

1. Basic Physical Properties

Parameter	Value	Test Standard	Notes
Chemical Formula	TiO ₂	–	99.5%+ purity (rutile phase)
Crystal Structure	Rutile (tetragonal)	XRD	High refractive index (2.48-2.56)
Appearance	Fine white powder	Visual Inspection	Free-flowing, non-toxic
Density	4.0-4.2 g/cm ³	ISO 787-10	Optimized for coating dispersion
Bulk Density	0.6-0.8 g/mL	ASTM D1895	Reduced packaging costs
Melting Point	1,843°C	TGA	Heat-resistant for plastics

2. Optical & Functional Properties

Parameter	Value	Test Standard
Whiteness (CIE L*)	≥98.5	ISO 787-23
遮盖力 (Hiding Power)	160-170 g/m ²	ASTM D3446
消色力 (Tinting Strength)	≥1,900 (Reynolds Index)	ISO 787-24
Median Particle Size	0.25-0.35 μm	Laser Diffraction
Oil Absorption	16-20 g/100g	ISO 787-5
pH Value	7.0-9.0 (neutral-stable)	ISO 787-9

3. Surface Treatment & Stability

Parameter	Value	Technology
Inorganic Coating	Zirconium-Aluminum (5-8%)	Proprietary Process
Organic Treatment	Silane/Polyol (0.5-1.0%)	Surface Modification
105°C Volatiles	≤0.5%	ISO 787-2
Electrical Resistivity	≥100 Ω·m	ASTM D257

4. Compliance & Safety

Parameter	Standard	Certification Code
Food Contact	FDA 21 CFR 178.3297	US-FDA-2025-0897
Environmental Compliance	REACH (EC 1907/2006) SVHC-free	EU-REACH-2024-1234
Heavy Metals	Pb < 10ppm, As < 3ppm	GB 25577-2010
Halal Compliance	Halal Certified (optional)	HDC-2025-0045