Technical Data Sheet

GRANULE-Eco TiO_2

GRANULE-Eco TiO_2 is a composite material of PLA and titanium dioxide nanoparticles with a large specific surface area and high content of anatase phase. Filaments with 15 vol.% TiO_2 have a kinetics constant of 6.57 10 -2 h -1 (3ppm NM pH2)

GRANULE-Eco TiO_2 is suitable for many catalytic and photocatalytic applications. Its structure also makes it suitable for use as an effective filter.

Filament features

Particle	Titanium Dioxide
Polymeric matrix	PLA-PCL
Particle loading (vol.%/wt.%)	5 - 15 vol.% / 15 - 36 wt.%
Density	1.4 - 1.6 g/cm^3
Linear Density	3.2 - 3.9 g/m
Format	Plastic jar

Thermal Properties

Glass Transiction	53 °C
Melting Temp.	154 °C
Degradation Temp.	367 °C

Printing Recommendations

Printing Temp.	160 - 170 °C
Hot Pad	30 - 60 °C
Printing Speed	20 - 50 mm/s
Layer Height	≥ 0.15 mm
Nozzle Diameter	≥ 0.4 mm
Head travel speed	< 150 mm/s
Stand-by Temp.	30 °C below Printing Temp. or < 140 °C

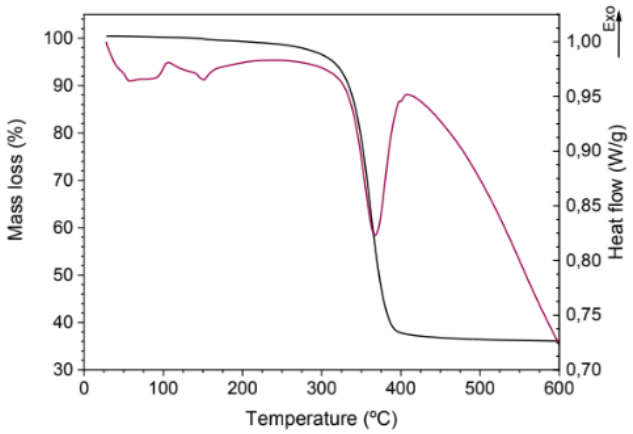
Storage Conditions

Keep in a dry place
Protect from direct sunlight
Storage between 5°C - 30°C

Specific properties

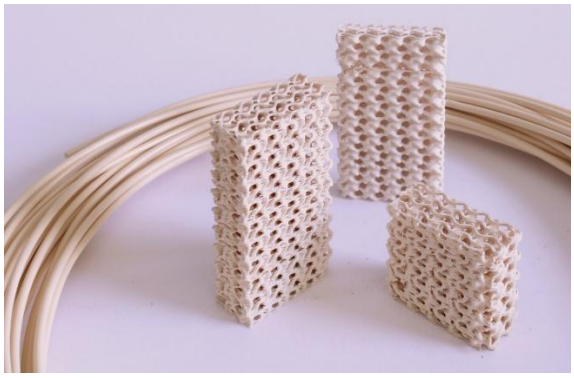
Suitable for many catalytic and photocatalytic applications. Its structure also makes it suitable for use as an effective filter.

Thermal behavior



Granule

Printing Examples



Powder Specifications

Titanium dioxide Powder

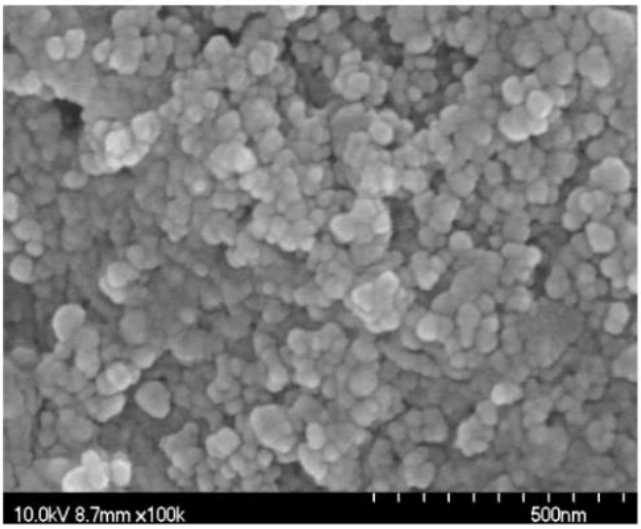
Identification Product

CAS Number	13463-67-7
Chemical formula	TiO_2

Chemical composition

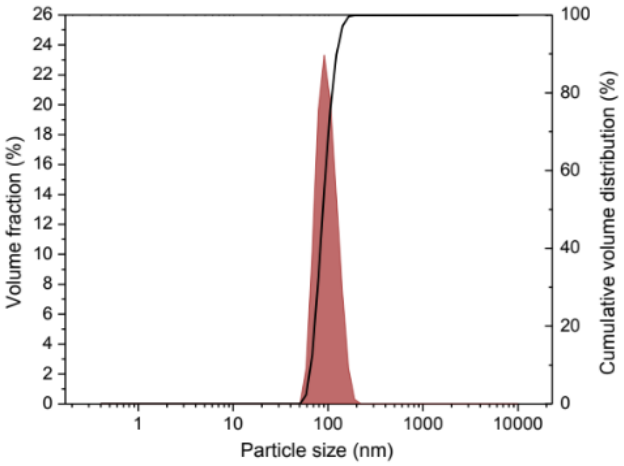
Anatase/Rutile	80/20	X-Ray Fluorescence
Purity	99.5 %	
Density	3.87 g/cm^3	Helium picnometry
Spec. Surf. area	52.29 m^2/g	N_2 adsorption-desorption

Particle morphology



Scanning electron microscope image

Particle size distribution



D_{10}: 65 nm D_{50}: 90 nm D_{90}: 126 nm
Measured by Laser Diffraction at small angles

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