



NETZSCH Grinding & Dispersing

An Introduction to the Business Unit



GRINDING & C DISPERSING

NETZSCH Grinding & Dispersing is part of a strong, family-owned enterprise established in 1873, whose philosophy calls for quality leadership in every regard. All three business units of the NETZSCH Group – "Analyzing & Testing", "Grinding & Dispersing", "Pumps & Systems" – meet these requirements. Well-established structures give us the support to act quickly and without unnecessary bureaucracy. They pave the way for particularly close proximity to customers worldwide, facilitate investment and innovation, and consistently create synergy effects, which we pass on to our customers.

Our customers have made us what we are today: internationally sought-after specialists for everything related to the areas of "wet and dry grinding," "mixing and dispersing," and "deaeration and classification." Constantly changing demands have not only led to a comprehensive range of machines, but primarily to a unique pool of applications and processing knowledge as well. This puts us in the position to make the visions of our customers a reality – unbureaucratically, innovatively and economically – on into the future. You set the specifications, we make the machines. We are represented in all major industrial nations, not only with branch offices, but with production facilities as well. Across the globe, highly-specialized NETZSCH personnel stand ready for you to profit from their experience.

"We create economical, customized solutions for your application."



Management of the Business Unit Grinding & Dispersing

OUR BUSINESS UNIT

Grinding & Dispersing



230 Mio. €

Turnover



60

Sales and service points worldwide



1100+

Employees worldwide



9

Production sites worldwide



4

Business Units



12

Laboratories worldwide

In the truest sense, NETZSCH works in close proximity to the customer. Today we are manufacturing in Germany, the USA, Brazil, Russia, India and China. Wherever new markets are becoming established, we provide you with on-site support and advice. In a globally organized regional sales network, we make sure that you will always be working with highly-qualified NETZSCH specialists. This means that, wherever you are in the world, you will receive local advice and support from NETZSCH specialists in Sales, Service, Design and Process Engineering.



We are proud to provide innovative and sustainable solutions which improve everyone's life.



We design, establish and service our customer production processes in a lean and asset-light way combining the virtual and real world into innovative industry designs.



We enable our customers to build resilience for the future.

"We are there, where our customers are—with production, technology and service"



GRINDI DISP

CHEMICALS &

MINERALS

FOOD & **《**PHARMA



"With innovative material processing solutions, we create exciting products for a sustainable world."

NG & C ERSING

► SOLUTIONS

AFTERSALES

SERVICE

enable our customers to

ALS CHEMICA CHEMICALS CHEMICALS LEMINERALS MINIERA LS MINIERALS MINIERA



"The Chemicals & Minerals business field guarantees state-of-the-art production facilities and technology leadership. We guarantee top performance for customer-oriented process solutions for the processing and comminution of natural and synthetic raw materials."

Michael Schmidt | Business Field President

CHEMICALS & CGAL CHEMIC





NETZSCH continually responds to the demands of the chemicals industry and makes a significant contribution to the cutting-edge production of high-quality paints, coatings, printing inks, high-performance ceramics, adhesives, sealants, pesticides and batteries.

Decisive factors for global success include the extensive product range, the pilot-plant and production-scale machines and the complete production facilities. NETZSCH stands for efficient processes, maximum production capacity and reproducible product quality, as well as modern, user-friendly and innovative machine design.

From our technology locations in Europe, Asia and North and South America, we support our customers in production and in investment decisions with our know-how and numerous services.

NETZSCH puts the topic of "energy-efficient processing" at the center of its day-to-day thinking an acting for the "Minerals" business area.

Whether ore, limestone, talc, graphite, cement or other raw materials in the Mineral industry, our customers can efficiently Crush, Classify and disperse at every throughput with NETZSCH production system.

During our 150 years of success, we have revolutionized the process design by using proven technologies such as the Drum Mill, replacing it with new, more effective methods such as jet mills or agitator bead mills. We respond to our customers' requirements by enabling grain sizes down to the submicron range with a constant narrow grain size distribution an increasing production capacities, even with small aggregates.





Our machines and systems for the food and confectionery industry must meet our extremely high standards for quality, hygiene and safety.

But this isn't the only reason the food processing industry increasingly counts on machines and systems developed by NETZSCH. It is also the economical solutions for tasks in the areas of mixing, fine grinding and conching and the resulting design concepts that our customers find with NETZSCH.

In these times of continuously rising demands when it comes to hygiene and efficiency, our primary goal is to provide our customers with highly-productive, durable systems, and thus, investment security.

Our broad range of products, from continuous and batch mixers, to systems for wet and dry micronization, to high-pressure homogenizers, enables us to offer the best possible solution for the customer's application as a stand-alone unit or a combination of the various technologies.

DFOOD FOOD & CFOOD OD FOOD & CFOOD OD



"The Food & Pharma business field combines the latest production facilities with process engineering expertise and guarantees futureproof process solutions. We rely on the highest quality, hygiene and safety standards in order to provide you with long-lasting systems and thus investment security."

Wolfram Illgen & Matthias Kapp Business Field Presidents



ERGY ENERGY ENERGY ENERGY EN SOLUTIONS SOLUTIO

ENERGY SOLUTIONS ENERGY

Lithium-ion batteries store and supply electrical energy in mobile telephones, laptops and tools. Mobile applications, such as electric bicycles, electric scooters and other electric vehicles and hybrid concepts are also creating a steadily rising demand for batteries.

The goal is to develop ever more powerful batteries that feature increased capacity, a longer lifetime, shorter charging times and lighter weight. Lithium-ion batteries are basically comprised of a negative electrode (anode), a positive electrode (cathode) and a separator membrane. The individual electrodes are made up of conductor foils that are coated with a mixture of binders, active materials and additives (battery slurries).

FINERGY & ENERGY & EN

"With the Energy Solutions business field, we shape the future of tomorrow with you. Leading manufacturers trust our grinding machines and process solutions for the production of the latest batteries and accumulators."

Steven Min | Business Field President



ES AFIENDALES AFIERSALES FIERSALES AFIERSAL FIERSALES AFIERSAL FIERSALES AFIERSAL FIERSALES AFICE SER



"From any of our manufacturing and service centers in Europe, North and South America or Asia, a full dedicated and motivated AfterSales Service team is ready to help and support you."

Santiago Requena | Business Field President

SAFTERSALES & AF ES AFTERSALES & AF ES AFTERSALES & AF SERVICE SERV VICE SERVICE SER CERVICE SERVICE SER

CLOSE TO THE HEART OF NETZSCH!

NETZSCH offers its customers special *AfterSales* Service. We ensure that the machines function optimally during their service life and offer a comprehensive program of preventive maintenance, remote maintenance and field service. Original spare parts are supplied at fair prices. We also offer advice on the optimization of process operations and machine performance.

THE NETZSCH SERVICE NETWORK

Quick, reliable, competent, worldwide. The AFTERSALES Support team provides on-site professional support, quick installation, and replacement of original parts. From initial contact, through planning and commissioning, to technical consultation, NETZSCH is with you for every step of the journey.

The NETZSCH Group ensures proper and long-term operation of customers' systems by offering a broad range of services to support customers in the optimization of their system and processes.

Based on longstanding expertise in the areas of development and sales, the Business Unit of Grinding & Dispersing offers the following services for optimizing product quality, machine productivity, and system availability:

- Spare Parts
- Repairs
- Maintenance, Inspection & Service Agreements
- Commissioning
- Recondition & Conversions
- Process optimization
- NETZSCH-BEADS®

EXTENDED SERVICE

- In-depth error analysis
- Seminars for practitioners, machine operators and maintenance personnel
- Toll grinding
- Trial and lease machines
- Test runs on laboratory and production machines in the NETZSCH in-house technical center



WET GRINDING

NETZSCH-Feinmahltechnik leads the world in wet grinding technology. Our strength lies in the bundling of process engineering Know-How with our wide range of machines, from laboratory- to production-scale machines to complete production lines. Customized for each application, wet grinding units are available for ultra-fine dispersion and grinding down to the nanometer range.

You get innovative processing systems that make it possible to manufacture your product economically with the desired characteristics. Our line of machines meets many requirements, even unusual ones. Whatever result you may need, we'll find a way to achieve it.



"Our many years of experience in customized technologies assure you the perfect solution."



DRY GRINDING & CLASSIFYING

When it comes to grinding dry products, you've come to the right place. From A as in activated charcoal to Z as in zirconium oxide: NETZSCH mills grind everything, with precise definition and efficiency.

With us you'll find a comprehensive line of mills for every fineness, all the way down to the submicron range. High-performance classifiers for the separation of ultra-fine products round out the program. We will find an economical solution for your requirements with our innovative dry grinding technology.

From the single mill to complete turnkey milling systems, we offer you non-PSR, dust explosion protected or inertable plants, depending on your application. We match materials to the application, from stainless steel with polished surfaces to wear-protected finishes – we always have the right solution for your product.



NETZSCH Fluidized Bed Jet Mill CGS



"With our innovative dry grinding technology, we create efficient processes."





MIXING, DISPERSING AND HOMOGENIZING TECHNOLOGY

In mechanical process engineering, mixing, dispersing and homogenizing are essential steps in the process of attaining homogeneous and stable end products (suspensions and emulsions). Dispersing refers to the mixing of at least two substances that are not chemically combinable or hardly soluble. Our vast experience and competence lie primarily in dispersing solids in liquids.

For every step of the dispersing process, depending on the application, we have developed economical, eco-friendly solutions with which our customers can achieve the optimal product quality. This is particularly evident when solids are introduced into liquids. It is also true for wetting fine substances or those that are not readily wettable in water- or solvent-based systems. Our mixing, kneading and dispersing machines cover the entire spectrum of applications, from low- to high-viscosity products.



NETZSCH Inline Disperser Ψ-Mix®

"We attain the best product quality for our customers with our superior dispersion!"



SYSTEMS & PLANTS

In wet and dry processing, we have developed far beyond exclusive machine construction over the past few decades. At NETZSCH, mechanical engineering, systems and product Know-How, process engineering, information technology and outstanding service are combined to form a whole, the NETZSCH system, which we are constantly expanding and improving.

The advantage for our customers is plant design from a single source. Wherever you work with us, your contacts are highly-qualified NETZSCH specialists. You want to enter a new market, increase your production output, have a production plant built as a turn-key project?



"The key to maximum efficiency – systems from NETZSCH."

For all that you need a counterpart who not only knows his market but yours as well, who has excellent machine technology at his disposal, can refer to knowledge from decades of experience, whom you don't have to teach the ABCs of application technology and who can economically solve new issues that arise – NETZSCH.

You decide the degree of automation, from the manually-operated production line to the fully-automatic, monitored system, any configuration is possible, in both conventional and modular design. The modular design of our plants makes it easy to expand production with a minimal space requirement, thus eliminating costly on-site installations. From planning to commissioning and beyond, we'll always be at your side.



APPLICATION LABORATO

As part of our comprehensive range of services, our application laboratories have been developed according to the latest technical aspects. Our laboratory for wet grinding and mixing is located in Selb. Our technical center/laboratory for dry processing and classification is located in Hanau.

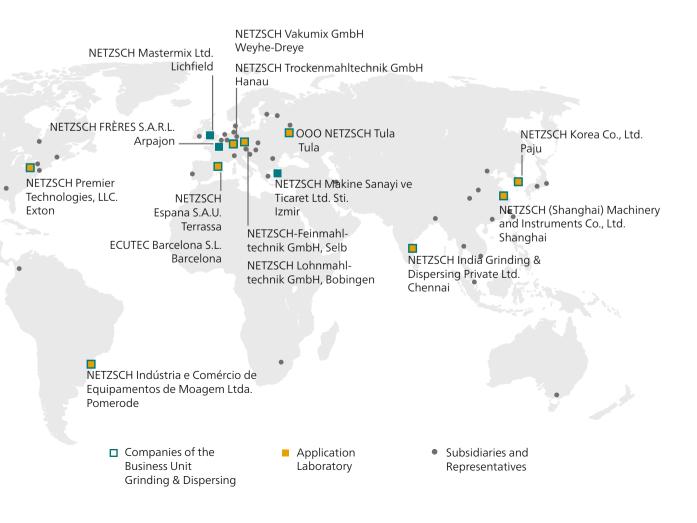
In these laboratories, we test the product you provide for grinding or processing according to

"Whatever you achieve on a laboratory scale, we guarantee you will achieve it on a production scale."

RIES FOR PRODUCT TESTING

your specifications in order to achieve the optimum grinding result. The tests can be carried out on a laboratory scale as well as in a pilot plant. After completion of the tests, we provide you with a comprehensive protocol with the test results, along with the ground product.

We would like to invite you to take part in the tests at our facility. In this way, we can ensure that the tests are carried out exactly according to your wishes and specifications. You can also take this opportunity to gain your own impression of our company.



COMPETENT, INNOVATIVI

NETZSCH Lohnmahltechnik is a service company with locations in Bobingen and Hanau. We work with highly modern and extremely diversified machinery for the mechanical processing of a wide variety of materials.

In addition to a technical center for product development and for processing small quantities, our laboratories also provide state-of-the-art technologies for diverse analyses and quality assurance. We focus on ensuring the highest quality in all processes.

To meet your needs, our service also includes the extremely important aspects of packaging, labeling and warehouse logistics, which are managed by our specialists competently, quickly and flexibly adapted to your requirements. We handle hazardous materials with particular professional responsibility.

We also offer contract processing in the wet sector. Our location in Selb is responsible for this.

We will find a solution tailor-made for you.

"Fine Grinding into the Micron and Submicron Range as a Service!"

E, FLEXIBLE



What can you expect from us?

- Transparent and open consultation
- Professional and quick solution for your product
- State-of-the-art machines and systems
- Metal-free and low-contamination material designs
- ATEX certified production
- Competent, comprehensive and global support from a single source



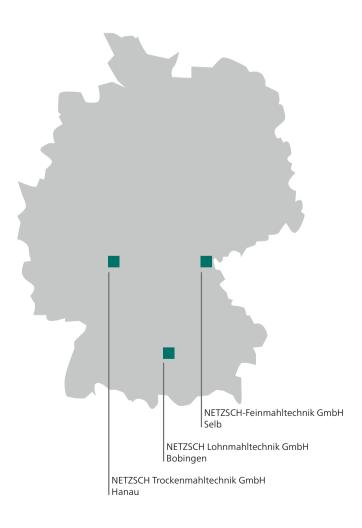
What benefits do you get from our service?

- No capital commitment
- No investment of your own
- Flexible and with a calculable risk through the market-introduction phase
- Planning reliability for your decisionmaking processes
- Bridging of capacity bottlenecks
- Product development support



Sustainability

- EcoVadis "silver"
- ISO 14001 implementation in 2022
- ISO 50061 since 2010



The NETZSCH Group is an owner-managed, international technology company with headquarters in Germany. The Business Units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems represent customized solutions at the highest level. More than 4600 employees in 36 countries and a worldwide sales and service network ensure customer proximity and competent service.

Our performance standards are high. We promise our customers Proven Excellence – exceptional performance in everything we do, proven time and again since 1873.

Proven Excellence.

Business Unit Grinding & Dispersing – The World's Leading Grinding Technology

NETZSCH-Feinmahltechnik | Germany NETZSCH Trockenmahltechnik | Germany NETZSCH Vakumix | Germany NETZSCH Lohnmahltechnik | Germany NETZSCH Mastermix | Great Britain NETZSCH FRÈRES | France NETZSCH España | Spain ECUTEC | Spain NETZSCH Machinery and Instruments | China NETZSCH India Grinding & Dispersing | India NETZSCH Tula | Russia NETZSCH Makine Sanayi ve Ticaret | Turkey NETZSCH Korea | Korea NETZSCH Premier Technologies | USA NETZSCH Equipamentos de Moagem | Brazil

NETZSCH Lohnmahltechnik GmbH Max-Fischer-Straße 20b 86399 Bobingen Germany info.nlt@netzsch.com NETZSCH Vakumix GmbH Hermann-Köhl-Straße 3 28199 Bremen Germany info.nvm@netzsch.com

NETZSCH-Feinmahltechnik GmbH Sedanstraße 70 95100 Selb Germany info.nft@netzsch.com NETZSCH Trockenmahltechnik GmbH Rodenbacher Chaussee 1 63457 Hanau Germany info.ntt@netzsch.com

