ProXES
your processing partner

EN

FIBRES
CRYSTALS
PIGMENTS
SUSPENSIONS
CORUNDUM STONE MILLS

FOR HPC & PHARMA

FrymaKoruma

GREAT FORMULATIONS NEED EXPERT MILLS.

Lipstick or mascara, dietary supplements or APIs, lab use or industrial production – FrymaKoruma Corundum Stone Mills (MK) are the most versatile experts when it comes to dispersion and wet milling of liquid, viscous and pasty products.

Their high efficiency and extreme flexibility make our MKs the first choice for use in the health, personal care & pharma industry.

At the heart of our MK mills are the corundum stones, which are available in various grains. While the rotor element rotates against the fixed stator at high speed, extreme shear and cutting forces in the adjustable milling gap reduce the product in size. The processing zone is sealed by an innovative, single or double acting mechanical seal, with no dead spaces.

MULTIPLE HPC APPLICATIONS

Corundum Stone Mills are highly versatile and adept at a wide range of processing applications in the HPC and pharmaceutical industry. Make-up or ointments? Emulsions or tablets? Our MK mills expertly grind, for example, pigments, softgel capsules filling or plant-based active ingredients.

CONSTANT TECHNOLOGICAL DEVELOPMENT

ProXES brand FrymaKoruma has been building Corundum Stone Mills for more than four decades. We see the success of our proven technology as a challenge and we make it our mission to constantly improve and further develop our milling technology. It is our goal to equip our customers with solutions that meet their markets changing requirements and to help make their business future-proof.

KEY BENEFITS

- excellent wet grinding performance for small to large throughput
- reliably high product quality
- adjustable grinding gap
- minimal product loss
- fully scalable technology for R&D as well as industrial use
- exceptional lifespan
- low-wear ceramic grinding tools
- easy assembly/ disassembly

FINE WET-MILLING DISPERSING

MORE OPTIONS, MORE FLEXIBILITY.

EFFICIENT
RELIABLE
VERSATILE

No two processing facilities are alike – nor are our MKs. You can choose between throughput capabilities from 10 to 5,000 l/h, units with feeder pump or funnel, vertical or horizontal designs, and many other options.

CORUNDUM GRINDING DISCS IN MULTIPLE GRAINS

ProXES grinding discs are made of high-quality synthetic corundum grains. Each batch of our self-sharpening grinding discs is tested to eliminate potential defects. Corundum grinding discs are available in grains from 16 to 120 grit.

DIFFERENT DESIGNS AND MODULAR EXTENSIONS

Thanks to various modular extensions, FrymaKoruma Corundum Stone Mills are highly configurable to meet your requirements.

- product infeed via pump or hopper with feed screw
- grinding tools with different grits
- optimal surface quality
- tri-clamp and flange connections
- different positions for inlet/outlets
- heatable/coolable
- explosion-proof design for proces sing of hazardous products (ATEX)
- double and single-acting mechanical seal
- qualification process

Machine	Throughput (l/h) approx.	Installed power (kw)	Dimensions (mm) L x W x H	Weight (kg)
MK 95	10 – 160	5.5	560 x 370 x 350	100
MK 160	30 – 500	11	760 x 450 x 500	200
MK 180	50 – 1000	15	840 x 480 x 500	200
MK 250	90 – 2000	22	1130 x 530 x 560	400
MK 300	150 – 3000	37	1260 x 670 x 850	650
MK 320	200 – 5000	45	1130 x 370 x 870	650

Disclaimer: Illustrative purposes only. Actual machine construction may vary by specification.

MAKE-UP
LIPSTICK MASSES
PIGMENTS
OINTMENTS

AND WHAT ABOUT VEGAN PRODUCTS?

From soy and nut drinks to vegan burgers, spreads and dips – the food industry is experiencing a drift experiencing a drift towards plant-based alternatives. Ask our experts about how ProXES can help you embrace the vegan trend. Let's accelerate your ideas!

COARSER?
FINER?
WHATEVER YOU NEED!

What's your target particle size: 1,000 microns or 1 µm? At ProXES we pride ourselves in offering a wide range of reliable mills for coarser and extra-fine wet grinding. In addition to our Corundum Stone Mills (MK), our portfolio includes Perforated Disc Mills (ML), Toothed Colloid Mills (MZ) and Coball Bead Mills (MS). Thanks to the modular design of our technologies and their interchangeable parts, our mills can be adapted to different tasks, for example when you are revising existing processes or starting new ones.

PULPING AND MASHING WITH THE PERFORATED DISC MILL (ML)

Perforated disc mills (ML) are used for the initial size reduction and pre-milling of bulky products (e.g. fruit and vegetables).

- Plant based cosmetic active ingredients (aloe vera, ginger, extracts)
- Nutritional supplements (algae, collagen)
- Algae

TOOTHED COLLOID MILL (MZ) FOR SUSPENSIONS AND EMULSIONS

Toothed Colloid Mills (MZ) are experts for the wet milling of fluids and high-viscosity suspensions and emulsions. Tailored to your requirements, ProXES offers a range of colloid milling sets. While the standard milling set is suitable for universal use, the coarse-toothed set is ideal for size reduction of solids in suspensions, and the cross-toothed set delivers smaller particle sizes and finer dispersions.

COBALL BEAD MILL (MS) FOR SUSPENSIONS

The Coball Bead Mill is used for very fine milling, for suspensions of medium to high viscosities. The versatile mills deliver prime product quality efficiently and cost effectively.

- Pharmaceutical active ingredients (eye drops, sterile suspensions, creams)
- Compounds for dental fillings
- Pigments and dyes
- Vitamins and minerals

Mills and particle size

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1 **ProXES Headquarters, Germany**
info@proxes.com

1 **Stephan Machinery GmbH, Germany**
info@stephan-machinery.com

2 **FrymaKoruma AG, Switzerland**
info@frymakoruma.com

3 **ProXES Technology GmbH, Germany**
info.prt@proxes.com

4 **ProXES Benelux, Belgium**
info.benelux@proxes.com

5 **ProXES Benelux B.V., The Netherlands**
info.benelux@proxes.com

6 **ProXES France SAS**
info.fr@proxes.com

7 **ProXES Polska Sp. z o.o.**
info.pl@proxes.com

8 **ProXES UK & Ireland Ltd.**
ukireland@proxes.com

9 **ProXES Inc. IL, USA**
salesnorthamerica@proxes.com

10 **ProXES Inc. NJ, USA**
salesnorthamerica@proxes.com

11 **ProXES (Shanghai) Machinery Co. Ltd.**
info.cn@proxes.com

12 **ProXES Asia Pacific Pte Ltd., Singapore**
info.sg@proxes.com

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EXCELLENCE IS A TEAM EFFORT

With three leading brands FrymaKoruma, Stephan and Terlet under one roof, ProXES combines long-standing expertise with a challenger mindset. As an agile partner, we support our customers from first product concept to the implementation of a successful production process.

At ProXES, we believe in the power of co-creation: We're here to listen, learn and advise. In close collaboration with our customers, we merge their ideas and our technologies into innovative processes and tailor-made solutions that help them align the quality, energy efficiency and profit of their production.

With standalone machines, modern process lines, advanced automation and service concepts, ProXES drives the business of customers in the food, pharmaceutical, cosmetics and advanced materials industries. What about you? Let's create value together – sustainably!

FROM INSPIRATION TO FEASIBILITY

Our process technology and training centre is a space to try out new ideas. Here you can develop or improve formulas in a professionally equipped laboratory, test any kind of machine, perform scale-ups and produce test batches. You will receive expert advice and support on all the capabilities of the technical equipment and modifications.

GET IN TOUCH WITH OUR EXPERTS

For a full list of our global subsidiaries and their contact details, please visit:
www.proxes.com

Headquarters
ProXES GmbH
Stephanplatz 2, 31789 Hameln
Germany

T. +49 5151 583-0
E. info@proxes.com

Follow us on:

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