



>>Entry Name: Titanium(IV) bromide (TiBr<sub>4</sub>), 11Cl

Synonym(s): Titanium tetrabromide

CAS Registry Number: 7789-68-6

TiBr<sub>4</sub>

Molecular Formula: Br<sub>4</sub>Ti

Molecular Weight: 367.496

Accurate Mass: 363.701291

Percentage Composition: Br 86.97%; Ti 13.03%

Source/Synthesis: Best synth. from Ti + Br<sub>2</sub> in a flow system at 300-600°. TiO<sub>2</sub> and C can be brominated at 600° or TiCl<sub>4</sub> caused to react with BBr<sub>3</sub>. Ti also reacts with molten PbBr<sub>2</sub>

Use/Importance: Has been used extensively in catalysts, esp. for olefin polym.

Physical Description: Amber yellow, readily hydrol. solid. There is a phase change at -15°

Melting Point: Mp 39°

Boiling Point: Bp 230-238°

Solubility: Sol. CHCl<sub>3</sub>, CCl<sub>4</sub>, Et<sub>2</sub>O, EtOH

Other Data:  $\Delta H_f -618 \text{ kJ mol}^{-1}$

Hazard & Toxicity: Lachrymator

Aldrich: 30779-3

Fluka: 89535

#### References:

Brand, P. *et al.*, *Z. Anorg. Allg. Chem.*, 1966, **348**, 257, (*cryst struct*)

Druce, P.M. *et al.*, *J.C.S.(A)*, 1971, 3595, (*synth*)

Elias, H. *et al.*, *Z. Anorg. Allg. Chem.*, 1972, **393**, 207, (*synth*)

Auge, O. *et al.*, *Actual. Chim.*, 1977, 27, (*synth*)