



Product Information

Titanium(IV) oxide

Product Number **T 8141**
Store at Room Temperature

Product Description

Molecular Formula: TiO_2
Molecular Weight: 79.90
CAS Number: 1317-70-0
Melting point: 1855 °C¹
Synonyms: titanium dioxide

Titanium (IV) dioxide occurs in nature in different crystalline mineral forms, which include rutile (tetragonal), anatase, and octahedrite (tetragonal). Rutile is used as a ceramic colorant and in welding rod coating materials. Anatase is used in acid resistant vitreous enamels, welding rod coatings, specification paints, inks and plastics, and paper filling and coating.¹ This product is almost pure anatase with almost no rutile, by X-ray crystallography studies. The particle size is approximately 325 mesh (< 44 μm).

Titanium dioxide has been used to develop coated surfaces for capillary electrophoresis and open-tubular capillary electrochromatography.² TiO_2 is also frequently used in photocatalytic studies on organic compounds.^{3,4} Studies on titanium dioxide-cell interactions, with relation to cell response and implants, have been published.^{5,6}

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in hot concentrated H_2SO_4 and HF. It is insoluble in water, HCl, HNO_3 , and dilute H_2SO_4 .¹

References

1. The Merck Index, 12th ed., Entry# 9612.
2. Fujimoto, C., Titanium dioxide coated surfaces for capillary electrophoresis and capillary electrochromatography. *Electrophoresis*, **23(17)**, 2929-2937 (2002).
3. Mogyorosi, K., et al., TiO_2 -based photocatalytic degradation of 2-chlorophenol adsorbed on hydrophobic clay. *Environ. Sci. Technol.*, **36(16)**, 3618-3624 (2002).
4. Goutailler, G., et al., Degradation pathway of dicyclanil in water in the presence of titanium dioxide. Comparison with photolysis. *J. Agric. Food Chem.*, **50(18)**, 5115-5120 (2002).
5. Manso, M., et al., Testing biomaterials by the in-situ evaluation of cell response. *Biomol. Eng.*, **19(2-6)**, 239-242 (2002).
6. Eisenbarth, E., et al., Interactions between cells and titanium surfaces. *Biomol. Eng.*, **19(2-6)**, 243-249 (2002).

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