



>>Entry Name: Chromium carbides

CAS Registry Number: 11130-49-7

Related CAS Registry Numbers(s): 12011-61-9 12011-63-1 12075-39-7 12115-65-0 12169-46-9 12287-02-4 12326-98-6 12385-68-1 12427-37-1 12538-08-8 12540-12-4 12542-51-7 12549-29-0 12552-55-5 74188-14-0 77908-34-0 92458-04-3 96118-50-2 110771-78-3 112510-35-7 123033-85-2

Molecular Formula: [CCr]

>>Variant: Chromium carbide (Cr₂₃C₆)

CAS Registry Number: 12105-81-6

Molecular Formula: C₆Cr₂₃

Molecular Weight: 1267.976

Accurate Mass: 1266.631707

Percentage Composition: C 5.68%; Cr 94.32%

General Statement: Complex fcc struct.

Source/Synthesis: Synth. by arc-melting Cr and C under argon

Physical Description: Cryst.

Melting Point: Mp 1550 dec.°

>>Variant: Chromium carbide (Cr₇C₃)

CAS Registry Number: 12075-40-0

Molecular Formula: C₃Cr₇

Molecular Weight: 400.006

Accurate Mass: 399.583563

Percentage Composition: C 9.01%; Cr 90.99%

General Statement: Hexagonal struct. Isostructural with Mn₇C₃

Use/Importance: Used in alloys and refractory coatings

Physical Description: Cryst. or powder

Melting Point: Mp 1665°

Other Data: As powder, oxidises =700°

>>Variant: Chromium carbide (Cr₃C₂)

CAS Registry Number: 12012-35-0

Molecular Formula: C₂Cr₃

Molecular Weight: 180.01

Accurate Mass: 179.821527

Percentage Composition: C 13.34%; Cr 86.66%

General Statement: Orthorhombic. The Cr atoms form trigonal prisms sharing edges with other prisms. The C atoms are found in the centres of the prisms

Source/Synthesis: Obt. from pure Cr₂O₃ and carbon black heated at 1600° in presence of H₂

Use/Importance: Used in acid- and wear-resistant alloys and refractory materials

Physical Description: Grey

Melting Point: Mp 1810°. Mp 1895°

Aldrich: 40268-0

>>Variant: Chromium carbide (CrC)

CAS Registry Number: 12011-60-8

Molecular Formula: CCr

Molecular Weight: 64.007

Accurate Mass: 63.940509

Percentage Composition: C 18.77%; Cr 81.23%

Other Data: Various other phases known

References:

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Storms, E.K., *The Refractory Carbides*, Academic Press, N. Y., 1967, 102, (rev, bibl)

Rundqvist, S. *et al.*, *Acta Chem. Scand.*, 1969, **23**, 1191, (synth, cryst struct Cr₃C₂)

Rouault, M.A. *et al.*, *Ann. Chim. (Paris)*, Ser. 14, 1970, **5**, 461, (struct, Cr₇C₃)

Bowman, A.L. *et al.*, *Acta Cryst. B*, 1972, **28**, 3102, (cryst struct, synth, Cr₂₃C₆)

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