>>**Entry Name: Titanium borides**

CAS Registry Number: 12673-91-5

Molecular Formula: [BTi]

>>**Variant: Titanium boride (Ti_2B),** 9CI, 8CI

CAS Registry Number: 12305-68-9
Molecular Formula: BTi_2
Molecular Weight: 106.571
Accurate Mass: 106.905199
Percentage Composition: B 10.14%; Ti 89.86%
Source/Synthesis: Synth. from TiB_2 + Zr at 1600°

>>**Variant: Titanium boride (TiB),** 9CI, 8CI
Synonym(s): Titanium monoboride

CAS Registry Number: 12007-08-8
Molecular Formula: BTi
Molecular Weight: 58.691
Accurate Mass: 58.957252
Percentage Composition: B 18.42%; Ti 81.58%

Source/Synthesis: Synth. from TiB_2 + Zr, or Ti
Use/Importance: Used in lightweight armour

>>**Variant: Titanium boride (TiB_2),** 9CI, 8CI
Synonym(s): Titanium diboride

CAS Registry Number: 12045-63-5
Molecular Formula: B_2Ti
Molecular Weight: 69.502
Accurate Mass: 69.966557
Percentage Composition: B 31.11%; Ti 68.89%

Source/Synthesis: Synth. from $TiCl_4$ + BCl_3 under H_2 at >1000°, or from Ti_2S_3 + B at 750-900°, or TiO_2 + B_2O_3 + C at 1500-1800°
Use/Importance: Employed in refractory materials and as metal coating
Physical Description: Brown solid
Melting Point: Mp 3225° (2850°)
Other Data: Attacked by HCl (1:1) ($\rightarrow H_2$), or H_2SO_4 (1:1) (rH_2, H_2S, and SO_2) and by HNO_3 (1:1). Also attacked by 5-20% aq. NaOH at 80°, or completely by NaOH-KNO_3 flux at 600-650°. V. hard, has high thermal conductivity, low resistivity, low solubility in metals at <1000°. Resistant to oxidation at 1100°. With N_2 at 1550° $\rightarrow$ TiN
Aldrich: 33628-9

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