



>>Entry Name: Terbium borides

Molecular Formula: [BTb]

>>Variant: Terbium boride (TbB₄), 9Cl, 8Cl

Synonym(s): Terbium tetraboride

CAS Registry Number: 12688-53-8

Molecular Formula: B₄Tb

Molecular Weight: 202.169

Accurate Mass: 202.962562

Percentage Composition: B 21.39%; Tb 78.61%

Source/Synthesis: Synth. from Tb₂O₃ + B₂O₃ + Mg at 1200°

Physical Description: Golden cryst.

Melting Point: Mp *ca.* 2600°

Other Data: Transition to orthorhombic form at *ca.* 80K. Antiferromagnetic at low temp. $\mu_{\text{eff}} = 9.64\mu_{\text{B}}$

>>Variant: Terbium boride (TbB₆), 9Cl, 8Cl

Synonym(s): Terbium hexaboride

CAS Registry Number: 12008-31-0

Molecular Formula: B₆Tb

Molecular Weight: 223.791

Accurate Mass: 224.981172

Percentage Composition: B 28.99%; Tb 71.01%

Source/Synthesis: Synth. from Tb₂O₃ + B at 1500-1800° or Tb₂O₃ + B₂O₃ + Mg at 1200°

Use/Importance: Cathode material

Physical Description: Blue solid

Melting Point: Mp 2340°

Other Data: In vapour → TbB₄ + B. $\mu_{\text{eff}} = 9.43\mu_{\text{B}}$

>>Variant: Terbium boride (TbB₁₂), 9Cl, 8Cl

Synonym(s): Terbium dodecaboride

CAS Registry Number: 12589-39-8

Molecular Formula: B₁₂Tb

Molecular Weight: 288.657

Accurate Mass: 291.037002

Percentage Composition: B 44.94%; Tb 55.06%

Source/Synthesis: Synth. from oxide + B at 1500-1700° or Tb + B at 1650° and high pressure

Other Data: Antiferromagnetic

References:

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