



>>Entry Name: Titanate(IV) ($\text{Ti}_2\text{O}_7^{6(-)}$), 11Cl

$[\text{Ti}_2\text{O}_7]^{6(-)}$

Molecular Formula: $\text{O}_7\text{Ti}_2^{6(-)}$

Molecular Weight: 207.756

Accurate Mass: 207.860299

Percentage Composition: O 53.91%; Ti 46.09%

>>Derivative: Hexa-Na salt

Synonym(s): Sodium titanium(IV) oxide ($\text{Na}_6\text{Ti}_2\text{O}_7$). Sodium titanate(IV) ($\text{Na}_6\text{Ti}_2\text{O}_7$)

CAS Registry Number: 37376-49-1

Molecular Formula: $\text{Na}_6\text{O}_7\text{Ti}_2$

Molecular Weight: 345.694

Accurate Mass: 345.798901

Percentage Composition: Na 39.90%; O 32.40%; Ti 27.70%

Other Data: One of three forms of the phase $\text{Na}_2\text{O} \cdot \text{TiO}_2$

>>Derivative: Tri-Sr salt

Synonym(s): Strontium titanium(IV) oxide ($\text{Sr}_3\text{Ti}_2\text{O}_7$), 9Cl. Strontium titanate(IV) ($\text{Sr}_3\text{Ti}_2\text{O}_7$)

CAS Registry Number: 12036-99-6

Molecular Formula: $\text{O}_7\text{Sr}_3\text{Ti}_2$

Molecular Weight: 470.616

Accurate Mass: 471.577156

Percentage Composition: O 23.80%; Sr 55.85%; Ti 20.35%

Source/Synthesis: Synth. by heating SrCO_3 and TiO_2 to 1240-1400° for several weeks

Use/Importance: Can be used as a photochemical electrode

Other Data: Struct. comprises slabs of SrTiO_3 three layers thick joined by layers rich in Sr. Non-stoichiometric phases also known

>>Derivative: Di-La salt

Synonym(s): Lanthanum titanium(IV) oxide ($\text{La}_2\text{Ti}_2\text{O}_7$). Lanthanum titanate

CAS Registry Number: 12031-47-9

Molecular Formula: $\text{La}_2\text{O}_7\text{Ti}_2$

Molecular Weight: 485.567

Accurate Mass: 485.672993

Percentage Composition: La 57.21%; O 23.06%; Ti 19.72%

Source/Synthesis: Synth. by infra-red melting of pressed mixture of La_2O_3 and TiO_2 under flowing $\text{N}_2 + \text{O}_2$

Physical Description: Light straw-coloured cryst.

Other Data: The crystal contains layers of TiO_6 corner-shared octahedra with La coordinated by 8 or 9 oxygens

Aldrich: 40367-9

References:

Tilley, R.J.D., *J. Solid State Chem.*, 1977, **21**, 293, (synth, cryst struct, Sr salt)

Gray, T.J., *J. Power Sources*, 1981, **6**, 121, (synth, cryst struct, Sr salt)

Hill, W.A., *J. Am. Ceram. Soc.*, 1985, **68**, C266, (reformulation, Na salt)

Paranthaman, M. *et al.*, *Mater. Chem. Phys.*, 1986, **14**, 349, (photochem electrode, Sr salt)

Schmolle, H.W. *et al.*, *Acta Cryst. B*, 1993, **49**, 235, (La salt, synth, cryst struct, em)