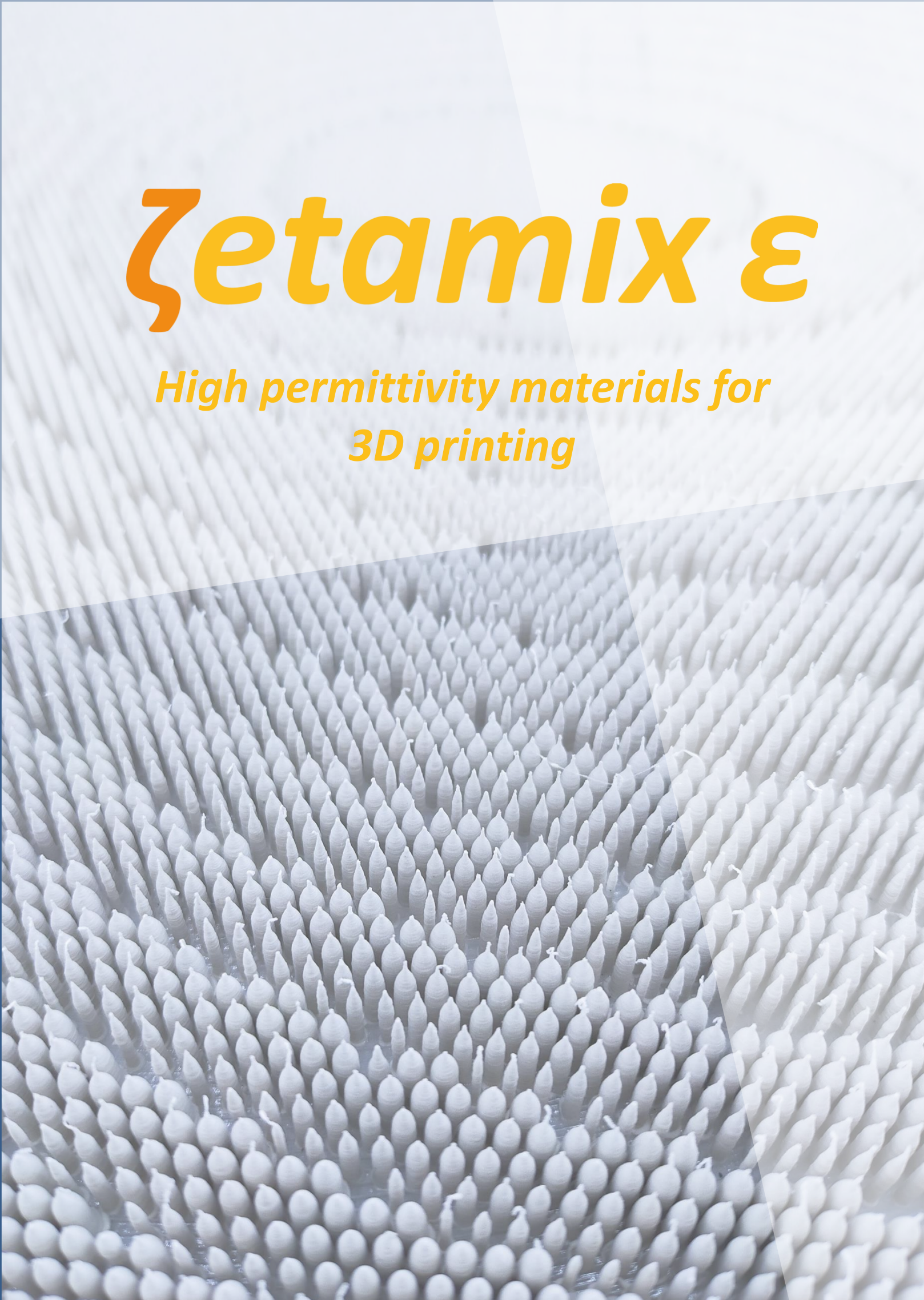
ζetamix ε

High permittivity materials for 3D printing



Zetamix Epsilon Filaments

PRODUCT DESCRIPTION

Zetamix Epsilon filaments are used for 3D printing.
Diameter available: 1.75 mm and 2.85 mm

IDENTIFICATION

Trade name	Zetamix Epsilon **Ɛ = 2.2**	Zetamix Epsilon **Ɛ = 4.5**	Zetamix Epsilon **Ɛ = 7.5**
Chemical name of raw material	Polyoleofine	Polyoleofine	Polyoleofine
Binding proportion (vol) %	100	70	60
Binding proportion (mass) %	100	35	26
TiO_2 proportion (vol) %	0	30	40
TiO_2 proportion (mass) %	0	65	74

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TYPICAL PROPERTIES OF THE FILAMENT

	Ɛ = 2.2	**Ɛ = 4.5**	**Ɛ = 7.5**
Mass fluidity index [g/10 min]	16	16	16
Volumetric fluidity index [cm^3/10 min]	5	5	5
Moisture Absorption 24 hours [%]	<0.1%	<0.1%	<0.1%
Moisture Absorption , 7 days [%]	<0.3%	<0.3%	<0.3%
Shor D	56	56	56

PROPERTIES

Zetamix	**Ɛ = 2.2**	**Ɛ= 4.5**	**Ɛ= 7.5**
Dielectric properties			
Dielectric constant *	2.2 (± 0.2)	4 (± 0.5)	7.5 (± 0.5)
Loss tangent	< 1.10^{-3} (± 5.10^{-4})	≈ 1.10^{-3} (± 5.10^{-4})	≈ 1.10^{-3} (± 5.10^{-4})
Physical properties			
Specific gravity	1.00	2.00	2.30
Water absorption, max.	<0.3%	<0.3%	<0.3%

* Dielectric constant between 1 and 50 GHz.
± 5% between -50°C to +110°C

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PROPERTIES

	Ɛ = 2.2	Ɛ = 4.5	Ɛ =7.5
Mechanical properties			
Tensile strength	23 MPa	23 MPa	23 MPa
Flexural strenght	25 MPa	25 MPa	25 MPa
Flexion at break	3.2%	3.2%	3.2%
Elongation at break	3.1%	3.1%	3.1
Impact properties			
Charpy impact test (KJ/m^2)	11.86	11.86	11.86
Thermal properties			
Heat deflection temperature	110°C	110°C	110°C

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