

WE 'R' COOL



NEW CRYOMILL

BENEFITS

- Fast, efficient cryogenic grinding at $-196\text{ }^{\circ}\text{C}$
- High operator safety and convenience with autofill system for LN_2
- Outstanding efficiency with high frequency impact ball milling at 25 Hz
- Highly reproducible grinding results
- Programmable cooling and grinding cycles
- Digital parameter setting
- Performs grinding cryogenically, at room temperature, or wet
- Simple operation, easy cleaning
- Feed size: up to 8 mm
- Final fineness: down to approx. $5\text{ }\mu\text{m}$
- With 1 grinding station for jars up to 50 ml

www.retsch.com/cryomill

IDEAL FOR:

- PLASTICS
- TEMPERATURE-SENSITIVE MATERIALS
- SAMPLES WITH VOLATILE COMPONENTS

PARTICULARLY SAFE:

- AUTOFILL SYSTEM FOR LIQUID NITROGEN
- NO-LOSS SCREW-TOP GRINDING JARS UP TO 50 ML

Retsch[®]

Solutions in Milling & Sieving

a VERDER company

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CRYOMILL



Performance data		CryoMill	
Field of application	size reduction, mixing, homogenization, cell disruption		
Feed material	hard, medium-hard, soft, brittle, elastic, fibrous		
Feed size*	up to 8 mm		
Final fineness*	approx. 5 µm		
Batch/Sample volume	max. 20 ml		
Typical mean grinding time	pre-cooling: 10 minutes, grinding: 1 minute		
Possible applications			
Cryogenic grinding	yes		
Wet grinding	yes		
Dry grinding	yes		
Cell disruption with reaction vials	4 x 2 ml		
Suitable grinding jars	5, 25, 35, 50 ml		
No. of grinding stations	1		
Digital preselection of vibrational frequency	3 - 25 Hz (180 - 1500 min ⁻¹)		
Digital preselection of grinding time	10 s - 99 min		
Memory for parameter combinations	1		
Technical data			
Power consumption	160 W		
W x H x D	385 x 370 x 570 mm		
Net weight	approx. 46 kg		
*depending on feed material and instrument configuration/settings			

Order data

CryoMill				Item No.
CryoMill				
(Please order Autofill with LN ₂ container, grinding jars and balls separately)				
CryoMill	for 100-240 V, 50/60 Hz			20.748.0001
Grinding jars	5 ml*	25 ml	35 ml	50 ml
Stainless steel	01.462.0290	01.462.0289	01.462.0288	01.462.0284
Hardened steel	01.462.0300	01.462.0297	01.462.0298	01.462.0299
*to be used with adapter 02.706.0272				
Accessories				
Autofill with LN ₂ container, 10 liters				02.480.0001
Adapter for use of 2/4 grinding jars, 5 ml				02.706.0272
Adapter for use of 2/4 reaction vials, 2 ml				02.706.0277
Safe-Lock reaction vials 2 ml, 1000 pcs.				22.749.0001

For additional accessories such as grinding balls etc. please refer to RETSCH's brochure "Ball Mills".

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With integrated cooling system

The CryoMill has been specially designed for cryogenic grinding. The grinding jar is **continually cooled** with liquid nitrogen from the integrated cooling system before and during the grinding process. Thus the sample is embrittled and volatile components are preserved. The liquid nitrogen circulates through the system and is continually replenished from an autofill system in the exact amount which is required to keep the temperature at -196 °C. The automatic cooling system guarantees that the grinding process is not started before the sample is thoroughly cooled. This results in reduced consumption and guarantees reproducible grinding results.

The size reduction principle is the same as that of the MM 400. With a **vibrational frequency of 25 Hz** the CryoMill grinds most materials very effectively in a few minutes. The sample is mainly ground by impact but also by friction which allows for **substantially finer grind sizes** compared to other cryogenic mills.

The grinding parameters can be stored which helps to simplify routine tasks. LEDs in the display indicate the current state of operation, e.g. cooling or grinding.

The CryoMill is equipped with one grinding station for grinding jar volumes of 25 ml, 35 ml and 50 ml. It is also possible to use adapters for 4 grinding jars of 5 ml each as well as for reaction vials.

The mill can also be operated without cooling which makes it suitable for a vast range of applications.

RETSCH – Your specialist for sample preparation offers you a comprehensive range of equipment. Please request information on our crushers, mills, sieve shakers, sample dividers, feeders as well as cleaning and drying machines.