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► 电熔单斜氧化锆粉

Fused Monoclinic Zirconia Powder

该产品为采用专利技术由锆英石电熔脱硅熔炼制得，主要应用于耐火材料、陶瓷色料、陶瓷垫砂、氧化锆焊条、汽车刹车片添加剂等领域，在氧化锆水口、滑板等冶金耐火材料领域，产品有优良的抗热冲击性能。

Using patented technology, this product is obtained by electro-fusion of zircon to desilicate. It' s mainly used in refractory, ceramic pigment, ceramic placing sand, zirconium rod, automotive brake additives, etc. In area of metallurgical refractories, such as zirconia nozzle and sliding plate, product have excellent thermal shock resistance.

理化指标 Physical and Chemical Properties

代码 Brand	类别值 Sort Value	化学组成 Chemical Composition (%)					粒 度 Size D50(微米 μm)
		ZrO ₂	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	
Z-99	保证值 Guaranteed Value	≥ 99	≤ 0.10	≤ 0.10	≤0.08	≤ 0.13	空心球或按用户要求加工 Hollow Balls or Customized
Z-31	保证值 Guaranteed Value	≥ 98.5	≤ 0.60	≤ 0.40	≤0.08	≤ 0.20	12
Z-61	保证值 Guaranteed Value	≥ 98.5	≤ 0.60	≤ 0.40	≤0.08	≤ 0.20	3
Z-91	保证值 Guaranteed Value	≥ 99.2	≤ 0.10	≤ 0.20	≤0.08	≤ 0.20	按照用户要求加工

产品 Product



应用 Application



► 高性能单斜氧化锆粉

High Performance Monoclinic Zirconia Powder

该产品采用专有技术生产，该产品在微观展现出独有珊瑚状结构，与普通电熔氧化锆相比较，该产品具有高纯度、高活性、大比表面积、低烧结温度等优点，可用于高端陶瓷色料（高温锆黄与锆铁红）、高端耐火材料、高温窑具、特种玻璃、结构陶瓷等领域，尤其在高端耐火材料领域具有明显提高烧结密度、抗热冲击和降低烧结温度的特殊效果。

The product uses proprietary technology. It exhibits a unique micro-coral-like structure, in comparison with ordinary fused zirconia, it has a high purity, high activity, large surface area, low sintering temperature, etc. Best used for high-end ceramic pigment (high temperature praseodymium yellow and zirconia iron pink), high-end refractory, high temperature kiln furniture, specialty glass, structural ceramics and other fields, particularly with a significantly improved sintered density, thermal shock and reduce the field of high-end refractory special effects sintering temperature.

理化指标 Physical and Chemical Properties

代码 Brand	类别值 Sort Value	化学组成 Chemical Composition (%)					粒 度 Size D50(微米 μm)
		ZrO2	SiO2	Al2O3	Fe2O3	TiO2	
Z-12	保证值 Guaranteed Value	≥ 99.2	≤ 0.30	≤ 0.10	≤ 0.04	≤ 0.10	0.8
Z-15	保证值 Guaranteed Value	≥ 99.2	≤ 0.30	≤ 0.10	≤ 0.04	≤ 0.10	1.7
Z-10	保证值 Guaranteed Value	≥ 99.0	≤ 0.50	≤ 0.10	≤ 0.04	≤ 0.10	3



► 高寿命电熔钙稳定氧化锆

Long-life Fused Calcia Stabilized Zirconia

该产品采用独有的熔炼加工技术生产，产品致密，颗粒表面无缺陷，客户使用过程中极难脱熔，经历多次抗热冲击后强度和稳定化率几乎不发生变化，尤其适合浸入式水口渣线部位和各种窑具，其使用寿命比目前市场上普通电熔稳定氧化锆高40%以上。

The production process uses the unique melting method and processing method. The product is very compact and the surface is defect-free. The stabilizer is not easy to run out when customers use it. The strength and stabilization hardly change after repeated thermal shock. It is especially suitable for the submerged nozzle slag line and Kiln Furniture. Its service life is more than 40% longer than that of the ordinary fused stabilized zirconia on the market.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)						稳定化率 stabilization rate (%)	真密度 True density (g/cm³)	粒度Size (微米μm)
	ZrO₂	CaO	SiO₂	Al₂O₃	Fe₂O₃	TiO₂			
FCY	≥ 94	3.5-4.5	≤ 0.40	≤ 0.20	≤ 0.10	≤ 0.20	70-80	> 5.7	Customized



电熔钙稳定氧化锆

Fused Calcia Stabilized Zirconia

采用本公司专利技术和不同档次氧化锆原料生产的氧化钙稳定的氧化锆，可用于生产各种氧化锆陶瓷和耐火材料制品，如：电子承烧板、定径水口、滑板、浸入式水口、氧化锆空心球制品、氧化锆高档窑具制品等。

This material is made of various grades of zirconia, adding calcia as stabilizer, using our patent technique. It is used to produce all kinds of Zirconia ceramic and refractory products, such as refractory setter for electro-ceramic industry, sizing nozzles, sliding plates, submerged nozzles, zirconia hollow ball products, high quality zirconia furnace furniture, etc.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)						稳定化率 stabilization rate (%)	真密度 True density (g/cm³)	粒度Size (微米μm)
	ZrO₂	CaO	SiO₂	Al₂O₃	Fe₂O₃	TiO₂			
PCK-a	≥ 94	3.5-4.2	< 0.5	< 0.4	< 0.1	< 0.2	> 95	> 5.6	空心球或按用户要求加工 Hollow Balls or Customized
PCK-b	≥ 93	2.5-4.0	< 0.4	< 0.4	< 0.15	< 0.2	70-90	> 5.7	按要求加工Customized
PCK-T	≥ 93	2.5-4.0	≤ 0.5	≤ 0.4	< 0.15	< 0.2	70-90	> 5.7	按要求加工Customized
PCD	≥ 94	3.0-4.5	≤ 0.4	≤ 0.4	≤ 0.1	≤ 0.2	75-85	> 5.7	按要求加工Customized
PCD-C	≥ 95	3.0-4.5	≤ 0.2	≤ 0.1	≤ 0.1	≤ 0.1	75-85	> 5.8	按要求加工Customized
FCD	≥ 91	7.0-7.8	≤ 0.4	≤ 0.2	≤ 0.1	≤ 0.2	100	> 5.9	按要求加工Customized



► 电熔镁稳定氧化锆

Fused Magnesia Stabilized Zirconia

采用高纯氧化锆原料，以氧化镁稳定的电熔稳定氧化锆，用于氧化锆研磨体、定径水口、电子承烧板、陶瓷结构件等。

This Material is made of highly pure zirconia, which is stabilized by MgO, it is used in the special zirconia ceramic products, such as grinding body, sizing nozzle, refractory setter for electro-ceramic industry and ceramic structure piece, etc.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)							稳定化率 stabilization rate (%)	真密度 True density (g/cm ³)	粒度Size (微米μm)
	ZrO ₂	MgO	SiO ₂	Al ₂ O ₃	Y ₂ O ₃	Fe ₂ O ₃	TiO ₂			
PMD-a	≥ 95	3-4	≤0.2	≤0.1	-	≤0.1	≤0.1	70-85	> 5.7	按要求加工Customized
PMD-b	≥ 94	3-4	≤0.4	≤0.4	-	≤0.1	≤0.2	50-70	> 5.6	按要求加工Customized

► 电熔钇稳定氧化锆

Fused Yttrium Stabilized Zirconia

采用高纯氧化锆原料，以不同氧化钇剂量（3 摩尔、5 摩尔、8 摩尔等剂量）和特种电熔工艺制造的电熔钇稳定氧化锆原料，用于制造氧化锆耐火材料、感应炉保温层填充材料；制造钛合金铸造涂层材料、氧化锆制品；氧化铝板表层喷涂、等离子喷涂、透氧膜陶瓷环等。

Using high purity, with different doses of yttrium oxide (3 moles, 5 moles, 8 moles etc.) and special fusion manufacturing process, yttria-stabilized zirconia is used for the manufacture of zirconia refractories, filling material for induction furnace insulation layer; casting titanium alloy coating material, zirconia products, aluminum plate surface spraying, plasma spraying, and oxygen permeable membrane ceramic ring, etc.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)							稳定化率 stabilization rate (%)	真密度 True density (g/cm ³)	粒度Size (微米μm)
	ZrO ₂	Y ₂ O ₃	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	CaO			
5PYD-b	≥ 93	4.8-5.5	< 0.4	≤0.3	≤0.1	≤0.2	≤0.2	> 50	> 5.7	按要求加工Customized
7PYD-a	≥ 90	7-8	≤0.2	≤0.1	≤0.1	≤0.1	≤0.2	75-85	> 5.8	按要求加工Customized
7PYD-b	≥ 90	7-8	≤0.3	≤0.3	≤0.1	≤0.2	≤0.2	75-85	> 5.8	按要求加工Customized
7PYD-T	≥ 90	6-8	≤0.4	≤0.3	≤0.15	≤0.2	≤0.6	70-90	> 5.8	按要求加工Customized
7PYD-aQ	≥ 90	7-8	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1	> 95	> 5.8	空心球或按用户要求加工 Hollow Balls or Customized
7PYD-cQ	≥ 90	7-8	≤0.3	≤0.1	≤0.1	≤0.1	≤0.5	> 95	> 5.8	空心球或按用户要求加工 Hollow Balls or Customized
9PYD-b	≥ 88	8.8-9.8	≤0.4	≤0.2	≤0.1	≤0.2	≤0.2	> 95	> 5.8	按要求加工Customized
13PYD-b	≥ 84	13-14	≤0.3	≤0.2	≤0.1	≤0.2	≤0.2	100	> 5.8	按要求加工Customized
16PYD-a	≥ 81	15-17	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1	100	> 5.8	按要求加工Customized
20PYD-a	≥ 77	19-21	≤0.1	≤0.1	≤0.1	≤0.1	≤0.1	100	> 5.7	按要求加工Customized

► 电熔锆酸钡

Electro-Cast Barium Zirconate

用于制造钛合金熔模铸造材料、锆酸钡质耐火材料、制造陶瓷电容器、新型复合结构陶瓷、氧化铝板表层喷涂等。

Barium zirconate composite materials are for the manufacture of titanium alloy investment casting,barium zirconate refractories,ceramic capacitors,the new composite structural ceramics and aluminum plate surface spraying,etc.

► 镁锆共晶料

Magnesium-Zirconium Eutectic Material

用于等离子喷涂、冶炼特种钢的钢包用镁锆衬砖及镁钙锆衬砖、冶金功能耐火材料、水泥回转窑镁锆衬砖等。
Magnesium-Zirconium Eutectic Material is used for plasma spraying, Mg-Zr and Mg-Ca-Zr lining bricks for special steel ladle, metallurgical refractories and Mg-Zr lining bricks for rotary cement kiln,etc.

► 电熔锆酸钙

Electro-Cast Calcium Zirconate

用于防氧化铝堵塞浸入式水口内衬材料等。
Calcium Zirconate is used for lining material of anti-alumina clogging submerged nozzle etc.

理化指标 Physical and Chemical Properties

名称 Name	代码 Brand	化学组成 Chemical Composition (%)						真密度 True density (g/cm³)	粒度Size (微米μm)
		ZrO₂	Other	Al₂O₃	SiO₂	Fe₂O₃	TiO₂		
锆酸钙	DCZ	> 69	CaO25-28	< 0.4	< 0.5	< 0.1	< 0.15	> 4.60	按要求加工 Customized
锆酸钡	DBZ	> 44	BaO50-55	< 0.1	< 0.2	< 0.05	< 0.05	> 5.50	按要求加工 Customized
镁锆共晶料	DMZ	> 73	MgO22-25	< 0.2	< 0.45	< 0.15	< 0.05	> 4.80	按要求加工 Customized



► 镁锆粉

Magnesia-Zirconia Powder

镁锆粉采用自己独有的技术，是中国唯一的黄色镁锆结构陶瓷原料（Mg-PSZ）制造商，该粉体分为原始细粉（MZ01）和喷雾造粒粉（MZ02）两种规格，来满足客户不同的成型工艺，该粉体主要用于纺织陶瓷件、高温蒸汽阀、拔丝模具、塔轮、热电偶保护管、石油管道、定氧探头保护管等。

Using our own technique, we are the only manufacturer of yellow magnesia-zirconia structural ceramic material (Mg-PSZ) in China. This series have both the original powder (MZ01) and spray granulation powder (MZ02) to meet different customers' needs. It's best used for textile ceramic pieces, high temperature steam valves, wire drawing dies, pulley cone, thermocouple protection tubes, oil pipelines, oxygen probe protective tube, etc.

化学指标 Chemical Composition

代码 Brand	化学成分 Chemical Composition (%)								L.O.I (%)
	ZrO ₂ +HfO ₂	MgO	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	CaO	H ₂ O	
MZ01	≥95.00	3.20-3.70	≤0.40	≤0.20	≤0.10	≤0.20	≤0.02	≤0.20	≤0.20
MZ02	≥95.00	3.20-3.70	≤0.40	≤0.20	≤0.10	≤0.20	≤0.02	≤0.20	≤0.80

物理性能 Physical Properties

烧结密度 Sintered Density	维氏硬度 Vickers Hardness	断裂韧度 Fracture Strength (K1C)	烧结收缩率 Sintering Shrinkage	烧结温度 Sintering Temp
5.75g/cm ₃	1275Mpa	Mpa · m ¹	19.5%	1700°C

产品 Product

应用 Application

2



► 硅酸锆微珠

Zirconium Silicate Beads (ZSQ)

硅酸锆微珠也叫陶瓷喷丸或陶瓷砂，特别适用于许多工业领域的表面处理。适用各种喷砂系统，效率高并可以多次循环使用，例如手机等电子产品背壳的美化处理、模具清理、消除内应力、表面强化处理等行业。

Zirconium Silicate Beads are also known as ceramic blast balls or ceramic sand, best suitable for surface treatment in many industrial fields, a variety of blasting systems. It's high efficient and can be reused. Such as beautification treatments for back shells of mobile phones and other electronic products, mold cleanup, elimination of internal stress, surface hardening treatment, etc.

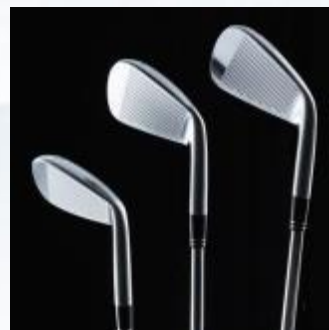
理化指标 Physical and Chemical Properties

真密度 True Density	堆积密度 Bulk Density	维氏硬度 Vickers Hardness	化学组成 Chemical Composition (%)			粒度 SIZE
			ZrO ₂	SiO ₂	Al ₂ O ₃	
3.85g/cm ₃	>2.30 kg/L	700 HV	55-65	20-30	≤ 10	B20 B30 B40 B60 B120 B125 B150 B170 B205B400 B505

产品 Product



应用 Application



电熔氧化钇

Material of Fused Yttrium

电熔氧化钇是用钇质原料采用特殊工艺研制开发的新产品，它具有纯度高、晶体尺寸大、耐高温、导热性好、抗渗性强等特点，可用于钛铸造行业和特种陶瓷行业。

The material of Fused Yttrium is a new production, succeeds through years efforts in developing a new special method. The production owns the character of high purity, big crystalline modification, high melting temperature, good heat-conductivity, high resistance to permeation, etc. It is used for castfused titanium metal area and special ceramic area.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)						熔点 Melting-point (℃)	真密度 True density (g/cm³)	粒度Size (微米μm)
	Y ₂ O ₃	ZrO ₂ +RO	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂			
DY-59	≥ 99.5	-	≤0.05	≤0.02	≤0.05	≤0.2	2410	5.05	按要求加工 Customized
DY-60	-	≥ 99.5	≤0.05	≤0.02	≤0.05	≤0.2	2415	5.08	按要求加工 Customized



► 镁锆共晶料-等离子球化喷涂粉

Magnesia-Zirconia Eutectic Material -Plasma Spheroidized Powder

镁锆共晶料作为热障涂层材料使用时，在900℃的高温下耐磨性能极其良好,涂层能很好抵御熔融金属的侵蚀。典型用途：柴油机活塞、阀门、气缸盖、铸模和槽用涂层。

When the magnesia-zirconia eutectic material is used as the thermal barrier coating material, the wear resistance of the coating is very good at 900 °C(1650°F), and the coating can resist the erosion of the molten metal. Typical uses: Coating for Piston, valve,cylinder head, mould and Groove of diesel engine.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)							真密度 True density (g/cm³)	粒度Size (微米μm)
	ZrO ₂	MgO	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	CaO		
DMZ-P	> 73	22-25	< 0.45	< 0.1	< 0.2	< 0.1	< 0.5	> 4.8	按要求加工Customized

► 钇稳定氧化锆-等离子球化喷涂粉

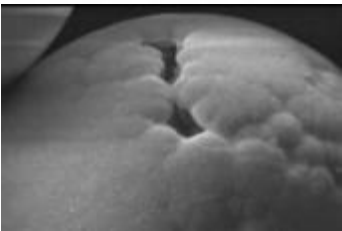
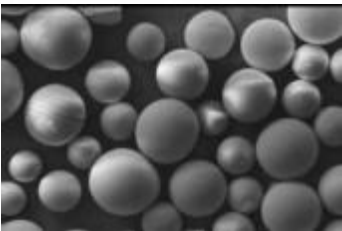
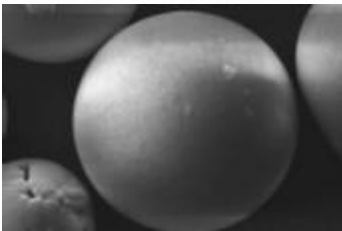
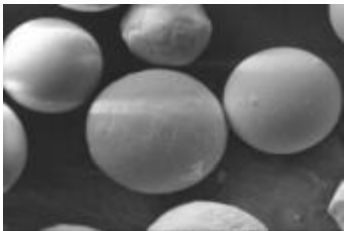
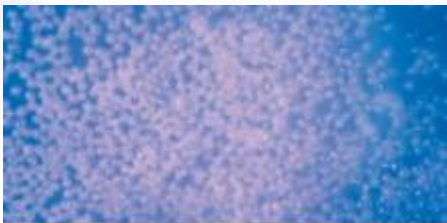
Yttrium Stabilized Zirconia-Plasma Spheroidized Powder

采用高纯原料，以特种电熔工艺和先进的等离子球化技术，制备而成的钇稳定氧化锆等离子球化喷涂粉，应用涵盖了航空涡轮、燃烧室、汽轮机、燃气轮机、油气输送、三明治复合承烧板涂层等多个领域。

Using high purity, with special fusionmanufacturing process and advanced Plasma spheroidization technology, Yttrium Stabilized Zirconia-Plasma spheroidized powder applications include aviation turbines, Combustion chambers, Steam turbines, Gas turbines, Oil and gas ransportation, and Sandwich composite bearings, Burnt plate coating and other fields.

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (%)								稳定化率 Stabilization rate (%)	真密度 True density (g/cm³)	粒度Size (微米μm)
	ZrO ₂	Y ₂ O ₃	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	MgO	CaO			
PYD-AQP	> 90	7-8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	> 95	> 6	按要求加工 Customized



► 氧化钇热喷涂粉末

Yttrium Oxide Thermal Spray Powder

高纯氧化钇（99.9%）是一种团聚烧结的Y₂O₃热喷涂复合粉末，氧化钇热喷涂涂层主要应用于半导体和液晶显示器（LCD）制造设备中，为了避免污染，一般要求氧化钇纯度超过99.9%。氧化钇热喷涂粉在极其严格的质量控制下生产，所以我们可以为客户提供最优质、纯净的氧化钇。该粉体采用了独特的分级技术和热处理技术，颗粒尺寸和颗粒强度都被严格控制在最佳状态，在不同类型的等离子喷枪上都可以实现较高的沉积效率。

The high purity yttrium oxide (>99.9%) is an agglomerated and sintered composite powder of Y₂O₃ for thermal spray.Yttrium oxide thermal spray coat is used in semiconductor and liquid-crystal-display (LCD) fabricating equipments, and demanded high purity more than 99.9% to prevent from contaminations. thermal spray powder are manufactured under very strict quality control, and supply our customer with yttrium oxide of high quality and purity.It is Free of spitting by powder classification technology and particle strength control and it is Designed for various types of Plasma Spray Guns to achieve higher deposition efficiency .

理化指标 Physical and Chemical Properties

代码 Brand	化学组成 Chemical Composition (ppm)							
	Y ₂ O ₃	Fe	Na	Mg	Al	Si	K	Ca
Y ₂ O ₃ High purity	> 99.9%	< 10	< 1	< 2	< 1	< 10	< 20	< 8

高纯氧化钇的应用 Applications of high purity Yttrium Oxide

高纯氧化钇主要应用于半导体和液晶显示器（LCD）生产设备中，具有抗等离子体腐蚀性能。
High purity yttrium oxide is applied in the semiconductor and liquid-crystal-display (LCD) production equipment with Anti-plasma erosion resistance .

典型应用 Typical applications

- 等离子蚀刻设备 Plasma etch equipments
- CVD设备CVD Equipments
- ESC（静电吸盘） ESC（Electrostatic chuck）



Plasma Spraying Powder

spray powder is a highly pure product. Powders are spheroidal with excellent flowability, chemical homogeneity, structural stability. Coatings have excellent thermal shock and insulating features. Usually used as a thermal spray coating for Top coat (insulating layer) in a thermal barrier coating (TBC) system for industrial and flight gas turbine engine components such as combustion liners, transition pieces, afterburners, heat shields, turbine airfoils. Thermal protection at temperatures up to 900 °C (1650 °F) on metallic diesel and gasoline engine components such as cylinder heads, piston crowns, exhaust and intake valves, turbochargers.

代号 Code	级别 Grade	ZrO ₂ +HfO ₂	Y ₂ O ₃	MgO	BaO	CaO	SiO ₂	粒度Size
PYD-HP	高纯 High Purity (白色)	余量Balance	7~8%	-	-	-	0.10%	11~125um 45~125um 11~106um 45~106um 11~90um 15~90um 45~90um 30~75um 11~53um 22~45um
PYD-AP	普通ordinary (灰白)	余量Balance	7~9%	-	-	-	0.20%	
PYD-HP-20Y	高纯 High Purity (白色)	余量Balance	18~21%	-	-	-	0.10%	
PYD-HP-65Y	高纯 High Purity (白色)	余量Balance	65~68%	-	-	-	0.10%	
PYD-CP	普通ordinary (黄色)	余量Balance	2.5%Y ₂ O ₃ +25%CeO ₂	-	-	-	0.30%	
PYD-CQ	普通ordinary (黄色)	余量Balance	8%	-	-	-	0.40%	
DMZ	普通ordinary (黄色)	余量Balance	-	24%	-	-	0.45%	
DBZ	普通ordinary (黄色)	余量Balance	-	-	50~55%	-	0.30%	
FCD	普通ordinary (黄色)	余量Balance	-	-	-	8%	0.40%	

应用 Application

