

Industrial Ceramics

Industrial CeramicsE 2Properties of Fine CeramicsE 4







New technology products which will contribute to the productivity of all kinds of industries.



Ssangyong Materials Corporation has utilized its technologies with expertise accumulated since 1962 manufacturing experiences of various materials like advanced inorganic materials and cement.

Fine ceramics of Ssangyong have enjoyed a world-wide fame infields of industries from electro-electric industry to automobile and chemical industries.



CERAMICS FOR FAUCET

With state-of-the-art facilities and technologies, Ssangyong has been supplying various types of ceramics all over the world. Enjoy the world best technologies for surface grinding, geometrical accuracy and chemicophysical stability.





CERAMICS FOR FIBER OPTIC FERRULE

Fiber optic ferrule with ultra high precision satisfies customers' requirement of concentricity, straightness and roundness that are essential to the quality.

The unique technologies of powder-compounding and nearnet shape of mould guarantee customers' easy processing and short production lead time.



CERAMICS FOR METALIZED PARTS

As the world biggest supplier of metalizing ceramics, Ssangyong has the strong point in metalizing and plating technologies for insulating parts such as ceramics for microwave oven and various interruptors.



BIO-CERMAICS AND OTHERS

Following the various needs from the industries overall, Ssangyong has been developing the best of the best technology maximizing unique characteristics of ceramics; wear-resistance, anti-corrosiveness, thermal shock-resistance and electric insulation.

Now our products are; dental implant, extruding dies, fixtures, guides, oxygen sensors, shafts, seals, balls, nozzles, cutters, various jigs for electro-electric areas, automobile industry and etc.





Properties of Fine Ceramics

DENSITY(g/cm³)



BENDING STRENGTH(MPa)



Technical Data

YOUNG'S MODULS(10⁶kg/cm²)



HARDNESS(Kg/mm²)



TOUGHNESS(MPa · \sqrt{m})



HIGH TEMPERATURE STRENGTH(kg/cm²)



4 CERABIT





THERMAL EXPANSION(%)

THERMAL SHOCK(AT, °C)



CORROSION RESISTANCE(mg/cm³, boiling, 30min.)



THERMAL CONDUCTIVITY[\u03c6/mK]



WORKING TEMP.(°C, in air)



CERABIT 5



Properties of Fine Ceramics

Materials		Al2O3		ZrO2	
Properties	Grade	SYAL 995	SYAL 950	SYZR-1	SYZR-2
Density(g/cm ³)		3.94	3.77	6.10	5.45
Hardness(kg/mm ²)		1,800	1,400	1,250	1,500
Toughness(MPa · √m)		3.0	2.0	7.0	5.5
Bending Strength(MPa)		500	380	1,300	2,000
Young's Modulus(10 ⁶ kg/cm ²)		3.8	3.3	2.0	2.5
Specific Heat(cal/g · °C)		0.19	0.19	-	-
Thermal Expansion Coeff.(×10 ⁻⁶ /°C)		7.5	8.0	9.5	8.7
Thermal Shock(∆T, ℃)		250	200	280	400
Thermal Conductivity(ω/mK)		23	23	3.0	7.0
Working Temperature(°C)		1,600	1,500	800	1,000
Corrosion	Acid	Excellent	Good	Good	Good
Resistance	Alkali	Excellent	Good	Good	Good
Merit		Wear resistance Anti-corrosion High temp. application High purity	Wear resistance Anti-corrosion High temp. application	High strength Wear resistance High toughness Insulation for heat	High strength Wear resistance High toughness Insulation for heat

Materials		Si3N4			SiC
Properties	Grade	SYSN-1	SYSN-2	SYSN-3	SYSC-1
Density(g/cm ³)		3.24	3.26	3.32	3.20
Hardness(kg/mm ²)		1,500	1,600	1,500	2,800
Toughness(MPa · √m)		5.0	6.0	4.9	2.5
Bending Strength(MPa)		800	1,000	900	500
Young's Modulus(10 ⁶ kg/cm ²)		3.0	3.2	3.0	4.0
Specific Heat(cal/g · °C)		0.19	0.19	0.19	0.16
Thermal Expansion Coeff.(×10 ⁻⁶ /℃)		2.8	3.0	2.8	4.2
Thermal Shock(∆T, ℃)		800	800	800	350
Thermal Conductivity(ω/mK)		29	29	40	120
Working Temperature(°C)		1,200	1,200	1,200	1,400
Corrosion	Acid	Good	Good	Good	Excellent
Resistance	Alkali	Good	Good	Good	Excellent
Merit		High temp. strength High thermal shock resistance Wear resistance Anti-corrosion	High temp. strength Wear resistance Anti-corrosion	High temp. strength High thermal shock resistance Wear resistance Anti-corrosion	High temp. strength Wear resistance Anti-corrosion Excellent hardness





