

RETSCH Product Navigator

- Milling
- Sieving
- Assisting

Milling & Sieving for sample preparation and quality control



No matter what your requirements are for the processing and characterisation of solids – comminution, sample division, particle size determination, feeding or drying – RETSCH supplies the product you require.

Put yourself in the picture with these rapid and convenient decision-making aids.

Retsch[®]

Solutions in Milling & Sieving

RETSCH – when results matter

It is our experience that makes RETSCH one of the leading manufacturers of equipment for the preparation and characterisation of solid materials. A high level of technological development across our product range allied to close contact with our customer base ensure a winning formula.

The RETSCH product range covers mills, sample dividers, sieving machines and optical particle measuring instruments. In our extensive research and development activities we are constantly striving for customer and market-oriented solutions and implementing them systematically in our products and services. All the products from RETSCH fulfill the quality standards for industrial use.

RETSCH demonstrates its individuality and adaptability with its own application laboratories. Individual process and application advice, without obligation or cost, is a matter of course for RETSCH. On request by the customer, unusual input materials are tested at no charge and the most suitable product and process solution is recommended.

Mobility and cooperation are also part of the service: RETSCH comes to you regularly – with our mobile laboratory. The convenient way for you to identify your individual requirements on your own premises.



Owner André Verder (left) and
Managing Director Dr. Jürgen Pankratz
in front of the German headquarters

As a professional and competent business partner for research, science and industry, we offer our customers a wide range of services and products providing them with efficient solutions that fit their needs. Retsch aspires to develop forward-looking and innovative ideas while setting the highest quality standards as part of our everyday work.

- first-class quality for our products and service (ISO 9001:2000 certificate)
- comprehensive and expert consultation that is clear and objective
- ensuring perfect equipment functionality through calibration contracts
- our application laboratory implements tests with original customer sample materials free of charge and without any obligation
- international sales & distribution networks via our own international subsidiaries, agencies and accredited distributors throughout the world

**You too can rely on the know-how
from RETSCH – can quality really
be so simple?**



You will find RETSCH on all important
shows and exhibitions worldwide

Retsch[®]
www.retsch.com



Customer-oriented innovative expertise

Technical innovations only help the users when they come hand in hand with a high operational value, a long lifetime, and are environmentally friendly. In addition to superior functionality, we at RETSCH place a high value on very good ergonomics and ease of use. Working with Retsch equipment is a pleasurable experience because of their perfect function and good design!

The following products are but a few of RETSCH's innovations in the recent past.



Ultra centrifugal mill ZM 200

- New, particularly efficient Powerdrive with considerably higher throughput
- Wide speed range: 6,000 – 18,000 min⁻¹
- Convenient parameter setting via graphics display and ergonomic 1-button operation
- Safety plastic housing with automatic cover closure
- Wide range of accessories incl. new grinding set for small quantities and slotted sieves

Planetary ball mills PM 100, PM 200

- Up to 50% more energy input for optimum grinding when compared to other planetary mills
- Powerful drive allows use of all jar sizes, including the large 500 ml jar, at full speed
- Suitable for long-term and continuous grinding
- Speed and energy controls for reproducible results
- Convenient to use with display menu and one-button-operation
- Forced, efficient ventilation of chamber allows for wet grinding with solvents



Analytical sieve shakers AS 200 control

- For test sieves up to 203 mm (8") in diameter
- Exact, reproducible results according to DIN 66 165
- Setting of sieve base acceleration is possible
- Self-monitoring and control of vibration height
- Due to digital control of all operating parameters and option of recalibration, the unit complies with all stipulations to testing instruments and procedures according to ISO 9000
- For wet and dry sieving operations
- Simple operation, ergonomic design
- Control, monitoring and evaluation of the sieving operation using the EasySieve® software and a standard PC
- Low-noise and maintenance-free



Milling

Solutions for sample preparation for perfect analyses

First class comminution results, produced by the crushers and mills from RETSCH. From hard and brittle to oily and aqueous: we always have the right solution. Use the practical selection list and find the type of machine you need.



Jaw Crushers



Jaw crusher BB 51

- for hard, brittle materials
- feed size up to 35 mm
- final fineness down to approx. 0.5 mm



Jaw crusher BB 100

- for hard, brittle and tough materials
- feed size 50 mm
- final fineness down to approx. 4 mm



Jaw crusher BB 200

- for hard, brittle and tough materials
- feed size 90 mm
- final fineness down to approx. 2 mm



Jaw crusher BB 300

- for hard, brittle and tough materials
- feed size 150 mm
- final fineness down to approx. 5 mm

Rotor Mills



Ultra centrifugal mill ZM 200

- for soft, medium-hard, brittle and fibrous materials
- feed size up to 10 mm
- final fineness down to approx. 0.04 mm



Cross beater mill SK 100

- for medium-hard, brittle materials
- feed size up to 15 mm
- final fineness down to approx. 0.1 mm



Rotor beater mill SR 200/SR 300

- for soft and medium-hard materials
- feed size up to 15 mm
- final fineness down to approx. 0.08 mm



Grindomix GM 200

- for material containing water, grease or oil, and dry materials
- feed size up to 10 - 40 mm
- final fineness down to approx. 0.3 mm

Mortar Grinders



Mortar grinder RM 100

- for soft, hard and brittle materials
- feed size up to 8 mm
- final fineness down to approx. 0.01 mm



Mortar grinder KM 100

- for soft, hard and brittle materials
- feed size up to 10 mm
- final fineness down to approx. 0.02 mm

Ball Mills and Mixer Mills



Planetary ball mill PM 100

- for soft, fibrous, hard and brittle materials
- feed size up to 10 mm
- final fineness down to 0.001 mm



Planetary ball mill PM 200

- for soft, fibrous, hard and brittle materials
- feed size up to 4 mm
- final fineness down to 0.001 mm

Selection guide for size reduction equipment

	BB 51	BB 100	BB 200	BB 300	ZM 200	SK 100	SR 200	SR 300	GM 200	SM 100	SM 2000	RS 100	DM 200	RM 100	KM 100	PM 100	PM 200	PM 400	S 100	MM 200	MM 301
Feed size* approx. (mm)	35	50	90	150	10	15	15	15	10-40	80x60		15	20	8	10	10	4	10	10	6	8
Final fineness* approx. (mm)	0.5	4	2	5	0.04	0.1	0.08	0.08	0.3	0.25 - 20		0.04	0.1	0.01	0.02	0.001	0.001	0.001	0.001	0.01	0.005
Construction materials, concrete	•••	•••	•••	•••	-	••	-	-	-	-	-	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••
Soil, sewage sludge	•	•	•	•	•	•	-	-	•	-	-	••	••	••	••	•••	•••	•••	•••	•••	•••
Chemical products	•	•	•	•	•••	•	••	••	•	•	•	•	•	•••	•••	•••	•••	•••	•••	•••	•••
Paints, pigments, fillers	•	•	•	•	••	•	•	•	•	-	-	••	-	•••	•••	•••	•••	•••	•••	•••	•••
Meat and sausages	-	-	-	-	•	-	-	-	•••	-	-	-	-	-	-	-	-	-	-	•	•
Feedstuffs	-	-	-	-	••	•	•	•	••	•••	•••	•	•	-	-	•	•	•	•	•	••
Condiments	-	-	-	-	•••	-	•	•	•••	••	••	•	-	-	-	•	•	•	•	•	••
Glass, ceramics	•••	•••	•••	•••	-	•	-	-	-	-	-	•••	•••	••	••	•••	•••	•••	•••	•••	•••
Household and industrial waste	-	-	-	-	••	•	-	-	-	••	•••	-	-	-	-	••	••	••	••	••	••
Wood, bones, paper	-	-	-	-	•••	•	-	-	-	•••	•••	•	-	•	•	•••	•••	•••	••	•••	•••
Cables, electronic scrap	-	-	-	-	••	•	-	-	-	••	•••	-	-	-	-	-	-	-	-	•	•
Cheese	-	-	-	-	••	-	-	-	•••	-	-	-	-	•	•	-	-	-	-	-	-
Coal, coke	•••	•••	•••	•••	••	••	•	•	-	•	•	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••
Plastics, rubber	-	-	-	-	••	-	-	-	-	•••	•••	-	-	-	-	-	-	-	-	••	••
Food and drugs	-	-	-	-	••	-	••	••	•••	••	••	-	-	•	•	•	•	•	•	•	••
Leather, textiles	-	-	-	-	••	•	•	•	-	•••	•••	-	-	-	-	•	•	•	-	••	••
Minerals, ores, rocks	•••	•••	•••	•••	•	•••	•	•	-	-	-	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••
Pharmaceutical products	-	-	-	-	•••	•	••	••	••	•	•	•	-	•••	•••	•••	•••	•••	•••	•••	•••
Plants, hay, straw	-	-	-	-	•••	-	•	•	•	•••	•••	••	-	•	•	•••	•••	•••	••	•••	•••

••• highly suitable •• suitable • partially suitable - not suitable *depending on sample and grinding time

The chart serves only for orientation purposes. The selection of the appropriate mill depends on a variety of parameters of the actual application - please contact us to discuss the right solution for you.

Disc Mills



Cutting mill SM 100

- for bulky, soft, fibrous and tough materials
- feed size up to 80 x 60 mm
- final fineness down to approx. 0.25 - 20 mm



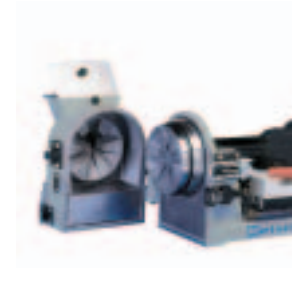
Heavy-duty cutting mill SM 2000

- for bulky, soft, fibrous and tough materials
- feed size up to 80 x 60 mm
- final fineness down to approx. 0.25 - 20 mm



Vibratory disc mill RS 100

- for medium-hard, hard, brittle and tough materials
- feed size up to 15 mm
- final fineness down to approx. 0.04 mm



Disc mill DM 200

- for medium-hard up to hard-brittle materials
- feed size up to 20 mm
- final fineness down to approx. 0.1 mm



Planetary ball mill PM 400

- for soft, fibrous, hard and brittle materials
- feed size up to 10 mm
- final fineness down to 0.001 mm



Centrifugal ball mill S 100

- for fibrous, hard and brittle materials
- feed size up to 10 mm
- final fineness down to 0.001 mm



Mixer mill MM 200

- for fibrous, hard and brittle materials
- feed size up to 6 mm
- final fineness down to 0.01 mm



Mixer mill MM 301

- for fibrous, hard and brittle materials
- feed size up to 8 mm
- final fineness down to 0.005 mm

Sieving

Solutions for optimal quality control of solids

The particle size determination equipment from RETSCH offers a unique technology which guarantees exact results at all times. Optical particle measuring instruments complement the line.

All RETSCH analytical sieve shakers of the model range "control" and all RETSCH test sieves can be calibrated and thus may be used in quality control according to DIN EN ISO 9000 ff.

WINDOWS™ based software solutions and extensive accessories support professional particle size analyses in modern laboratories.

Selection of equipment by measuring range

	0,5 µm	5 µm	20 µm	100 µm	1 mm	10 mm	25 mm	63 mm	
AS 200			■						
AS 300			■				■		
AS 400			■			■			
Camsizer®			■				■		
Crystalsizer®	■								

Analytical sieve shakers

Operation & Application Videos
www.retsch.com



AS 200 control

- measuring range 20 µm to 25 mm
- height of sieve stack up to 450 mm, Ø 100/150/200/203 mm
- indication of sieve base acceleration and vibration height
- available also as model variants digit and basic



AS 300 control

- measuring range 36 µm to 40 mm
- height of sieve stack up to 450 mm, Ø 100/150/200/203/305/315 mm
- up to 9 sieving programmes can be stored
- indication of sieve base acceleration and vibration height



AS 400 control

- measuring range 45 µm to 63 mm
- height of sieve stack up to 450 mm, Ø 100/150/200/203/305/400 mm
- the electronically controlled rotation speed can be continuously adjusted
- up to 9 sieving programmes can be stored

Test sieves and evaluation software



The **clamping device "comfort"** is extremely user friendly. It clamps the sieves securely, quickly and comfortably.



Test sieves

- made of high-alloy stainless steel 316
- permanently tight sieve fabric
- no cross contamination



EasySieve®

- automatic registration, evaluation, and administration of measurement data
- logical design, self-explanatory
- comprehensive evaluation possibilities

www.retsch.com



Assisting

Solutions for efficient crushing processes and sieve analyses

Sample Dividers



Sample divider PT 100

- for pourable powders and granules
- feed size up to 10 mm
- division into 6, 8 or 10 representative samples



Rotary tube sample divider PK 1000

- for pourable powders and granules
- feed size up to 10 mm
- various division ratios



Sample splitter RT

- for bulk materials
- feed size up to max. 50 mm
- division into 2 samples

RETSCH sample dividers ensure exact, representative and reproducible division results.

The drying, cleaning and feeding machines from RETSCH with their versatility and ergonomic design perform everyday functions both rapidly and accurately.

The new Pellet Press produces high-quality pellets which are characterized by a high degree of stability.

Feeders, Dryers, Cleaners, Pellet Press



Vibratory Feeder DR 100

- for pourable bulk materials
- feed size up to 12 mm
- versatile



Rapid dryer TG 100

- rapid, gentle drying
- effective temperature range from 40 to 120 °C
- air throughput from 900 to 1800 l/min



Ultrasonic baths UR 1/2/3

- effective, fast, gentle cleaning
- volume 5.7 / 42 / 45 litre
- cleaning duration 1-2 min



Pellet Press PP 25

- hydraulic press with manual operation
- maximum pressure 25 tons
- dies 32/40 mm dia.



Innovative products for particle characterisation

The RETSCH sister company Retsch Technology GmbH in cooperation with Jenoptik AG offers high-quality optical systems to determine the particle size and distribution of dispersions, powders and granulates. For powders and granulates, an analysis of conformity is possible.

Rugged design for industrial environment, compact size and operational convenience distinguish the instrumentation of Retsch Technology. Moreover, the systems are capable of automated and online operation, as to fulfill the increasing requirements of analysis and process engineering.

For more detailed information on optical particle sizers please refer to www.retsch-technology.de.



Camsizer

- measuring range 30 µm to 30 mm
- measuring principle: image processing
- high resolution particle size and particle shape analysis



AutoSampler

- fully automatic sample processing
- continuous operation possible
- barcode reader for sample recognition

Service and information

Please copy and send back or simply fax back: +49 (0) 21 29 / 87 02



Join us at www.retsched.com, and you will find further information such as news, product info, brochures, videos for download, search for applications and many more.

As a matter of course, we will also send you the requested information. Therefore, just copy this page and return it to us in a window envelope, or simply fax it back to us.

RETSCH GmbH
Rheinische Straße 36
42781 Haan · GERMANY



Sender	
Company	
Last name	
First name	
Department	
Street	
City and post code	
Country	
Phone	
Fax	
E-Mail	
Internet	
Our distributor	
Date	
Company stamp	

Information request	
<input type="checkbox"/>	Please send me...
<input type="checkbox"/>	your current price list
<input type="checkbox"/>	information on the following items:
<input type="checkbox"/>	Please call us to arrange an appointment by one of your representatives.
<input type="checkbox"/>	Please send me your application data sheet for a free test:
<input type="checkbox"/>	Milling
<input type="checkbox"/>	Sieving
<input type="checkbox"/>	Please add me to the mailing list of the RETSCH customer journal "the sample".
<input type="checkbox"/>	Please sign me up for your E-Mail newsletter.



Retsched GmbH
Rheinische Straße 36
42781 Haan · Germany
Phone +49 (0) 21 29 / 55 61 - 0
Fax +49 (0) 21 29 / 87 02
E-Mail info@retsched.com
Internet www.retsched.com

a VERDER company

Your distributor: