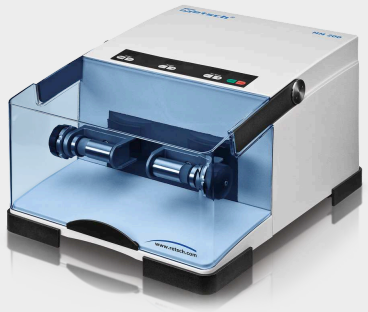
MIXER MILL MM 200



The mixer mill MM 200 is a compact versatile benchtop unit, which has been developed specially for dry grinding of small amounts of sample.
It can mix and homogenize **powders in only a few seconds**. It is also perfectly suitable for the **disruption of biological cells** as well as for **DNA/RNA extraction**.

You may also be interested in the High Energy Ball Mill Emax, an entirely new type of mill for high energy input. The unique combination of high friction and impact results in extremely fine particles within the shortest amount of time.

APPLICATION EXAMPLES

alloys, animal feed, bones, ceramics, cereals, chemical products, coal, coke, drugs, glass, grains, hair, minerals, oil seeds, ores, paper, plant materials, sewage sludge, soils, straw, tablets, textiles, tissue, tobacco, waste samples, wood, wool, ...

PRODUCT ADVANTAGES

- reproducible, efficient grinding, mixing and homogenization in seconds
- powerful grinding by impact and friction, up to 25 Hz for up to 20 samples per run
- 9 SOPs can be stored
- wide range of accessories including various jar and ball sizes, adapter racks, grinding tool materials

FEATURES

Applications	size reduction, mixing, homogenization, cell disruption
Field of application	Chemistry, agriculture, biology, construction materials, engineering / electronics, environment / recycling, food, geology / metallurgy, glass / ceramics, medicine / pharmaceuticals
Feed material	hard, medium-hard, soft, brittle, fibrous
Size reduction principle	impact, friction
Material feed size*	<= 6 mm
Final fineness*	~ 10 µm
Batch size / feed quantity*	max. 2 x 10ml
No. of grinding stations	2
Setting of vibrational frequency	digital, 3 - 25 Hz (180 - 1500 min-1)
Typical mean grinding time	30 s - 2 min
Dry grinding	yes
Wet grinding	no
Cryogenic grinding	no
Cell disruption with reaction vials	yes, up to 10 x 2.0 ml
Self-centering clamping device	no
Type of grinding jars	with push-fit lid
Material of grinding tools	hardened steel, stainless steel, tungsten carbide, agate, zirconium oxide, PTFE
Grinding jar sizes	1.5 ml / 5 ml / 10 ml / 25 ml
Setting of grinding time	digital, 10 s - 99 min
Storable SOPs	9
Electrical supply data	100-240 V, 50/60 Hz
Power connection	1-phase
Protection code	IP 30
Power consumption	100 W
W x H x D closed	371 x 266 x 461 mm
Net weight	~ 25 kg
Standards	CE

*depending on feed material and instrument configuration/settings

FUNCTIONAL PRINCIPLE

The grinding jars of the MM 200 perform radial 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 several 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.

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