

MBI BeadBlaster 24 Microtube Homogenizer (Refrigerated)

SKU: MBIZR-02929-99



OVERVIEW

The MBI BeadBlaster 24 Microtube Homogenizer (Refrigerated) is a high-capacity bead mill homogenizer with built-in compressor-based refrigeration to protect temperature-sensitive molecules from heat degradation and denaturation. Even the most difficult and resistant samples are fully homogenized, often in 35 seconds or less, while the powerful cooling system maintains sample integrity throughout the process.

Unlike most bead homogenizers, the BeadBlaster 24R features true, compressor-based refrigeration—no dry ice, no liquid nitrogen, and no external air supply needed. Simply set the desired temperature, precool the chamber, and the temperature will be maintained throughout the homogenization process to keep samples cool.

KEY FEATURES

- Capacity: 24 × 2.0 mL tubes
- True compressor-based refrigeration
- Temperature range: -10°C to ambient
- Precool to 0°C in less than 30 minutes
- Speed range: 4.0 to 7.0 m/s (0.05 m/s increments)
- Cycle time: 1 to 90 seconds; up to 10 cycles per program
- Program memory stores up to 50 complete profiles
- Consecutive cycle mode with rest periods
- Sealed tubes prevent cross-contamination
- Transparent lid for sample visualization
- Mechanical lid lock for safe operation
- Brushless motor for quiet, maintenance-free operation
- 2-year warranty

True Refrigeration — No Dry Ice or Liquid Nitrogen Required

Simply set the desired temperature, precool the chamber, and the temperature will be maintained throughout the homogenization process. The stainless steel tube carrier subjects up to 24 samples to an optimized, high-speed, 3D motion, producing high-energy impacts between the samples and micro-beads to release cellular contents.

Product Features

- Can lyse most samples and preserve the integrity of nucleic acids (DNA, RNA, proteins) and drug molecules
- Use a separate crushing tube for each sample, no cross-contamination
- Beads are available in a variety of materials and diameters for different types of samples
- Grinding chamber is sealed, and the lowest freezing temperature can reach -10 °C
- The grinding cavity has a built-in vortex fan, so that the temperature difference in the cavity is <2 °C
- Adopt fluorine-free compressor for refrigeration, environmental protection and no pollution
- With dry grinding and wet grinding function

Operation Process

Note: Since the grinding process will generate heat, it is recommended to put the sample into the sample tube and store it at a low temperature (<40 °C) for 12 hours before taking it out for grinding for better results.

Digital control panel with intuitive interface



Stainless steel 24-tube carrier with 3D motion

APPLICATIONS

- Cell lysis & tissue homogenization of temperature-sensitive samples
- Protein extraction from heat-labile samples
- Bacterial & fungal cell lysis
- Soil & environmental sample homogenization
- DNA / RNA extraction requiring cooling to prevent degradation
- Microbial & yeast cell disruption
- Plant tissue grinding
- General bead beating workflows requiring sample cooling

Consumables Available: A full range of prefilled tube kits for a variety of sample types. Triple-Pure kits include acid-washed, heat-treated, zirconium beads tested to be free of nucleases, making them ideal for molecular biology applications.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Capacity	24 × 2.0 mL tubes (also accepts 12 × 5 mL tubes)
Speed Range	4.0 to 7.0 m/s (0.05 m/s increments); 2430 to 4260 rpm (10 rpm increments)
Cycle Time	1 to 90 sec (1 sec increments)
Pause Between Cycles	0 to 2 min (1 sec increments)
Max. Cycles Per Program	10
Program Memory	Up to 50 user-defined programs
Acceleration / Deceleration	≤ 4 sec each
Cooling Method	On-board compressor
Temperature Range	-10°C to ambient
Precool to 0°C	< 30 minutes
Chamber Uniformity	±2°C
Noise Level	< 68 dB
Sample Cooling	Passive cooled sample holder; storage at temperatures down to -40°C
Device Handling	Stand-alone device with modern touch sensors
Pre-programmed Protocols	Yes
User-defined Protocols	Yes
Dimensions (W × D × H)	12.6 × 20.1 × 16.2 in / 32 × 51 × 41 cm
Weight	88 lb / 40 kg
Electrical	120V 50 Hz or 240V 60 Hz
Power	1000 W
Warranty	2 years

Ordering Information

Part Number	MBIZR-02929-99
Description	MBI BeadBlaster 24 Microtube Homogenizer (Refrigerated)
Includes	Unit, power cable, 24-tube carrier, transparent lid, user manual
Voltage	120V 50 Hz or 240V 60 Hz
Warranty	2 years

BEADS & ACCESSORIES

- Glass Beads – Soda Lime, 3.0 mm & 5.0 mm
- Glass Beads – Low Alkali, 3.0 mm & 5.0 mm
- Stainless Steel Beads – 440C, 3.17 mm & 4.75 mm
- Stainless Steel Beads – 4.0 mm
- Zirconium Oxide Beads – 3.0 mm & 5.0 mm (very high density)
- Prefilled tube kits available in bulk
- Starter kit (D1032-SK) for method optimization

HOW IT WORKS

The BeadBlaster 24R utilizes a three-dimensional shaking motion to disrupt samples. This motion, combined with beads of the appropriate size and material, causes high-velocity impacts with the sample — an extremely fast and efficient method for releasing cellular contents, including nucleic acids and proteins. The integrated compressor cooling system maintains the chamber temperature throughout the run, protecting heat-sensitive molecules from degradation. After homogenization, tubes are spun briefly in a centrifuge, and the lysate removed with a pipette.