ball mill for fine grinding and tissue cell breaking

This ball mill is not only suitable for fine crushing and fine grinding of hard, medium hard, brittle, soft, elastic and fibrous materials, but also for small amount of samples, for fast dry grinding, wet grinding or frozen grinding.

High Throughput Tissue Ball Mill

The high throughput tissue ball mill is ideal for biological cell wall disruption and extraction of DNA, RNA, and chlorophyll a. It is engineered for rapid and reproducible sample grinding, mixing, and homogenization within seconds, supporting research and analysis in various fields.

Technical Features

1. Fast grinding and reproducible results: Efficient grinding, mixing, and homogenization achieved in seconds.
2. Wide selection of materials and accessory sizes: Compatible with various grinding containers and balls for different samples.
3. Adjustable grinding time and vibration frequency: Continuous control for optimized processing.

4. High throughput: Processes up to 192 samples in a single run using a multi-well adapter.
5. Supports dry, wet, and frozen grinding.
6. Screw cap grinding jar: Optimal for frozen grinding, prevents condensation and moisture intrusion.
7. Program storage: Stores up to 9 program groups for reproducible results.

Working Principle

Samples and grinding balls are placed in the grinding container (jar, tube, or adapter). High-frequency oscillation drives the balls to strike and rub the sample, causing rapid grinding, pulverization, mixing, and cell rupture—typically completed in seconds to minutes.

High-throughput tissue grinding:

The MM100 ball mill with a multi-well adapter can process up to 192 tissue samples simultaneously, ensuring reproducible, high-quality sample preparation and improved laboratory efficiency.

Frozen grinding:

Pre-freezing the sample and grinding jar enables grinding of thermo-sensitive, viscous, and elastic materials. The screw cap seal prevents condensation and moisture entry, preserving sample integrity and analysis accuracy.

Application Fields

1. Biology: Cell wall breaking, DNA/RNA extraction, plant (roots, stems, leaves, grains, seeds), human and animal tissues.
2. Agriculture: Seeds, grains, tobacco, wood, etc.
3. Glass industry: Glass and raw materials.
4. Ceramic industry: Sintered ceramics, electric ceramics, clay.
5. Construction industry: Slag, stone, cement.
6. Environment: Soil, chlorophyll a, solid waste, electronic waste, rubber, plastics.
7. Food and pharmaceutical: Medicines, Chinese herbs, food products.

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Model	**MM100**
Applications	crushing, mixing, homogenization, cell disruption, DNARNA extraction, freeze grinding
Industries	iological, pharmaceutical, agricultural, geological, forensic, food, metallurgical, chemical, RoHS testing, toys, environment, universities and colleges
Sample Characteristics	hard, medium hard, soft, brittle, elastic, fiber-containing Principle Impact force, friction force
Sample size	less than 15mm
Discharge size	approx. 5μm
Grinding platform	2pcs
Vibration frequency	100 to 2200rpm(continuously adjustable)
Batch size	0.2 to 100/3ml
Grinding time	5s to 2 min

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Model	**MM100**
mill method	Dry milling, wet milling, cold milling
Adapter	4-well, 6-well, 10-well, 12-well, 20-well, 24-well, 48-well, 96-well
Operation mode	push-button operation
Locking device	automatic center positioning locking device
Type of grinding jar	screw cap type grinding jar
Grinding kit material	Rigid steel, stainless steel, tungsten carbide, onyx, zirconium oxide, polytetrafluoroethylene (PTFE), etc.
Grinding kit size	0.2ml, 1.2ml, 1.5ml, 2ml, 5ml, 10ml, 25ml, 35ml, 50ml
Grinding time setting	1s to 99min59s
Power supply	220Vac, 50Hz
Power	240W

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Model	**MM100**
Weight	25kg