



非凡陶瓷

公司简介

宜兴市非凡陶瓷制品有限公司，位于风景秀丽的太湖之滨——中国宜兴陶都丁蜀镇。公司成立于1999年，占地面积10000平方米，办公面积3000平方米，拥有整条工业陶瓷批量生产线。现有员工120人，其中中高级技术科研人员15人，年产值3000万元。

本公司专业研制各类陶瓷材料，如高纯氧化铝、氧化锆、堇青石、滑石瓷以及氧化锆增韧氧化铝(ZTA)等以及各种特种材料。主要生产的产品类别有：耐磨陶瓷、电子电器陶瓷、纺织陶瓷、发热陶瓷、蜂窝陶瓷等等。产品广泛用于机械、电子、化工、纺织、航空航天等领域，具有耐磨损、耐腐蚀、高强度、绝缘性能好等特点。

公司通过ISO9001:2008质量体系认证，更加完善了适应工业陶瓷生产发展的质量控制体系，为改善产品品质，降低生产成本奠定了基础。我们根据客户的要求，提出经济适宜的先进陶瓷解决方案，并完成生产制作，依靠优秀的售后服务和跟进体系，让我们的合作和产品改进更加有效。目前本公司产品80%以上出口美国、俄罗斯、西班牙、法国等国家，并形成了长久的战略合作伙伴关系。

本着“艰苦踏实、诚信承诺、实干实效”的企业精神，我们努力做到“精诚合作、互利共赢”。

竭诚欢迎有识之士来公司考察、洽谈业务、共谋发展！非凡愿与您携手共创辉煌业绩！

Corporation Introduction

Yixing Feifan Ceramics Co., Ltd., locates in the beautiful side of Taihu Lake. It was established in 1999, covers 10000 square meters, the office area is 3000 square meters and it has the whole production line for mass production of industrial ceramics. Now there are 120 employees and 15 senior technicians, the company annual turnover is 30million.

Our company professional / develops various ceramic materials, such as: high purity alumina, zirconia, cordierite, steatite, ZTA and etc. The main product category includes: wearable ceramics, electrical ceramics, textile ceramics, heating ceramics, honeycomb ceramics and so on.

With the advantages: high wearable, anti-corrode, high strength and good insulation, our products are widely used in the fields of mechanical, electronics, chemical, textile, aeronautic and other fields.

Approved by the ISO9001:2008 international quality system, the company exerts to improve the quality control system for the development of industrial ceramics. And it establishes the stable foundations of improving the product quality and reducing the production cost. We protect the suitable and economical scheme of advanced ceramics according to customer's demands, and then finish the producing. Depending on the good after service and tracking system, our cooperation and quality improvement become much effective. Currently, 80% of our products are exported to the USA, Russia, Spain, France and other countries, and we have formed the long-term strategic cooperative relationships with our customers.

Based on the enterprise tenet: "hard working, sincerity and efficiency", we strive for the "good faith cooperation and mutual benefits".

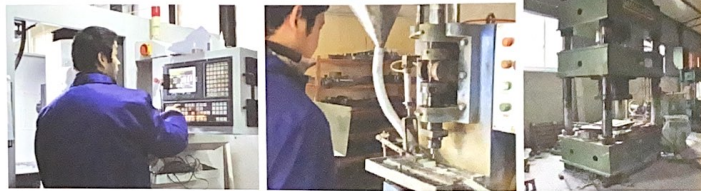
We sincerely welcome a man of insight come to our company for mutual development. Feifan is willing to be hand in hand with you to triumph and make glory business.





[工欲行其事, 必先利其器]

You have to make the foundation better for success.



赢得掌声

To win respect

你的鼓励
是对我们最好的支持

我们从历史的尘埃中走来, 经历了艰辛的创业之路。
无数辉煌的梦想在我们的手中实现。
昨天的荣誉, 并不代表对明天的保证。
客户的信赖和满足是我们永恒的追求。
一张张记载着成长经历的资质证书,
承载着昔日的辉煌, 也成为了我们今日奋进的基石。

*We come from the dust of history, through the hard road of entrepreneurship
Countless brilliant dreams in our hands to achieve.
Yesterday's honor, does not mean that tomorrow's guarantee,
Customer trust and satisfaction is our eternal pursuit.
A record of the growth experience of the qualification certificate,
Carrying the glory of the past, has become the cornerstone of today's progressive.*

荣誉资质

Base of Production



氧化铝/氧化锆产品系列

Alumina ceramics / Zirconia ceramics series

95/99/99.7氧化铝材料属性表

95%/99%/99.7% Al₂O₃ Material Parameters:

项目 Item	测试条件 Test Condition	单位及符号 Unit & Symbol	95% Al ₂ O ₃ 陶瓷 95% Alumina ceramics	99% Al ₂ O ₃ 陶瓷 99% Alumina ceramics	99.7% Al ₂ O ₃ 陶瓷 99.7% Alumina ceramics
主要化学成分 The main chemical ingredient			Al ₂ O ₃	Al ₂ O ₃	Al ₂ O ₃
体积密度 Bulk Density		g/cm ³	>3.6	3.89	3.96
最高使用温度 Maximum Use Temperature			1450°C	1600°C	1650°C
吸水率 Water absorption		%	0	0	0
洛氏硬度 ROHS Hardness			≥85	≥89	≥89
抗折强度 Flexural strength	20°C	MPa (psi x 10 ³)	358 (52)	550	550
抗压强度 Compressive Strength	20°C	MPa (psi x 10 ³)	2068 (300)	2600(377)	2600(377)
断裂韧性 Fracture Toughness	K(I c)	Mpa m ^{1/2}	4-5	5.6	6
热膨胀系数 Coefficient of thermal expansion	25-1000°C	1X 10 ⁻⁶ /°C	7.6	7.9	8.2
导热系数 Coefficient of thermal conductivity	20°C	W/m *K	16	30.0	30.4
抗热震性 Thermal Shock Resistance	Δ Tc	°C	250	200	200
介电常数 Dielectricity constant	1MHz 25°C		9	9.7	9.7
击穿强度 Dielectric strength		ac-kV/mm (ac V/mil)	8.3 (210)	8.7 (220)	8.7 (220)
体积电阻率 Volume Resistivity	100°C	ohm-cm	> 10 ¹¹	> 10 ¹⁴	> 10 ¹⁴



氧化铝瓷环 Alumina ceramic rings



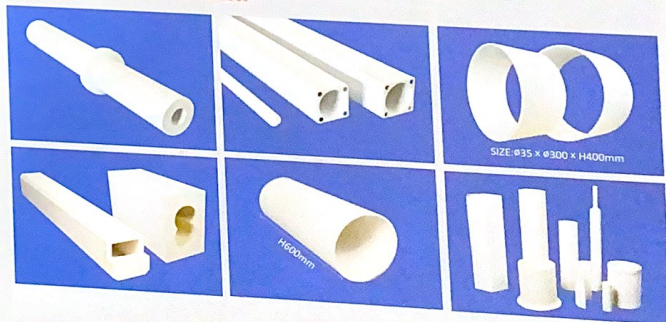
生产能力:

Producing capability 30000pcs./year

由于氧化铝制品具有优越的强度、硬度、绝缘性、热传导、耐高温、耐腐蚀、耐磨耗、高温强度等特色，已被广泛应用于机械密封、电子、仪器、传感、交通、通讯等场合或领域。使用材质的氧化铝含量分别在95%、99%、99.7%，可根据客户要求或图纸制造交货。

Alumina ceramics with superior strength, hardness, insulation, thermal conductivity, high temperature oxidation resistance, corrosion resistance, abrasion resistance, high temperature strength and other characteristics, it has been widely used in mechanical seals, electronics, instrumentation, sensing, transport, communication and other occasions or areas. The material content of alumina we choose is 95%, 99%, 99.7%. We may produce and delivery according to customer's sample or drawings.

氧化铝瓷管 Alumina ceramic tubes



氧化铝/氧化锆产品系列

Alumina ceramics / Zirconia ceramics series

氧化锆陶瓷具有高韧性、高抗弯强度和耐磨性、优异的隔热性能、低摩擦系数、热膨胀系数接近于钢等优点，被广泛应用于结构陶瓷领域。主要有：Y-TZP磨球、分散和研磨介质、喷嘴、球阀球座、氧化锆模具、微型风扇轴心、拉丝模和切割工具、耐磨刀具及其它室温耐磨零件等。

Zirconia ceramic has high toughness high bending strength high abrasion-resistance, the Coefficient of thermal expansion is close to steel, it was widely used in structure ceramic areas. Mainly products: Y-TZP grinding ball, grinding medium, nozzles, ball valve and seat, zirconia moulds, fan axes, drawbench mould, incision tools, wearable knives and other wearable accessories.

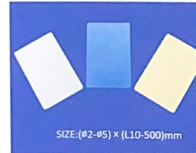
氧化锆材料属性表

Zirconia material parameter:

项目 Item	测试条件 Test Condition	单位及符号 Unit & Symbol	氧化锆 Zirconia Ceramic
主要化学组成 The main chemical ingredient			ZrO ₂ 95% Y ₂ O ₃ 5%
体积密度 Bulk Density		g/cm ³	6
最高使用温度 Maximum Use Temperature			1300°C
吸水率 Water absorption		%	0
洛氏硬度 Rohs Hardness		HRA	≥83
抗压强度 Compressive Strength	20°C	Kg/cm ²	25000
断裂韧性 Fracture Toughness		Map.m ^{3/2}	6 - 8
热膨胀系数 Coefficient of thermal expansion		/°C	9.5 × 10 ⁻⁶
抗热震性 Thermal Shock Resistance	ΔTc	°C	360
体积电阻率 Volume Resistivity	20°C	Ω.cm20°C	> 10 ¹²



氧化锆基片
Zirconia substrates



氧化锆柱塞
Zirconia plunger



氧化锆轴承
Zirconia axle bearing



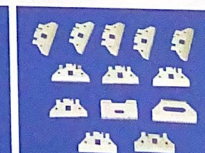
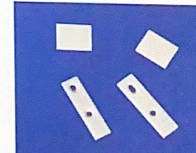
氧化锆轴套
Zirconia axle sleeve



氧化锆管
Zirconia tubes



氧化锆刀片
Zirconia blades



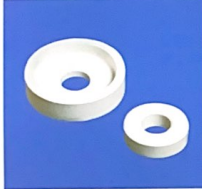
氧化铝/氧化锆产品系列

Alumina ceramics / Zirconia ceramics series

氧化铝陶瓷密封环
Alumina sealing rings



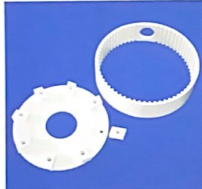
氧化铝莫来石
Alumina mullite



陶瓷法兰
Ceramic flange



氧化铝粉碎机配件
Alumina crusher parts



氧化铝陶瓷塔轮
Alumina tower wheel



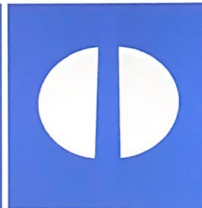
高纯氧化铝研磨盘
High purity alumina abrading plates



半导体蚀刻环
Semiconductor etched rings



氧化铝陶瓷盘
Alumina plate



氧化铝陶瓷产品
Alumina ceramic products



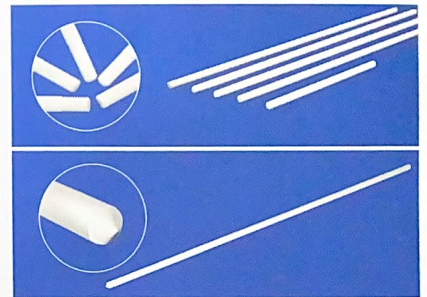
各类精细陶瓷棒 Various fine ceramic rods

主要特点:

- 耐高温
- 耐磨
- 高强度
- 永不变形
- 精细磨加工后具备优良的工作面, 圆整度很好, 公差级别高。

Main Feature:

- Heat resistant
- Wear resistant
- High intensity
- Never distortion
- After grinding work, it has excellent working surface, good concentric circle and high tolerance level.



氧化铝陶瓷柱塞 Alumina ceramic plungers



水阀片 Ceramic Discs

95%氧化铝陶瓷水阀片, 主要用于热水器调温阀, 转换阀, 冲浪, 按摩浴缸调节阀, 液化气控制调节阀等。

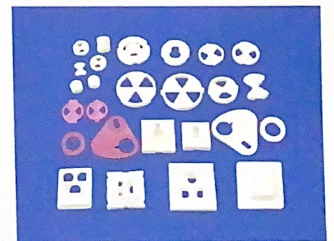
95% Al₂O₃ ceramic discs, mainly applied to temperature modulatory valve conversion valve modulatory valve of surf and massage bathtub LPG valves.

性能特点:

1. 阀片平面度误差 ≤ 0.03 μm, 粗糙度 ≤ 0.3 μm
2. 平行度 ≤ 0.05mm, 硬度 HRA ≥ 85
3. 气密性好, 抗压, 抗折强度高, 使用可达50万次以上

Performance:

1. Flatness ≤ 0.03 μm, roughness ≤ 0.3 μm
2. Parallelism ≤ 0.05mm, Hardness HRA ≥ 85
3. Good hermetic, compressive resistance, flexural resistance, using longevity will be above 500 thousand times.



氧化铝/氧化锆产品系列

Alumina ceramics / Zirconia ceramics series

氩弧焊氧化铝喷嘴、陶瓷喷砂嘴

Argon-arc welding alumina Nozzles/Sand blasting nozzles

主要特点:

- 氧化铝喷嘴具有纯度高、致密性好、硬度强、磨耗低、耐腐蚀等特点。
- 氩弧焊陶瓷喷嘴主要装配在氩弧焊焊枪上，用于无氧焊接，具有抗热震性和耐磨性等特点。
- 陶瓷喷砂嘴主要用于喷高压空气和砂(刚玉砂/金刚砂)，用来清除金属表面的砂和锈，以利于油漆涂装工作。

Main Feature

- Alumina nozzles have the performances of high purity, good hermeticity, high hardness, low abrade and anti-corrode.
- Argon-arc welding nozzles are fitted in argon-arc welding guns for anaerobic welding; the thermal shock resistant is good and wearable.
- Sand blasting nozzles are widely used for blasting high pressure air and sand (corundum/quartz sand) in order to clean the sand/rust on metal surface and will be good for the further painting works.

氧化铝陶瓷基片 Alumina Substrates

主要特点:

- 平整度 < 0.02，电绝缘性好，可直接涂敷铜、银等金属浆。

Main Feature:

- Flatness < 0.02, good dielectric property, can paint copper, silver and other metal paste directly on surface.

喷嘴/基片的应用范围:

氧化铝喷嘴、基片等产品广泛应用于陶瓷、电力、石油、化工、轻工等行业中，是各种材料如 α-氧化铝粉、片状氧化铝、高岭土、电熔刚玉物料、搪瓷、颜料、染料、釉料、涂料、油墨、特种玻璃、各种球磨机研磨机械设备的衬里和研磨介质。

Nozzles/Substrates Application scope

Widely applied in the areas of ceramic, electric power, petroleum, chemical industry and light industry, they are the liner and grinding medium for various ceramic material, α-Al₂O₃ powder, flake alumina, kaolin, fusible corundum, porcelain enamel, dye, ceramic glaze, dope, printing ink, special glass, various ball mill machines.

氧化铝陶瓷壳 Alumina boxes

采用等静压成型，高温烧制，氧化铝含量高，产品致密性好，密度大，纯度高，可耐高温、耐高压、耐酸碱腐蚀，绝缘性能好。

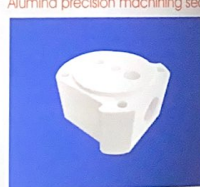
Using CIP forming method, sintering under high temperature, high alumina content, good hermeticity, big density, high purity, heat-resistant, high voltage resistant, acid/alkali corrode-resistant and good insulation

氧化铝精密加工密封件

Alumina precision machining seal



SIZE: L300 x W50 x H22mm



耐磨陶瓷系列 wearables ceramics series



耐磨陶瓷机床座 wearables ceramic bases

SIZE: L800 x W180 x H50mm

SIZE: L490 x W390 x H70mm

陶瓷喷涂机配件

wearables ceramic for anarcot spraying center

耐磨内衬

wearables ceramic liner

耐磨陶瓷是以AL₂O₃为主要原料，以稀有金属氧化物为熔剂，经一千七百度高温焙烧而成的特种刚玉陶瓷，再用高强度的有机/无机粘合剂粘结而成，然后经过磨床精加工到图纸要求。

Wearable ceramic is the special corundum ceramic that been sintered under 1700 with the main raw material of Al₂O₃ and flux of rare metal oxide. Using the high strength organic/inorganic bond to felt together, and then grinding to the size as drawing required.

性能特点: Performance:

1. 硬度大，其洛氏硬度为HRA80-90，硬度仅次于金刚石，远远超过耐磨钢和不锈钢的耐磨性能。

Big hardness, the ROHS hardness is HRA80-90, just inferior to diamond, the wearable ability is much better than the wearable steel and stainless steel

2. 耐磨性能极好，其耐磨性相当于锰钢的266倍，高铬铸铁的171.5倍，在同工况下，可至少延长设备使用寿命十倍以上。

Wearable ability is excellent. Equal to 266 times of manganese steel, 171.5 times of high chrome cast-iron. Under the same working condition, can extend the equipment working life at least above 10 times.

3. 重量轻，其密度为3.6g/cm³，仅为钢铁的一半，可大大减轻设备负荷。

Light weight, the bulk density is 3.6g/cm³, only half of steel, can alleviate the equipment burthen greatly.

4. 粘接力强，耐热性好。

Hard adhesive, good heat-resistant.

主要技术指标:

Main Technical parameters

氧化铝含量 (Alumina content) ≥ 95%

密度 (Bulk Density) ≥ 3.6 g/cm³

洛氏硬度 (ROHS Hardness) HRA ≥ 85

抗压强度 (Compressive Strength) ≥ 850 Mpa

断裂韧性 (Fracture Toughness) KIC ≥ 4.8 MPa·m^{1/2}

抗弯强度 (Bending strength) ≥ 290 MPa

导热系数 (Coefficient of thermal conductivity) : 16W/m·K

热膨胀系数 (Coefficient of thermal expansion) : 7.2 × 10⁻⁶ m/m·K

耐磨陶瓷的应用范围:

在火电、钢铁、冶炼、机械、煤炭、矿山、化工、水泥、油田等企业，其输煤、输料系统、制粉系统、排灰、除尘系统等一切磨损大的机械设备上，均可根据不同的需求选择不同类型的产品。

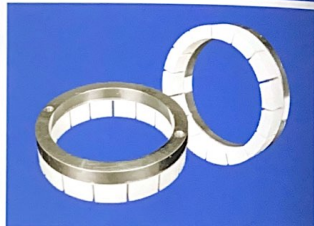
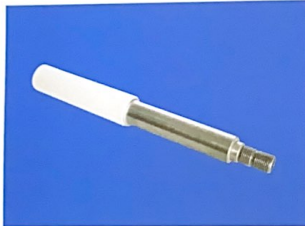
Main application

The enterprises of Electricity, steel smelt, mechanism, colliery, mine chemical, cement, oil field, will choose the different products according to their special requirements for the wearable mechanical instruments that works in the system of coal transfer, material transfer, milling, dust removing, and so on.

氧化铝/氧化锆产品系列

Alumina ceramics / Zirconia ceramics series

陶瓷与金属复合构件 Ceramic - metal composite components



陶瓷与金属组成的复合构件具有广泛的应用前景。陶瓷与金属之间存在着性能互补关系，将它们连接在一起，可以拓展各自的应用范围。

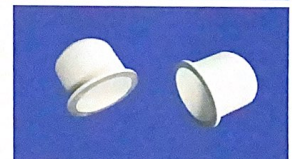
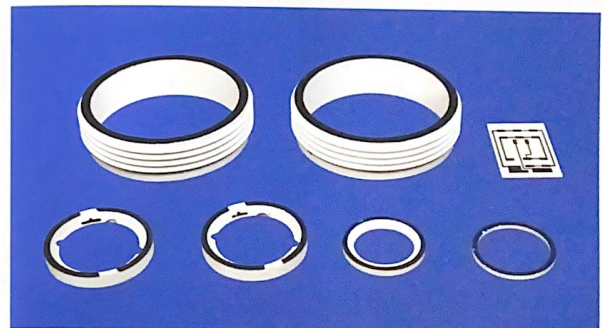
Ceramic - metal composite components have a wide application prospect, it has the complementary relationship between ceramic and metal, the application area can be expanded after bonding them together.

- 氧化铝陶瓷与金属均有不同的优点和缺陷，随着科技的发展和工程设计的提升，创造了陶瓷-金属组成的复合构件。
- 陶瓷与金属之间存在着性能互补关系，将它们连接在一起，拓展各自的应用范围。
- 选用高温结构胶，或采用热套工艺（先加热后冷却），可以将陶瓷和金属结合在一起使用。
- 复合件经过精细磨加工，可以得到优良的工作面以及不同的尺寸和公差。
- Both alumina ceramic and metal have the different advantages and defects, accompany with the development of science and technology, and the promote of engineering technology, it creates the ceramic-metal composite components.
- The ceramic and metal has the complementary relationship, the application expanded after bonding them together.
- Using high temperature resistant structural glue, or by using the thermal expansion technic(heat up then cool down), the metal and ceramic part can be combined together for using.
- The composite components will get good working surface and different size & tolerance after precise machining process.



金属化陶瓷系列 Metallized ceramics series

- 陶瓷金属化是在陶瓷表面牢固地粘附一层金属薄膜，使之实现陶瓷和金属间的焊接。
- 陶瓷金属化产品的陶瓷材料为96%白色氧化铝陶瓷或99%氧化锆陶瓷，成型方法为干压、等静压。
- 产品尺寸精密，翘曲小；金属和陶瓷接合力强，金属和陶瓷接合处密实。
- The technic of Ceramic Metallization is : adhere one layer of metal film to the ceramic surface, in order to carry out the welding between ceramic and metal.
- The material of ceramic part is 96% alumina, forming methods are dry pressing and CIP.
- Product size is precise, little warp; joint strength between metal and ceramic is high, the joint area is close.



附：陶瓷金属化工艺的技术要求

- 表面金属化层成分为 钼-锰-镍 (Mo-Mn-Ni)
- 金属层均匀一致，完全致密，与陶瓷的结合完全紧凑
- 金属层与陶瓷之间牢固粘附，粘附张力大于100N/mm²
- 金属层在850-900度的高温下适合强力焊接

Technical requirements for ceramic metallization

- The component of metal surface is Mo-Mn-Ni
- The metallization is homogeneous and vacuum-tight both in itself and with respect to ceramic
- The metallization is firmly bonded with the ceramic material the tensile strength of the ceramic/metallization bond must be more than 100 N/mm²
- The metallization must be suitable for hand soldering i.e. for the temperature range between 850 °C to 900 °C

滑石瓷陶瓷系列

Steatite ceramics series

滑石瓷材料属性表:

Steatite material parameters:

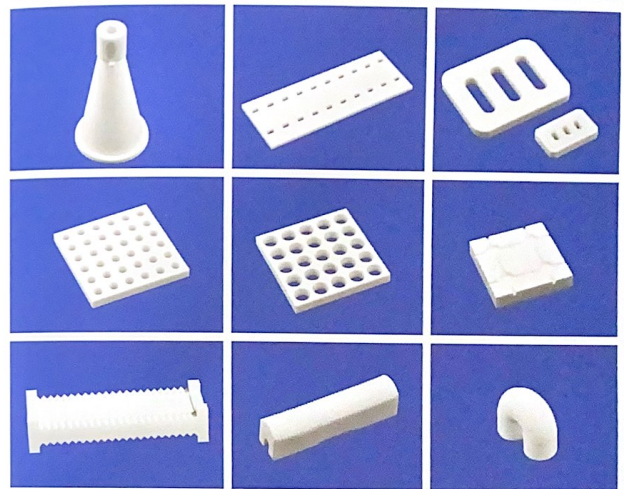
项目 Item	测试条件 Test Condition	单位及符号 Unit & Symbol	滑石瓷 Steatite Ceramic / C221
主要化学组成 The main chemical ingredient			Steatite
体积密度 Bulk Density		g/cm ³	≥ 2.6
最高使用温度 Maximum Use Temperature			≥ 1000°C
吸水率 Water absorption		%	0
洛氏硬度 Rohs Hardness		HRA	≥ 75
抗压强度 Compressive Strength	20°C	MPa	≥ 800
断裂韧性 Fracture Toughness		Mpa	≥ 120
介电常数 Dielectric constant	1MHz 20°C	ε _r	5.5
击穿强度 Dielectric strength		KV/mm	18
体积电阻率 Volume Resistivity	20°C	Ω cm20°C	> 10 ¹²

滑石瓷结构陶瓷作为装置构件，一般用在绝缘设备上。根据其结构构造的特点，可以选择不同的成型工艺制造（例如：热压铸、干压、等静压、挤压成型等），并经过1390°C高温烧制而成。如有需要，可以再进行表面施釉处理。

Steatite structural ceramics as the assembling constructional element, are normally used in dielectric equipments. According to its structural features, may choose different forming methods to make (Ex: Thermal casting, Dry-pressing, Iso-pressing, Extrusion and etc), and sintered under 1390 °C. If necessary, it can be also be glazed on surface in further process.

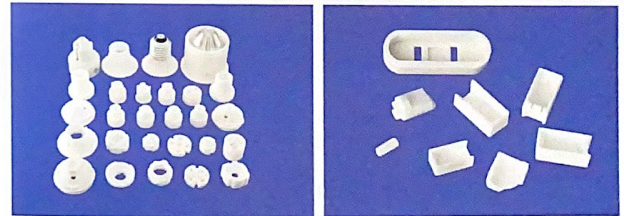


各类高频瓷 Various steatite ceramics



灯头, 灯座 Ceramic Lamp Holder

陶瓷电容器 Ceramic Capacities



堇青石陶瓷系列

Cordierite ceramics series

堇青石是以(2MgO·2Al₂O₃·5SiO₂)为主晶相的陶瓷,主要原料为滑石、黏土、氧化铝、长石等,用一般陶瓷工艺制造,可用作线圈骨架、耐电弧作用的电绝缘材料、复合材料的基料、电热绝缘装置的燃烧器喷嘴的材料等。

The main chemical ingredient of cordierite is 2MgO·2Al₂O₃·5SiO₂, main material is steatite clay, alumina, feldspar, etc. Manufactured by normal ceramic technic, can be used for loop framework, insulators of arc-resistance element of composite materials burnable nozzle of electrical insulators, and etc.

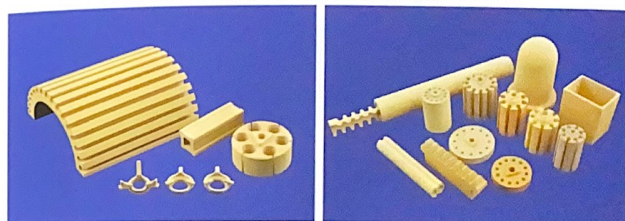
堇青石材料属性表

Cordierite material parameters

项目 Item	测试条件 Test Condition	单位及符号 Unit & Symbol	堇青石陶瓷 Cordierite ceramics
主要化学组成 The main chemical ingredient			2MgO 2Al ₂ O ₃ 5SiO ₂
体积密度 Bulk Density		g/cm ³	2.5
最高使用温度 Maximum Use Temperature			1000°C
吸水率 Water absorption		%	0
硬度 Hardness		HV	800
抗弯强度 Bending Strength	20°C	Kgf/cm ²	900
抗压强度 Compressive Strength	20°C	Kgf/cm ²	3500
断裂韧性 Fracture Toughness	K(Ic)	Mpa	-
热膨胀系数 Coefficient of thermal expansion		1X 10 ⁻⁶ /°C	<2.0
导热系数 Coefficient of thermal conductivity	25°C-30°C	W/m *K	1.3-
抗热震性 Thermal Shock Resistance	Δ Tc	°C	250
介电常数 Dielectricity constant	1MHz 25°C		6
击穿强度 Dielectric strength		ac-kV/mm (ac V/mil)	10
体积电阻率 Volume Resistivity	20°C	ohm-cm	> 10 ¹²



耐热陶瓷 (堇青石) Heat-Resistance ceramics(cordierite)



陶瓷烤网

Ceramic Barbecue Grills

我司生产各种规格烧烤网,种类如下:

1. 包边方形烧烤网, 2. 焊接方形烧烤网
3. 弧形烧烤网等

Our company produces various barbecue grills, same as:

1. Edge-folded square barbecue grill
2. welding square barbecue grill
3. arc barbecue grill

产品结构: 1. 中间是镀锌的拔丝轧花网
2. 用马口铁包边

用途: 主要用于面食、肉类、鱼类的烧烤。

规格: 可根据客户要求定做各种尺寸

Structure: 1. zincification cotton spinning net in middle
2. Edge is folded by tinplate

Application: barbecue of noodles, meat and fish
Specification: we can make various sizes according to customer's demand

