

NANOe

Zetamix Ceramic & Metal 3D printing filaments



ζetamix[®]

3D printing filament

Al₂O₃ ZrO₂ ZTA 316L



Ceramic and Metal filament manufacturing

New method for 3D printing of ceramics and metals.

Key benefits are :

- Complete freedom of shape
- Low investment with our Zetaprint system
- High building speed
- Soluble or detachable support



Available materials

Zetamix is a mix of plastic binders and between 50 and 60 vol% of raw material

All our materials are available, in 1,75 and 2,85 mm diameters

The available ceramics are :

- ZTA-10 (Zirconia Toughened Alumina)
- Al100 (Alumina)
- 3Y-TZP (3_{mol}% Yttria Stabilized Zirconia)
- Black Zirconia.

The available metal is Stainless Steel 316L.

Materials in development include SiC, Si₃N₄, WC-Co, Inconel and Titanium.



High quality parts

After debinding and sintering, density > 99% can be obtained, with homogeneous microstructure.

Best results should be obtained by using Zetaprint system, but you can also adapt the filament on any filament 3D printing machine.



Zetaprint

Nanoe recommends to use Zetaprint machine in order to benefit from our experience and advices on printing parameters.

Main features include :

- Dual extrusion for supports or bi material printing
- Removable glass plate for unloading of the printed parts
- Wear resistant nozzles (0.1 to 1 mm nozzles)
- High accuracy (z down to 50 μm , xy down to 20 μm)
- Build size 230*150*150 mm



Solvent debinding and sintering

Zetamix is compatible with solvent debinding. This allows a stress free detachment from the building plate and supports, and a quicker debinding.

Nanoe offers a complete solution, Zetaprint system, with debinding equipment and Zetasinter, a tube furnace to debind and sinter your printed parts, whether it be in ceramics or metal.

Zetasinter can be used under air atmosphere for ceramics parts and under inert atmosphere, to protect metal parts against oxidation.

The working temperature is between 800 and 1600°C for a tube size of $\varnothing 100 \times 205 \text{mm}$.



Services

Nanoe also offers printing and sintering services for our customers who wish to test the technology on a first part, and training services if needed.

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*Are you interested in Nanoe ?
More information about our filaments and materials on our website
www.nanoe.com*

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