



ELUVSAFE – TDOx G2™ (Titanium Dioxide)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White fine powder; granules; nanoparticles
Physical Form	Powder
Odor	Odorless
Molecular Weight (g/mol)	79.866
Density or Specific Gravity	4.26 g/mL at 25 °C(lit.)
Viscosity	<1.5mPa.s
Refractive Index	2.61
pH (if aqueous solution)	7-8 (100g/l, H2O, 20°C)(slurry)
Chemical Properties	
Water Solubility	Insoluble
Thermal Properties	
Melting Point	3380 °F (decomposes)
Boiling Point	4532 to 5432 °F at 760 mmHg
Flash Point	2500-3000°C

2. Processing Methods



Cosmetic sunscreen cream

Use TiO₂ at 2-25% depending on desired SPF, and combine with zinc oxide or chemical filters for broad-spectrum protection. Ensure good suspension by using thickeners or stabilizers to prevent settling in emulsions.

Key Ingredients	Indicative Dosage (% w/w)
Castor Oil	30%
Beeswax	25%
Candelilla Wax	10%
Cocoa Butter	5%
Shea Butter	5%
Jojoba Oil	5%
Titanium Dioxide	2%
Iron Oxides	0.5%
Vitamin E Acetate	1%
Tocopherol	0.5%
Preservative	0.5%
Fragrance	0.5%
Deionized Water	15%

Paints

Disperse titanium dioxide using high-speed mixing before adding binders to ensure optimal opacity and gloss. Use appropriate dispersants to prevent flocculation and maintain consistent particle distribution.

Key Ingredients	Indicative Dosage (% w/w)
Binder (Resin)	20-40%
Fillers/Extenders	10-30%
Additives	1-5%
Titanium Dioxide	10-20%



Liquid Foundation

In foundation formulation, add Phenoxyethanol during the cool-down phase to preserve its antimicrobial properties. Stir gently to ensure even distribution without affecting emulsion stability or pigment dispersion.

Key Ingredients	Indicative Dosage (% w/w)
Dimethicone	10%
Glycerin	5%
Titanium Dioxide	3%
Phenoxyethanol	0.8%
Triethanolamine	0.3%
Carbomer	0.5%
Water	80-85%

Lip balm

In lip balm formulation, disperse Titanium Dioxide in the oil or wax phase using a high-shear mixer to ensure even distribution and prevent clumping.

Key Ingredients	Indicative Dosage (% w/w)
Castor Oil	30%
Beeswax	25%
Candelilla Wax	10%
Cocoa Butter	5%
Shea Butter	5%
Joboba Oil	5%
Titanium Dioxide	2%
Iron Oxide	0.5%
Vitamin E Acetate	1%
Tocopherol	0.5%

3. Dosing by Application

Products	Authorized dosage %
Sunscreen Lotions, Creams	2-25%
Cosmetics Skin Care Creams, Lotions	Upto 25%
Paints/Coatings	10-25%



4. Grade Comparison Summary

Parameter	Technical Grade
Purity (%)	94-98%
Crystalline Form	Rutile or Anatase (depending on application)
Appearance	White to slightly off-white powder
UV Protection Capability	None unless treated for coatings
Solubility	Insoluble
Regulatory Compliance	TSCA, REACH
Typical Applications	Paints, plastics, ceramics, paper, inks

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

EXPLORE ELCHEMY'S PRODUCT PORTFOLIO

ELUVSAFE - TDOx G2™ (Titanium Dioxide) | [Browse Catalog](#) | [Connect with us](#)