>>**Entry Name: Titanium phosphides**

CAS Registry Number: 12712-91-3
Related CAS Registry Numbers(s): 12202-49-2 71587-34-3 83295-31-2

Molecular Formula: [PTi]

>>**Variant: Titanium phosphide (Ti_3P),** 11Cl

CAS Registry Number: 12037-66-0
Molecular Formula: PTi_3
Molecular Weight: 174.614
Accurate Mass: 174.817603
Percentage Composition: P 17.74%; Ti 82.26%

Source/Synthesis: Synth. by heating Ti and red P in a sealed tube at 850°, arc-melting and annealing the product or by burning Ti in red P

>>**Variant: Titanium phosphide (Ti_5P_3),** 11Cl

CAS Registry Number: 12037-81-9
Molecular Formula: P_3Ti_5
Molecular Weight: 332.321
Accurate Mass: 332.661021
Percentage Composition: P 27.96%; Ti 72.04%

Source/Synthesis: Synth. from a melt of Cu, Ti and red P and removing the Cu matrix with HNO_3 or by arc-melting Ti and red P

>>**Variant: Titanium phosphide (TiP),** 11Cl

CAS Registry Number: 12037-65-9
Molecular Formula: PTi
Molecular Weight: 78.854
Accurate Mass: 78.921709
Percentage Composition: P 39.28%; Ti 60.72%

layers giving a P sequence ACBCACBC
Source/Synthesis: Synth. by heating Ti and red P; or by stirring a mixt. of $TiCl_4$ and Na_3P at r.t.; ignition occurs and NaCl may be extracted from the product
Physical Description: Both Ti-rich and P-rich phases may be obt.

>>**Variant: Titanium phosphide (TiP_2),** 11Cl

CAS Registry Number: 12037-76-2

Molecular Formula: P_2Ti
Molecular Weight: 109.827
Accurate Mass: 109.895471
Percentage Composition: P 56.40%; Ti 43.60%

Source/Synthesis: Synth. by heating the elements in a sealed tube, arc-melting then annealing the product or by heating the elements or TiP and P to 550°

References:

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Rundqvist, S. *et al.*, *J. Solid State Chem.*, 1979, **28**, 41, *(rev, cryst struct, Ti_3P)*
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