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Product Brochure



PLANETARY BALL MILL JAR

A grade Corundum planetary Mill Jar

High-purity corundum planetary mill jar, upgraded from standard jars. Hardness near diamond, ideal for high-performance grinding in planetary ball mills.

<https://www.labballmill.com/products/grinding-series/planetary-ball-mill-jar/a-grade-corundum-planetary-mill-jar.html>

Generated at 2026-07-28 15:50:38



Product Overview

High-purity corundum planetary mill jar, upgraded from standard jars. Hardness near diamond, ideal for high-performance grinding in planetary ball mills.





Product Introduction

The special-grade corundum planetary ball mill tank is made of high-quality and high-purity corundum material and has been fully upgraded on the basis of ordinary corundum ball mill tank. Corundum, whose name originates from India, is a mineralogy name. Its hardness is second only to diamond. It is currently one of the most ideal high-performance grinding media containers.

Compared with ordinary corundum jars, special-grade corundum jars have significantly improved raw material purity, sintering process and structural density, and have higher mechanical strength, better wear resistance and longer service life. Special-grade corundum jars and zirconia balls are a classic high-end wear-resistant combination that can meet more stringent grinding process requirements.







**High-end materials research**

- Nanomaterial preparation and dispersion
- Research and development of lithium battery electrode materials
- High performance ceramic powder processing
- Preparation of special alloy materials

Precision laboratory applications

- Materials Science Research Institute
- University laboratory teaching and scientific research

- New product development in corporate R&D center
- Quality Control Department Sample Preparation

Special industrial fields

- Electronic materials industry (magnetic materials, phosphors, etc.)
- Pharmaceutical industry (micronization of drugs)
- Jewelry industry (preparation of gem polishing materials)
- High-end coating industry (pigment dispersion and grinding)

Technical parameters

Model specifications	Outer diameter (mm)	Height (mm)
50ml	56	70
100ml	70	72
250ml	95	88
500ml	106	112
1000ml	133	131
1500ml	132	141
2000ml	132	173

Note: The above dimensions are standard specifications, special dimensions can be customized.

Core performance parameters

- **Material purity** : $\geq 99.5\%$ (special standard)
- **Maximum operating temperature** : 1600°C
- **Mohs hardness** : Level 9
- **density** : $\geq 3.75\text{g/cm}^3$
- **Bending strength** : $\geq 350\text{MPa}$
- **Thermal shock stability** : Excellent ($800^{\circ}\text{C} \leftrightarrow$ room temperature, water cooling)

Performance comparison with ordinary corundum jars

Performance indicators	Special grade corundum jar	Ordinary corundum jar
Material purity	≥99.5%	≥98.5%
Maximum operating temperature	1600°C	1400°C
Bending strength	≥350MPa	≥250MPa
Expected service life	Extended by 40-50%	Standard life
Thermal shock stability	Excellent	good
Applicable grinding particle size	≤0.1μm	≤1μm

Precautions for use

1. Loading requirements

- It is recommended that the filling amount should not exceed 2/3 of the tank volume.
- When dry grinding, the total volume of materials and grinding balls should be 1/3-1/2 of the tank volume.
- When wet grinding, the material should be completely immersed in the liquid

2. operating instructions

- Avoid idling operation and ensure there is enough grinding media in the tank
- Check the tank regularly for cracks or wear
- Use appropriate protective equipment for operation

3. Cleaning and maintenance

- Clean in time after use to avoid material residues
- It is recommended to use soft cleaning tools to avoid scratching the inner wall
- Keep dry and avoid humid conditions when storing

4. Safety warning

- It is strictly prohibited to use it beyond specifications (such as over-temperature, over-pressure, etc.)
- Handle it with care when moving and installing to avoid collisions
- If cracks or damage are found, stop using it immediately

Quality Assurance and Service Support

We promise that every special-grade corundum planetary ball mill jar will undergo strict quality testing to ensure that its performance reaches special-grade standards. We provide comprehensive technical support and after-sales services, including:

- Product usage guidance and technical support
- Customized services to meet special needs
- Complete after-sales guarantee system

For more product information or professional technical advice, please feel free to contact our customer service team.

Kind tips : Although the special grade corundum jar has super hardness and wear resistance, it is still fragile. Please avoid falling to the ground or receiving high-intensity impact during use to prevent breakage. We support customizing vacuum tanks of various materials and models according to customer requirements.

Product Features

Excellent high temperature resistance

Special-grade corundum tanks can withstand working temperatures up to 1600°C, far exceeding the 1400°C limit of ordinary corundum tanks, and are suitable for long-term grinding operations in high-temperature environments.

Enhanced mechanical strength

Through optimized raw material ratio and advanced sintering process, the impact resistance and bending strength of the special grade corundum jars are about 30% higher than that of ordinary products, and the service life is significantly extended.

Excellent corrosion resistance

It has excellent resistance to chemical reagents such as acids and alkalis, and can handle various corrosive materials without affecting product purity.

Higher material purity

Special-grade corundum jars use higher-purity raw materials to ensure that no impurities are introduced during the grinding process, and are especially suitable for applications with extremely high purity requirements.

fine microstructure

Special-grade corundum material has a denser and more uniform microstructure, which effectively prevents material penetration and adhesion and facilitates cleaning and maintenance.

Accessories & Customization

Accessories

Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

Customization

For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.