

The diversity of foodstuffs with their often very different product properties represents a real challenge for food testing laboratories. Before the actual analysis, the sample materials – which can vary strongly with regards to hardness and moisture – need to be homogenized and reduced to a sufficiently small particle size. RETSCH's GRINDOMIX knife mills are the ideal tools to meet the complex requirements of the sample preparation of food. The model GM 200 has proven itself for the homogenization of small sample volumes of up to 700 ml. For larger volumes RETSCH offers the GM 300 model with a grinding chamber volume of 5,000 ml.

From muesli to streaky bacon

Complete homogenization of complex samples

GRINDING TOUGH MEAT

According to forecasts the worldwide meat consumption will increase substantially from today's 42.5 kg per year and person due to improved living conditions and changes in consumer behavior. Consequently, the importance of quality controls such as the determination of fat content of meat will increase. **Tough sample materials like fatty, inhomogeneous, streaky bacon pose quite a challenge to the homogenization process prior to analysis.** However, representative sample preparation is an essential step to obtain reliable analysis results. If larger parts of the rind or skin remain uncut, the sample is not homogeneous and the following analysis may yield false results. Another important aspect of size reduction is the **high water content** of the sample. Knife mills have proven to be best suited for thoroughly homogenizing this type of sample.

The knife mill GRINDOMIX GM 200 is equipped with a strong motor, to make use of the full cutting capacity of the blades for the size reduction process. **The new serrated blade knife is ideally suitable for homogenizing tough meat samples in a very short amount of time.** In addition, the short grinding times ensure low heat build-up.



GRINDOMIX GM 200

www.retsch.com/gm200





PERFORMANCE DATA

KNIFE MILLS GRINDOMIX GM 200/GM 300

Applications:	size reduction, homogenization
Feed material:	soft, medium-hard, elastic, containing water / fat / oil, dry, fibrous
Feed size*:	< 40 mm / < 130 mm
Final fineness*:	< 300 µm

*depending on feed material and instrument configuration

TYPICAL SAMPLE MATERIALS

Cereal bars, cheese, cocoa nibs, deep-frozen food, dried fruit, feed pellets, fish, grain, ham, meat, nuts, oil seed, pharmaceutical products, plant materials, salad, sausages, spices, sweets, vegetables, etc.

GRINDOMIX GM 300

www.retsch.com/gm300

The GRINDOMIX GM 300 processes sample volumes up to 4.5 l (e.g. bread, salad, pizza) without preliminary size reduction quickly and reproducibly.

HOMOGENIZATION IN 3 STEPS

- 1 250 g pork shoulder are processed in the GM 200 with the serrated blade knife for 30 seconds with interval mode at 3,000 min⁻¹.
- 2 The first step is followed by 2 cycles of 30 seconds, each at 7,000 min⁻¹.
- 3 Complete homogenization of the sample is achieved after another 30 seconds at 10,000 min⁻¹.

Part of the sample sticks to the grinding container wall above the blades and needs to be removed with a scraper and returned to the grinding process from time to time.

available in steel, glass, polycarbonate or polypropylene. A special **gravity lid** reduces the sample volume during grinding to improve the homogenization of samples with high water content. The liquid which flows up the container walls (capillary effect) is returned to the grinding chamber via overflow channels, thus ensuring that no sample material is lost and that results are not falsified. A **lid for grinding chamber reduction** downsizes the volume of the PP grinding container to 0.5 l so that smaller amounts of up to 0.35 l are continuously subjected to the grinding process and cannot escape the blades.

TIP Video of meat homogenization in the GM 200: www.retsch.com/gm-meat

Thanks to **three different operation modes** – with forward motion the sample is cut, in reverse mode it is submitted to impact, and the interval mode ensures a thorough mixing of the sample – the size reduction process can be optimized with regards to the sample properties. A wide selection of accessories allows for adaptation of the GRINDOMIX mills to individual requirements. Grinding containers are

KNIFE MILLS
GRINDOMIX

- ▶ Perfect homogenization
- ▶ Results with minimum standard deviation
- ▶ Variable speed
- ▶ For sample volumes up to 700 ml or 4,500 ml
- ▶ Autoclavable grinding tools
- ▶ Unique lids for volume adaptation of grinding chamber
- ▶ Accessories for heavy-metal-free grinding

