. of Al₄C₃

References: