



>>Entry Name: Chromium(III) bromide (CrBr₃)

Synonym(s): Chromium tribromide. Chromic bromide

CAS Registry Number: 10031-25-1



Molecular Formula: Br₃Cr

Molecular Weight: 291.708

Accurate Mass: 288.755517

Percentage Composition: Br 82.18%; Cr 17.82%

General Statement: BiI₃-type layer struct. Interatomic distance Cr-Br 257 pm

Source/Synthesis: Can be synth. electrochemically using Cr anode and liq. Br₂

Physical Description: Dark green cryst. Easily oxidised in air; easily reduced by H₂

Melting Point: Mp 812° (1130° est.)

Solubility: Insol. cold H₂O; sol. C₆H₆

Other Data: μ_{eff} = 3.94μ_B (θ -51, 298K). Ferromagnetic. Begins to dissociate at 700°

>>Variant: Chromium(III) bromide hexahydrate

CAS Registry Number: 13478-06-3

Molecular Formula: Br₃CrH₁₂O₆

Molecular Weight: 399.799

Accurate Mass: 396.818907

Percentage Composition: Br 59.96%; Cr 13.01%; H 3.03%; O 24.01%

>>Derivative: Violet form

Synonym(s): Hexaaquachromium(3+) tribromide

Physical Description: Blue-grey-violet cryst.

Solubility: V. sol. H₂O; insol. EtOH

>>Derivative: Green form

Synonym(s): Tetraaquadibromochromium(1+) bromide dihydrate

CAS Registry Number: 82676-67-3

Source/Synthesis: Synth. from CrO₃ and excess 50% HBr

Physical Description: Green deliquescent cryst.; stable in solid state

Solubility: Sol. H₂O, EtOH; insol. Et₂O

Other Data: On warming in soln., converts to violet form

References:

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