



Zirconium Beads and Mill Jars

■ Feature

1. Good roundness, smooth surface, brightness, high density, high strengthinertia and hardness, perfect grinding medium.
2. With very low wear rate, grinding media can prevent the material from.
3. Very long service life which can decreases its comprehensive operating cost.
4. Good stability, strong acid resistance and alkali proof.



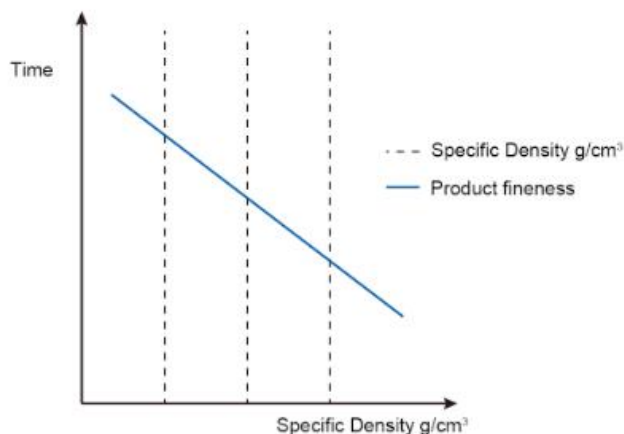
■ Main Technical Data

ZrO ₂	94.6%
Y ₂ O ₃	5.4%
Color	White
Specific Density (g/cm ³)	≥6.0
Hardness (GPa)	>10
Elastic Modulus (Gpa)	205
Fracture Toughness (Mpa.m ^{1/2})	7~10
Bending Strength (MPa)	1150
Grain Size (μm)	<0.5
Thermal Conductivity [W/(m.k)]	2.5
Bulk Density (g/cm ³)	—
Thermal Expansion Coefficient (20~400°C)(K)	9.6x10 ⁻⁶

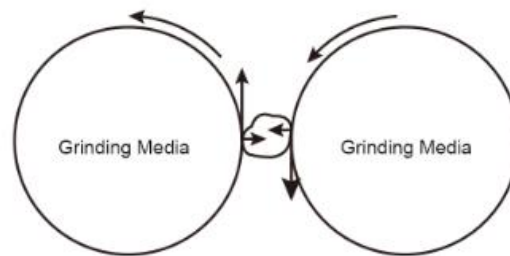
■ Applications

- Electronic ceramic
- Ink, paint, pigments, coating, dyes
- Food
- Cosmetic
- Pharmaceutical industry

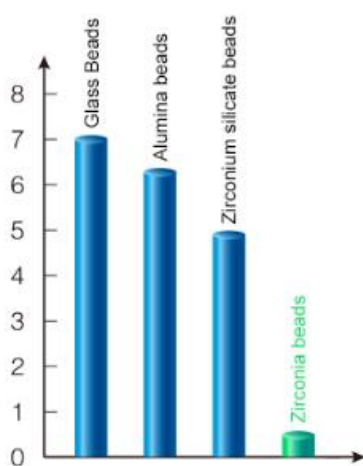




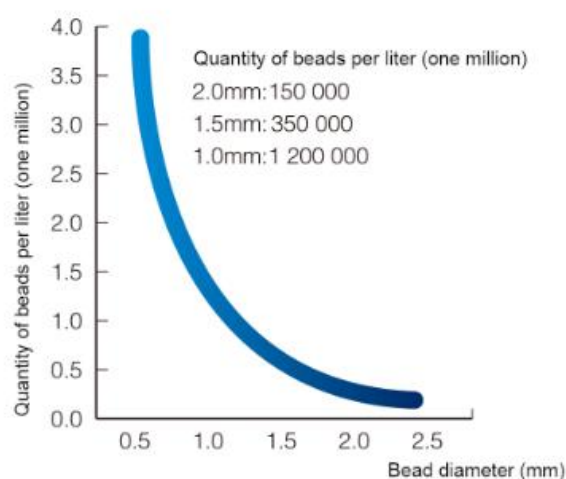
Correlation between grinding efficiency and bead density



Schematic diagram of dispersion



Grinding media wear level (% / t)



Quantity of beads per unit volume

Standard Sizes (ømm)

Beads

ø0.05–0.1	ø0.1–0.15	ø0.1–0.2	ø0.2–0.3	ø0.2–0.4	ø0.3–0.4
ø0.4–0.5	ø0.4–0.6	ø0.5–0.7	ø0.6–0.8	ø0.7–0.8	ø0.7–0.9
ø0.8–1.0	ø0.9–1.0	ø0.9–1.1	ø1.0–1.2	ø1.2–1.4	ø1.4–1.6
ø1.6–1.8	ø1.8–2.0	ø2.0–2.2	ø2.2–2.5	ø2.5–2.8	ø2.8–3.2
ø3.2–3.5	ø4	ø5			

Balls

ø6	ø7	ø8	ø10	ø15	ø20
ø30					

* Support customization.

Description

Zirconium oxide jars 60 times the hardness of regular steel, highly wear-resistant and resistant to acid and solvents. The grinding jars are extensively applied to in the fields of Paint, Ink, Geology, Metallurgy, Electronics, Construction Material, Ceramics, Chemical Engineering, Light Industry, Medicine, Environmental Protection and so on. Each jar set includes grinding jar, jar lid, rubber sealing gasket and different sizes of mixed zirconium oxide grinding balls.

Features

1. High cost-effective, low wear and long lifetime.
2. High specific gravity, high efficiency.
3. Highly wear resistant to acid and solvents.
4. Highly polished, smooth, easy to clean, low abrasion to the equipment.
5. High mechanical strength, good toughness, impact resistance, no broken beads.
6. Mainly used for lab planetary ball mill machines.



Description

Material	Zirconium Oxide – ZrO_2
Jar Volume	100ml to 3000ml
Max Loading Capacity	2/3 capacity of the grinding jar
Density	6.0 g/cm ³
Color	White
Suitable for	Fibrous, abrasive samples
Max Working Temperature	320°C

We can customize various types of vacuum jar according to customer's needs.

Physical Parameters

Composition (%)	Specific Gravity (g/cm ³)	Bulk Density (g/cm ³)	Hardness (Mho's)
ZrO ₂ : 95±0.2 Y ₂ O ₃ : 5±0.2	≥6.0	≥3.7	9



■ Specification Parameters

Volume of Jar (ml)	Inner Diameter (mm)	External Diameter (mm)	Height of Without Lid (mm)
50	70	56	50
100	50	70	60
250	70	90	80
500	84	100	108
1000	108	128	138
1500	112	132	165
2000	138	158	150
2500	138	158	180
3000	138	158	208

* Remarks: Size deviation within $\pm 2\text{mm}$; Weight deviation within $\pm 0.2\text{kg}$.



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