



>>Entry Name: Chromium borides

Related CAS Registry Numbers(s): 12653-55-3

Molecular Formula: [BCr]

General Statement: In addition to phases described here, CrB₆ may exist

>>>Variant: Chromium boride (Cr₄B), 9Cl, 8Cl

Synonym(s): Tetrachromium boride

CAS Registry Number: 12006-81-4

Molecular Formula: BCr₄

Molecular Weight: 218.795

Accurate Mass: 218.771341

Percentage Composition: B 4.94%; Cr 95.06%

General Statement: Mn₄B-type struct.

Source/Synthesis: Synth. from Cr₂S₃ + BCl₃ under H₂ at 800-1000°

Melting Point: Mp 1750° (1680°)

Other Data: Resistant to conc. HCl. Dissolved by H₂SO₄ + HNO₃

>>>Variant: Chromium boride (Cr₂B), 9Cl, 8Cl

Synonym(s): Dichromium monoboride

CAS Registry Number: 12006-80-3

Molecular Formula: BCr₂

Molecular Weight: 114.803

Accurate Mass: 114.890323

Percentage Composition: B 9.42%; Cr 90.58%

General Statement: Mn₄B or CuAl₂-type structs. suggested. Existence in doubt

Melting Point: Mp 1875°

>>>Variant: Chromium boride (Cr₅B₃), 9Cl, 8Cl

CAS Registry Number: 12007-38-4

Molecular Formula: B₃Cr₅

Molecular Weight: 292.414

Accurate Mass: 292.73046

Percentage Composition: B 11.09%; Cr 88.91%

General Statement: Tetragonal lattice

Source/Synthesis: Synth. from elements

Melting Point: Mp 2000°

>>>Variant: Chromium boride (Cr₃B₂), 9Cl, 8Cl

Synonym(s): Trichromium diboride

CAS Registry Number: 12045-40-8

Molecular Formula: B₂Cr₃

Molecular Weight: 177.61

Accurate Mass: 177.840137

Percentage Composition: B 12.17%; Cr 87.83%

Melting Point: Mp 2000° (1960°)

>>>Variant: Chromium boride (CrB), 9Cl, 8Cl

Synonym(s): Chromium monoboride

CAS Registry Number: 12006-79-0

Molecular Formula: BCr

Molecular Weight: 62.807

Accurate Mass: 62.949814

Percentage Composition: B 17.21%; Cr 82.79%

General Statement: Orthorhombic with infinite zig-zag B atom chains which run through trigonal Cr atom lattice. Each B atom at centre of trigonal prism with Cr atom at each corner

Source/Synthesis: Synth. from Cr₂O₃ + B at 1500° or from CrCl₂ + BCl₃ + H₂

Physical Description: Hard and metallic pillars

Melting Point: Mp 2000°

Other Data: Strongly paramagnetic. Stable at 1000-1300°

Aldrich: 33676-9