TMM-100 is specifically for grinding, homogenizing and mixing of hard, soft, and elastic materials quickly and efficiently. TMM-100 is also suitable for the disruption of biological cells as well as for DNA/RNA extraction. With different sizes of grinding jars, TMM-100 can also be used for wet and cryogenic grinding.

INFINIGEN Tissue Mixer Mill

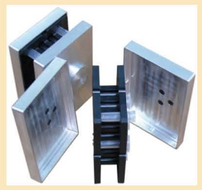
TMM-100

Grinding jars and Tube adapter racks

Different kinds of grinding jars and adapter racks can be choosed for different applications, including:

25ml stainless steel grinding jars (a pair)

50ml stainless steel grinding jars (a pair)



adapter rack for 2X28 reaction vials, 2.0 ml centrifugal tube, adapter rack for 2X96 deep well plate

Safety design

Installing and tightening of the grinding jars – simple and safe

The protective cover has a transparent observation window, Open just to stop for safeguard

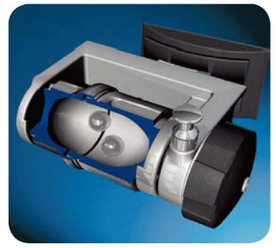
Features

- Quick grinding：grinding of 56 or 192 samples in 2~ 4 minutes, quickly and effectively.
- Applicable to various samples：used for size reduction and pulverization of hard, medium-hard, and brittle samples as well as for soft, elastic or fibrous ones. The crushed and abrasive materials include fibrous tissue, bone, hair, chemicals, pharmaceuticals, sugar pills, minerals, ores, alloy, glass, ceramics, soil, sludge, plant tissue, grain particles, oilseeds material, plastic, waste, wool, and textile, etc. in addition to plant samples, animal samples, bacteria and yeast samples .
- Cross contamination is not easy to occur.
- Flexible operation ：1-192 samples can be grinded each time.
- Vibrational speed is adjustable from 100 to 1500/min.
- Vibrational timing is adjustable from 1 second to 99 minutes 99 seconds.
- Optional accessories：including adapter rack for 2X28X/2.0ml reaction vials ,adapter rack for 2X96 deep-well plate, and grinding jars of 25ml and 50ml.

Grinding Principle

TMM-100 has a pair of rocker arm with high-speed and large amplitude. The grinding jars perform oscillations in a horizontal position. The inertia of the grinding balls causes them to impact with high energy on the sample material at the rounded ends of the grinding jars and pulverize it. Also, the movement of the grinding jars combined with the movement of the balls result in the intensive mixing of the sample. The degree of mixing can be increased even further by using several smaller balls. If many very small balls are used (e.g. glass beads) then, for example, biological cells can be disrupted. The large frictional impact effects between the beads ensure effective cell disruption.

As a function of frequency, up to 1800 impacts per minute are achieved resulting in a high degree of pulverization in very short times.



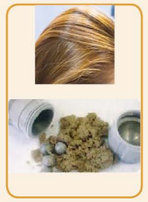
Cryogenic Grinding

TMM-100 can be used to the thermally-sensitive samples which need cryogenic grinding. Firstly, place the samples and grinding beads into the stainless steel screw-top grinding jars. Then immerse the jars into the liquid nitrogen. After fully frozen, fix the grinding jars onto the rapid self-locking clamping device. The screw-top grinding jars are particularly suitable for cryogenic grinding, as they remain hermetically sealed until they have regained room temperature. This prevents atmospheric humidity from condensing on the cold sample as water vapor which could penetrate the sample and falsify the analytical results. However, jars made from agate or ceramics should not be cooled with liquid nitrogen in order to avoid damages during the grinding process.

Applicable samples

Plant roots

Soybean



Hair (frozen grinding)

Mineral

Simple operation, quick results

Add the sample in the tube

Add the grinding beads

Add the Lysis Buffer (optional)

Close the cover, put the tube in the adapter rack

Fit the adapter rack into the clamping device, screw and lock

Close the protective cover, set parameters

Start grinding

Performance data

Feed size：Up to 8 mm
Grind Size：Approx. 5 μm
Batch/Sample Volume：Max. 2 x 20ml
Typical mean grinding time：2 minutes
Possible Applications ：Dry grinding Yes
Wet grinding Yes
Cryogenic grinding Yes
Type of Grinding Jars：Screw-top
Self-centering clamping device：Yes
No. of grinding stations：2
Digital preselection of
Vibrational frequency：100 ~ 1500 min-1
Digital preselection of grinding time：1s-99m59s
Power Consumption：150W
Material of grinding suite：hardened steel ,PTFE
Size of grinding jars：2ml / 25 ml / 50ml
Drive ：Brushless motor
Dimension (W x H x D)：30 × 20 × 46cm
Net weight：Approx. 26 kg
Noise value：65dB(A)
Measuring conditions ：
Feed material 8ml broken quartz pebbles, approx. 4.0~6.0mm
Grinding jars used 2 x 25ml steel
Grinding balls used 1 steel ball 20 mm dia.