



Technical Data Sheet

Filament-Cer Al₂O₃

Filament-Cer Al₂O₃ is an easily printable filament with a high content of alumina nanoparticles. After printing your desired shape, the sintering process provides you a 100% alumina piece or scaffold.

FILAMENT-Cer Al₂O₃ can be sintered in the same way as if it were alumina. It remains easily printable by FFF, minimizing the clogging problems. **FILAMENT-Cer Al₂O₃** is specifically formulated for 100% inorganic parts to be obtained through 3D printing, allowing easy manufacturing of dense pieces and scaffolds with customized shapes.

Filament features

Particle	Aluminium oxide
Polymeric matrix	PLA
Particle loading (wt.%/vol.%)	73 wt. %/ 44 vol. % (±5 / ±2)
Diameter	1.75 ± 0.15 mm
Density	2.41 g/cm ³
Linear Density	0.058 g/cm
Format	Spool vacuum packed

Thermal Properties

Glass Transition Temp.	60°C
Melting Temp.	154 °C
Degradation Temp.	325 °C

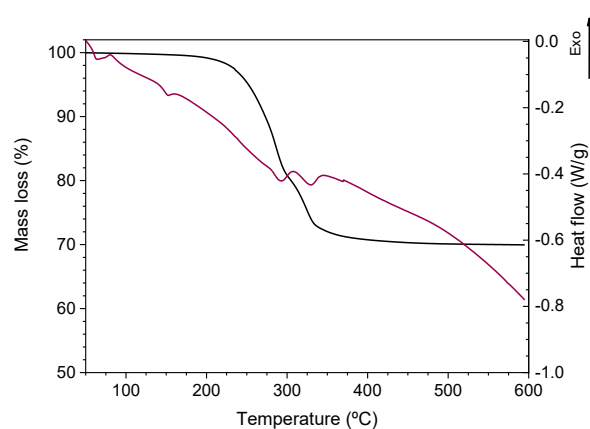
Printing Recommendations

Printing Temp.	158 - 165°C
Hot Pad	30 - 60°C
Printing Speed	10-20 mm/s
Layer Height	≥ 0.15 mm
Nozzle Diameter	≥ 0.4 mm
Head travel speed	< 50 mm/s
Stand-by Temp.	<140 °C

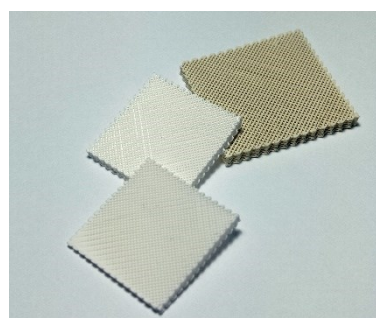
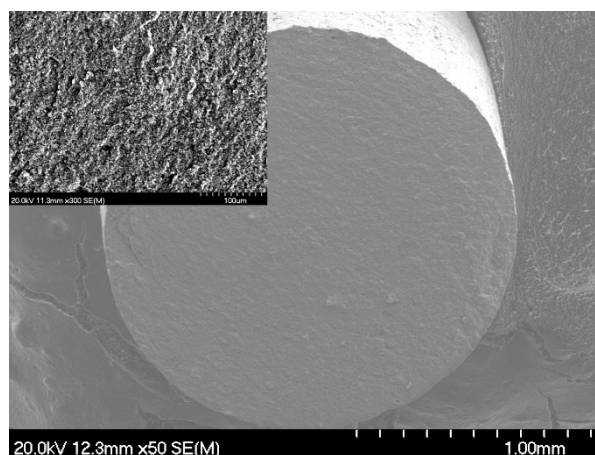
Storage Conditions

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

Thermal behavior



Filament cross-section*



Green and sintered samples printed with FCer Al₂O₃

Powder Specifications

Alumina Powder

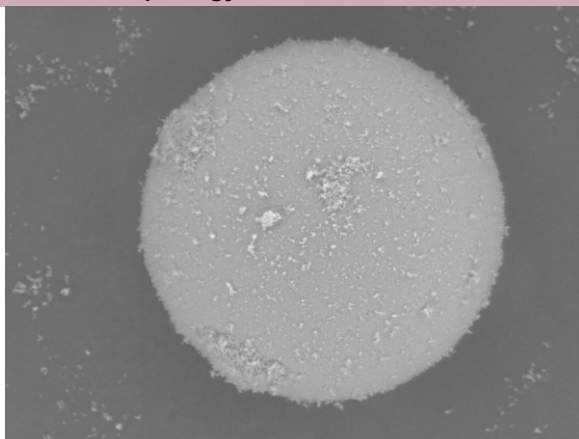
Identification Product

Commercial name	Al ₂ O ₃ MR70
Chemical formula	Al ₂ O ₃
Supplier	Huber Engineering Materials
Characteristics/ Description	Spherical agglomerates

Chemical composition

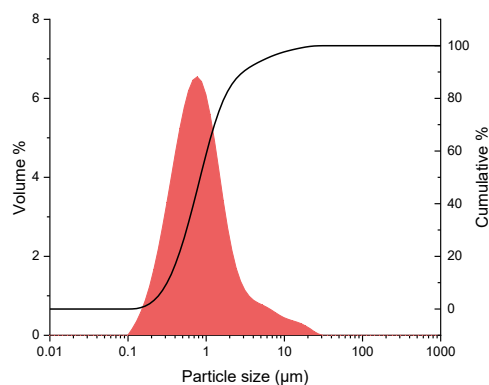
Purity	> 99.8 %	X-ray Fluorescence
Density	3.96 g/cm ³	Helium picnometry
Spec. Surf. area	7.70 m ² /g	N ₂ adsorption- desorption

Particle morphology



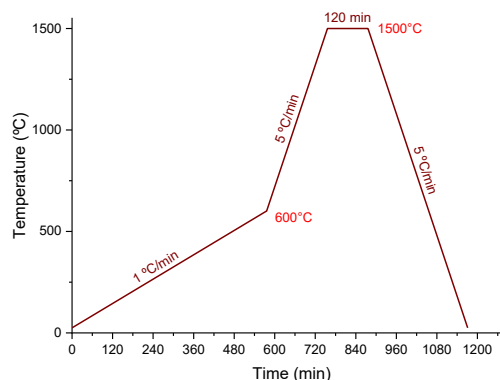
SEM image of an agglomerate of Al₂O₃ powders

Particle size distribution



D₁₀: 0.29 μm D₅₀: 0.84 μm D₉₀: 3.92 μm
Measured by Laser Diffraction

Debinding and Sintering



Only one cycle
Atmosphere: Air

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