



>>Entry Name: Tantalum borides

CAS Registry Number: 12653-85-9

Molecular Formula: [BTa]

>>Variant: Tantalum boride (Ta₂B), 9Cl, 8Cl

CAS Registry Number: 12045-26-0

Molecular Formula: BTa₂

Molecular Weight: 372.707

Accurate Mass: 372.905289

Percentage Composition: B 2.90%; Ta 97.10%

Source/Synthesis: Synth. from Ta₂O₅ + B at 2000°

>>Variant: Tantalum boride (Ta₃B₂), 9Cl, 8Cl

CAS Registry Number: 12228-67-0

Molecular Formula: B₂Ta₃

Molecular Weight: 564.466

Accurate Mass: 564.862586

Percentage Composition: B 3.83%; Ta 96.17%

>>Variant: Tantalum boride (TaB), 9Cl, 8Cl

Synonym(s): Tantalum monoboride

CAS Registry Number: 12007-07-7

Molecular Formula: BTa

Molecular Weight: 191.759

Accurate Mass: 191.957297

Percentage Composition: B 5.64%; Ta 94.36%

Source/Synthesis: Synth. from BN + Mo at 1500-1700°; Ta₂O₅ + B₂O₃ + Mg at 1200°, or B + Ta₂O₅ at 1200°

Aldrich: 33616-5

>>Variant: Tantalum boride (Ta₃B₄), 9Cl, 8Cl

CAS Registry Number: 12045-92-0

Molecular Formula: B₄Ta₃

Molecular Weight: 586.088

Accurate Mass: 586.881196

Percentage Composition: B 7.38%; Ta 92.62%

Source/Synthesis: Minor product in reaction between BN and Ta at 1500-1700°. Also synth. from Ta₂O₅ + B at 1100°

>>Variant: Tantalum boride (TaB₂), 9Cl, 8Cl

Synonym(s): Tantalum diboride

CAS Registry Number: 12007-35-1

Molecular Formula: B₂Ta

Molecular Weight: 202.57

Accurate Mass: 202.966602

Percentage Composition: B 10.67%; Ta 89.33%

Source/Synthesis: Synth. from BBr₃ + TaBr₅ or Ta oxide + B at 1500-1700°

Melting Point: Mp 3200°

Other Data: Resistant to HCl (1:1), H₂SO₄ (1:1), HNO₃ (1:1), HClO₄. Slowly reacts with H₂O₂ or acids containing H₂O₂; attacked by 5-20% aq. NaOH at 80° or fused NaOH.

At 1250° → TaB + B. Dissolved by HF

Aldrich: 33617-3

References: