

# R&D and Process Support



Leverage our Expertise and Advanced Technologies to Streamline Product Development and Process Optimization

# KORSCH & MEDELPHARM: Your Trusted Partner for Tableting Solutions!

At KORSCH & MEDELPHARM, we serve a diverse range of customer needs, from grams to tons, across every stage of the tableting process.

From R&D to scale-up, to full scale production, our comprehensive range of machines and tablet compression expertise are here to support you.

[www.korsch.com](http://www.korsch.com)

## Understand & Develop

Material Characterizations  
Formulation Development Support



## Transfer & Optimize

Scale-Up Support  
Process Optimization  
Process Troubleshooting



## Enhance & Maximize

Training Programs  
Consulting Services  
Non-GMP Contract Manufacturing





## Understand Powder Behavior to Develop Robust Formulations

API characterization, excipient selection, and manufacturing process determination are essential in every tablet development to achieve a robust formulation.

Our pharmacists and formulation experts provide insights based on experiments and data to define the best combination of excipients and processes to target optimal quality attributes.

### Material Characterization

Fingerprint your API with our scientists by assessing flowability, particle morphology, compactibility, strain rate sensitivity, and ejection stress which are amongst potential Critical Material Attributes (CMAs).

Consider batch-to-batch consistency and raw material second source approval early in the development stage to secure production efficiency.

### Tablet Formulation Development

Study formulation blends and manufacturing processes following USP <1062> guidelines with our pharmacists to meet tablet Critical Quality Attributes (CQAs) such as dissolution, disintegration, or tensile strength. As an example, assess the impact of dry granulation process on flowability and re-compactibility with minimal amount of material.

Design the process to maximize production output, control cost, and ensure superior quality. Compaction simulators are essential to predict potential tablet defects and solve them during development stage. For example, sticking can be related to temperature or tooling surface which can be evaluated with our formulators prior to scale-up.



## Transfer R&D Findings to Production or Optimize Existing Processes

Successful scale-up, troubleshooting, and process optimization are key for tablet manufacturing efficiency.

Will your formulation withstand high compression speed? What will be your maximum production output?

### Scale-Up Support

De-risk scale-up by transferring Process Parameters (PPs) determined by compaction simulators to high-speed rotary tablet presses or production-scale roller compactors.

### Process Optimization

Optimize your production process parameters with our engineers to achieve consistent filling, optimal output, and minimal product loss.

Leverage our process specialists' know-how and experience to define your optimal process parameters enabling high-quality production and yield increase. Our facilities also offer non-GMP tablet contract manufacturing.

### Process Troubleshooting

Adjusting process parameters (compression speed, edge thickness, pre-compression ratio) on production tablet presses can be challenging and might require a great number of iterations to succeed.

Replicate tablet defects on compaction simulators using your tooling and your powder sample.

Find root cause and optimize rotary tablet press setup with our technology and our expertise.

On-site-support from our experienced technical team to tackle your production issues.



## Enhance your Skills and Maximize the Performance of your Tableting Equipment

Continuing education on Oral Solid Dosage (OSD) formulation development and production processes contributes to shortened time-to-market and enhanced manufacturing efficiency.

Transferring knowledge and know-how is part of our DNA. Our formulation scientists and process specialists provide in-house and on-site trainings to communicate best practices and make the most of your tableting equipment.

### Training Programs

Maximize the skills of your team of formulation scientists, process engineers and production operators by integrating our various theoretical and practical training programs on compression, equipment, data analysis, and press maintenance.

### Consulting Services

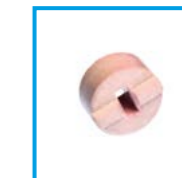
Take advantage of our experience and expertise to successfully develop your formulation or optimize your production performance.

### Non-GMP Contract Manufacturing

Use our complete product range and facility for the production of tablets from small volume to high volume batches.



## Tableting Solutions for all Industries



KORSCH delivers innovative solutions for a broad spectrum of products across various industries. Tablets are frequently used in a wide range of industries including food and dietary supplements, confectionery, chemicals, and technology, sintered metal, ceramics, and electrics.

- Very large formats
- Special shapes
- Aggressive or abrasive materials
- Sticky materials
- Materials with poor flowability

KORSCH & MEDELPHARM team welcomes these challenges. We continuously undertake product development work together with our customers in our state-of-the-art INNOVATION CENTERS and Science Lab. Our experts boast unparalleled competence in both standard and specialized solutions, enabling the development of new designs inspired by cross-industry innovations.

KORSCH tablet presses are built to operate in the most demanding environments, they must be productive, robust, efficient and extremely reliable. These are some of the challenges:

- Natural Products
- Requirement for heavy tonnage
- Requirement for deep filling depths
- Multi-layer up to five-layers
- Containment

Our objective is also to help our customers identify future potential that can be leveraged with our specialist's know-how. The sky seems to be the limit, and the term "tablet" can be redefined to cover almost any application. We open the door to streamlined product development and optimal process design at scale.

# Global Presence for Local R&D and Process Support



- **KORSCH America Inc. Innovation Center Boston**  
 Phone: +1-(508) 238-9080  
 service@korschamerica.com
- **MAQUIDREX Innovation Center Sao Paulo**  
 Phone: +353 0 1 2982633  
 mike@maquidrex.com.br
- **MEDELPHARM Science Lab Lyon**  
 Phone : +33 04 78 97 62 10  
 sciencelab@medelpharm.com
- **L. B. Bohle Technology Center Ennigerloh**  
 Phone: +49 25 24 93 23-0  
 inquiry@lbbohle.de
- **KORSCH AG Innovation Center Berlin**  
 Phone: +49 30 43576-300  
 service@korsch.de
- **Tema Innovation Center Istanbul**  
 Phone: +90 542 227 17 60  
 tema@temacons.com
- **KORSCH / L. B. Bohle Innovation Center Hyderabad**  
 Phone :+91 98 1900 4298  
 Pravin.gawas@korschindia.com
- **Rieckermann Innovation Center Shanghai**  
 Phone: +86 21 64728743  
 leckie.z@rieckermann.com
- **Winckler & Co. Ltd. Innovation Center Nagoya**  
 Phone: +81 78 384 2323  
 k.sawai@winckler.co.jp

