

化工泵轴承组件

Chemical Pump Bearing Assembly



化工泵轴承组件

以碳化硅材料制造的滑动轴承具有耐强酸、碱、盐的侵蚀，耐异质颗粒的磨损，对润滑介质的要求较低，长寿命、低噪音等特点，适合输送含有固体颗粒和强腐蚀性以及有毒害的介质。在石化、造纸、纺织等工业作为一些材料的更新换代产品，广泛的运用在泵、反应釜之中。使用寿命提高5~10倍。

Chemical Pump Bearing Assembly

Silicon carbide sliding bearing is suitable for pumping solid particle content, strongly corrosion, and toxic medium with high acid, alkali and salt erosion resistant characteristic. Low noise, resistant to heterogeneous particle, lesser requirement to lubrication medium and improve the service life of 5-10 times, it has extensive application in the pump, the reaction still of the petrochemical, paper and textile industries as a replacement of some of the material.



化工泵轴承组件SiC Bearing Assembly

陶瓷结构件

工程陶瓷材料具有超强的耐腐蚀、耐高温、耐磨损、耐冲蚀及在高温下亦保持机械强度等特点。可使用其制造应用于高温、高压、高腐蚀、高辐射以及空间环境等恶劣条件下使用的机械部件。可大大提高这些设备的性能和使用寿命。

Technical Ceramic Components

Due to the characteristics of superior corrosion resistance, high temperature resistance, wear-resistant, resistant to erosion and high dimensional stability at high temperature etc., ceramic materials can be applied in manufacturing mechanical parts that working under hard conditions, such as in high-temperature, high pressure, high corrosion, high-radiation environment, it can greatly improve the performance and service life



氧化锆护套Zirconia Sleeve



碳化硅滑动轴承SiC Sliding Bearing

中国·牡丹江金钢钻碳化硼有限公司

CHINA · MUDANJIANG JINGANGZUAN BORON CARBIDE CO., LTD.

陶瓷阀门、机械密封件

Technical Ceramic Valves, Mechanical Seals



氧化锆球阀阀芯SiC Valve Disc

陶瓷阀门

碳化硅具有超强的耐腐蚀、耐高温、耐磨损、耐冲蚀及在高温下亦保持机械强度等显著特点。广泛应用于石化、冶金、造纸、电站、炼油等行业很难使用金属或其他材质的恶劣条件,如各类酸碱盐气体、液体、高温蒸汽和泥浆输送系统中。是强腐蚀场合下钛金属阀、蒙乃尔阀的理想替代产品。碳化硅阀芯具有运行经济性高和寿命长(是钛阀的5~10倍)的优点。

Technical Ceramic Valves

Due to SiC has superior nature of corrosion resistance, high temperature resistance, wear-resistant, resistant to erosion, well maintained mechanical strength at a high temperature and other significant characteristics, Widely be adopted in petrochemical, metallurgy, paper-making, power plants, refineries and other industries which hard to use metal and other materials, such as various types of salt, acid-base gas, liquid, high-temperature steam and mud distribution system. It's ideal alternative products that can replace titanium valves, valve Monel in highly corrosive working environment. SiC spool also has merits of better operation economical efficiency and long working life (as 5 - 10 times long as titanium valves) compare with other material.



碳化硅球阀球SiC Ball Valve

陶瓷机械密封件

碳化硅机械密封环重量轻、热膨胀系数小、硬度高、高温强度好、在极高的温度下有良好的尺寸性、耐腐蚀性强和高弹性模量、使用寿命长等特点。可用于放射性、腐蚀性、剧毒、易燃、易爆、高温等诸多复杂工况条件。适合石油、化工泵及其旋转式机械上采用。

Technical Ceramic Mechanical Seals

Silicon carbide mechanical seal ring has characteristics of light weight, small coefficient of thermal expansion, high hardness, high temperature strength, and high dimensional stability at very high temperatures, strong corrosion resistance and high modulus of elasticity, long service life and so on. It can be used under radioactive, corrosive, toxic, flammable, explosive, high-temperature operating conditions and many other complex working conditions, such as petroleum, chemical mechanical rotary pump.



碳化硅密封环SiC Seal Ring



陶瓷柱塞、磨介

Ceramic Plunger Position、Grinding Medium

陶瓷柱塞

陶瓷柱塞主要用于机械、化工、石油等行业的高温清洗机、柱塞泵中，具有结合紧密、耐磨损、耐腐蚀、抗冲击的特点。使用陶瓷新材料柱塞可以大幅度提高石油开采效率，而且可以降低石油开采成本。陶瓷柱塞等已经在油田和石油化工企业得到应用，同金属材质产品相比寿命至少提高 5-10 倍以上。



氧化锆柱塞 Zirconia Plunger Position

Ceramic Plunger Position

Ceramic plunger is used for machinery, chemical industry, petroleum industry with joint connection, wear-resistant, corrosion resistance and impact resistance characteristics, such as in high temperature washing machine, plunger pump. It can increase oil production and reduce the cost of petroleum extraction. With its life prolonged to at least 5-10 times compared with metal products, Ceramic plunger position is applied in oil field and petrochemical enterprises.



碳化硼、碳化硅磨介 B₄C SiC Grinding Medium

陶瓷磨介

陶瓷磨介与传统的磨介相比具有高硬度、高耐磨、研磨效率高特点，可以防止物料污染。碳化硅陶瓷磨介的优越性能使其特别适用于纺织、印染、食品、医药等重要场合的物料研磨。碳化硅陶瓷毛坯球是用于制造耐强腐蚀轴承球的重要原料。

Ceramic Grinding Medium

Ceramic grinding medium has high hardness, high wear-resistant, and high efficiency characteristics compared with traditional ones to prevent materials from pollution. It is especially suitable for abrasive in textile, printing and dyeing, food, medicine and other important occasions. Blank silicon carbide ceramic ball is one of important raw materials in manufacturing strong corrosion-resistant ball of bearings.

特种陶瓷机械性能对照表 Mechanical Property Table of Sepial Ceramic Materials

	常压碳化硅 SSiC	反应碳化硅 RSiC	碳化硼 B ₄ C	氧化锆 ZrO ₂	氧化铝 Al ₂ O ₃	氮化硅 Si ₃ N ₄	碳化钨 WC	碳石墨 C
密度 $\rho/g/cm^3$ Density	3.1	3.0	2.48	6.0	3.6	3.2	14.9	1.7
威氏硬度 kg/mm^2 Hv	2350	1700	3500	1300	1400	1600	1650	377
抗弯强度 σ_b/MPa Flexural strength	590	390	400	1180	302	590	2160	30
弹性模量 E/GPa Elasticity Modulus	400	340	410	210	900	280	610	
断裂韧性 $MPa/m^{1/2}$ K _{1c} Fracture Toughness	4~5	3~4	3~4	6~10	3~5	5~7		

高技术精细陶瓷制品

High-tech Fine Ceramic products



牡丹江金钢钻碳化硼有限公司（原牡丹江磨料二厂）始建于1958年，是国家特种材料基地的龙头生产企业。公司现有员工300余人，其中1/3为专业技术人员，国家人事部在公司内设有博士后工作站，黑龙江省碳化硼特种材料研究中心，拥有雄厚的技术力量和强大的生产能力。

我公司生产的高技术精细陶瓷制品，是以高技术手段，采用新型专用设备工装和工艺技术制造而成的。它具有高硬度、高强度、耐腐蚀、耐磨损、自润滑性好、摩擦系数小、比重小等优异特性，广泛应用于机械、石油、化工、造船、冶金、汽车、航空航天、军工、原子能等恶劣工作环境以及极限领域。

经过多年的发展，我公司研制出碳化硼、碳化硅、氧化锆、氧化铝和复合陶瓷等系列材料，并用于生产陶瓷喷砂嘴，密封环，拉丝模，铸模，滑板块，结构件，轴承，防弹衣，装甲板，中子吸收块等。并可根据用户要求，生产各种形状及规格的工程陶瓷产品。

Mudanjiang Jingangzuan Boron Carbide Co., Ltd (the former was named Mudanjiang Second Abrasive Factory) was founded in 1958. it is the leader enterprise of special materials base. The company has about 300 staffs, of which 1 / 3 are professional experts and technicians.

The company has been armed with a strong technical facilities and large production capacity, which has been proved by a postdoctoral programme project approved & authorized by the China State Personnel Department. The chemical analysis center owned by the company is Heilongjiang province boron carbide special materials research and development center, which explains its advantage position in the field.

The fine ceramic products produced by our company are guaranteed & backed up by high-tech methods of using new special equipments, tooling and manufacturing process, they have distinguished in high hardness, high strength, corrosion resistance, wear-resistant, well self-lubricity, small friction coefficient and specific gravity and other outstanding characteristics, widely used in poor working environment and extreme field such as the area of machinery, petroleum, chemicals, shipbuilding, metallurgy, automobile, aerospace, defense, atomic energy .

After years of development, our company has developed boron carbide, silicon carbide, zirconia, alumina ceramic and composite materials, that applied in the production of ceramic nozzles, seal ring, die, mold, slide plates, pieces of the structure, bearings, Bulleproof vests, armor plates, pieces of neutron absorption, and etc. Meanwhile the plant also has ability to produce varieties of shapes and sizes engineering ceramic components based on the drawings from customers.

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