



CAS Registry Number: 12045-71-5

Molecular Formula: B₄Cr₃

Molecular Weight: 199.232

Accurate Mass: 199.858747

Percentage Composition: B 21.71%; Cr 78.29%

General Statement: Ta₃B₄-type struct. Orthorhombic

Source/Synthesis: Synth. from Cr₂O₃ + B at 1600° or from Cr + B

Physical Description: Thin plates or thick trapezoidal plates

Melting Point: Mp 1950°

>> **Variant: Chromium boride (Cr₂B₃),** 9Cl, 8Cl

Synonym(s): Dichromium triboride

CAS Registry Number: 100629-17-2

Molecular Formula: B₃Cr₂

Molecular Weight: 136.425

Accurate Mass: 136.908933

Percentage Composition: B 23.77%; Cr 76.23%

General Statement: Orthorhombic lattice

Source/Synthesis: Synth. from Cr + B in Al at ≤ 1500°

Other Data: Reacts with HF + HNO₃ + H₂SO₄ at 150°

>> **Variant: Chromium boride (CrB₂),** 9Cl, 8Cl

Synonym(s): Chromium diboride

CAS Registry Number: 12007-16-8

Molecular Formula: B₂Cr

Molecular Weight: 73.618

Accurate Mass: 73.959119

Percentage Composition: B 29.37%; Cr 70.63%

General Statement: Hexagonal AlB₂-type struct. Also described as orthorhombic Mn₄B type

Source/Synthesis: Synth. from Cr₂O₃ + B at 1600° or Cr₂O₃ + B₂O₃/Mg at 1200°, or BCl₃ + Cr₂S₃ under H₂ at 700-900°

Physical Description: Hard and metallic dendritic or hexagonal planar cryst. or hexagonal prisms

Melting Point: Mp 2130°

Other Data: When finely divided, begins to oxidise in air at *ca.* 650°. Dissolves in H₂SO₄ aq. (1:2) and hot HNO₃. Stable to 5-20% NaOH aq., but added H₂O₂ accelerates dec. Attacked by fused NaOH

Aldrich: 33675-0

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