FerroTec

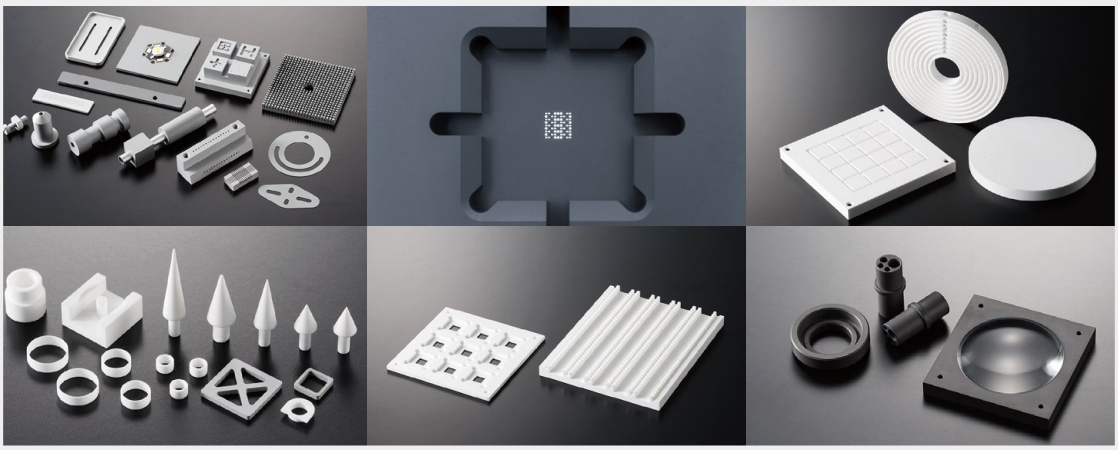
Photoveel machinable ceramics

ホトベール®

Photoveel®

Fine ceramics like Alumina are known to have excellent anti-wear properties due to its hardness - but machinability is low.

Ferrotec´s "Photoveel N" can help out on that. By using this easy to machine fused glass mica ceramic by crystallized mica fluorine oxide and fine grain of zirconia in a glass matrix, standard carbide tools, you will easily enjoy high precision machined surfaces on parts like this …



Material reference property numbers underline the special features of this material.

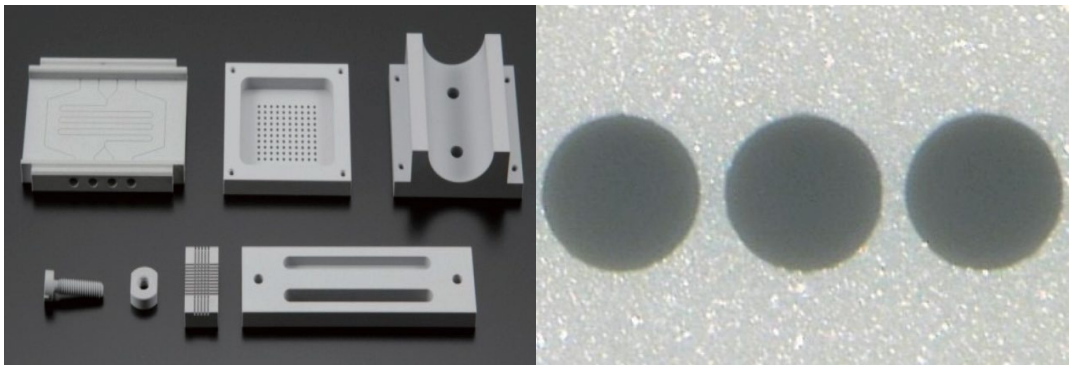
	Photoveel N	Market Companion Material	Market Companion Material
Original Manufacturer	Ferrotec		
Product Origin	Japan		
Raw material Production Process	Fused	Fused	Sol Gel
Crystal	Mica + Zirconia	Mica	Mica
Density (g/cm^3)	2.59	2.52	2.50
Bending Strength (MPa)	150	94	110
Thermal Expansion ($1/C \times 10^{-6}$)	7. 8 RT-400 °C	9.3 RT-300 °C	9.3 RT-400 °C
Thermal Conductivity (W/mK)	1.50	1.67	1.60
Thermal Shock resistance (C)	150	150	150
Volume resistivity (Ohm-cm)	10^{15}	10^{16}	10^{15}
Breakdown Voltage (kV/mm)	20	40	>10

Photoveel II Series

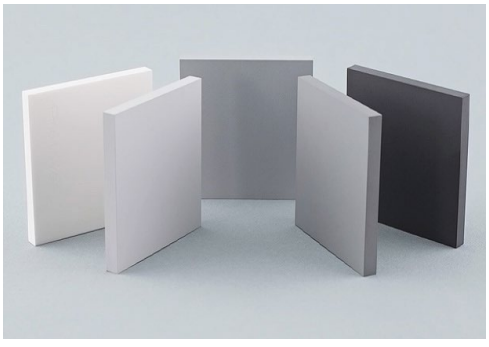
You are in need for machined ceramic parts with …

- high strength
- low thermal expansion
- micro machining with micron order precision …

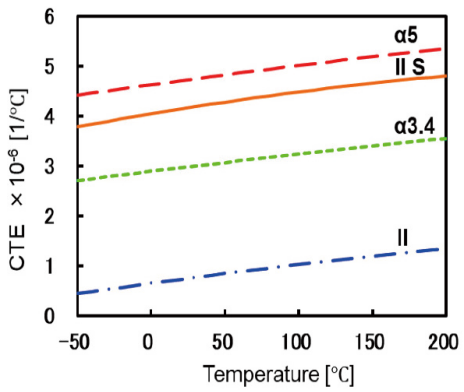
… "Photoveel II" is your material of choice.
"Photoveel II" is a super machinable nitride-based ceramic with very fine microstructure.



Hole diameter 0.03 mm using Photoveel II-S



Color variation



Material	Photoveel II	Photoveel II-S	Photoveel II-k70	Alumina (AM997)	Photoveel N
Density (g/cm^3)	2.56	3.50	2.70	3.93	2.59
Water Absorption (%)	0	0	0	0	0
Bending Strength (MPa)	440	3.50	520	390	150
Young's Modulus (GPa)	157	130	200	375	150
Vickers Hardness (Hv)	230	230	400	1800	220
Volume Resistivity ($\Omega \cdot cm$)	10^{15}	10^{15}	10^{15}	10^{16}	10^{15}
Max. Operating Temperature (C)	1000	1000	1000	1600	1000
Coefficient of Thermal Expantion ($1x10^{-6}$/C)	1.4 RT-400°C	4.7 RT-150°C	1.0 RT-150°C	7.0 RT-500C	7.8 RT-400°C
Coefficient of Thermal Conductivity (W/m • k)	50	23	70	33	1. 7

Check out Ferrotec' s Photoveel Ceramic Components and enjoy…

- Complex structures with good cost/ performance ratio
- Very fast leadtimes - partly within days
- Availability already from 1 piece to high volume manufacturing
- Using high quality Japanese standards from a worldwide acting company
- Medical applications: radio-opaque, Bio-compatible for minimally invasive surgical components

About Ferrotec

Ferrotec is a dynamic supplier with the most comprehensive array of product solutions and supply capability in the semiconductor market. Ferrotec is OEM certified for many parts and offers solutions covering:

- ***SiFusion Silicon Components***
- ***Fabricated Quartz***
- ***CVD-SiC***
- ***Silicon Wafers***
- ***Quartz Crucibles***
- ***Ceramics***
- ***DBC / AMB***
- ***Thermoelectric Solutions***
- ***Vacuum Feedthroughs***
- ***Contract Manufacturing***

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