



**COATING LINES FOR
PHARMACEUTICAL PRODUCTS**

SAFE LINES FOR VALIDATED PROCESSES

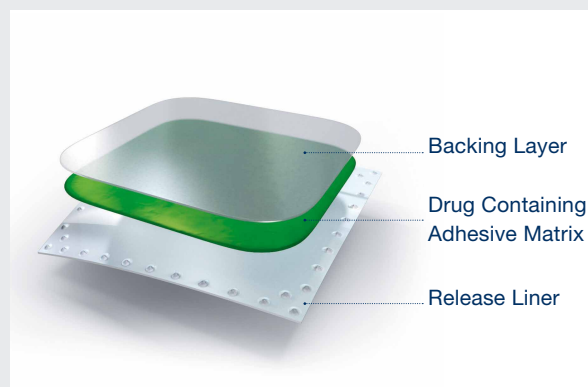
OLBRICH is the key supplier of GMP coating lines to the medical and pharmaceutical industry and is the specialist for the supply of tailor-made machines according to GMP standards, GAMP 5 and 21 CFR Part 11. Further clean room applications as well are part of our everyday business.

That is the very reason why the reliability of the production process and easy cleaning of our lines are of top priority for us. To achieve this we develop in co-operation with our engineering team sophisticated, customized concepts including the latest CIP (Cleaning In Place) solutions, which are sure to convince you.

Our customers' products:

- Transdermal delivery systems "TDS" and patches
- Transdermal therapeutic systems "TTS"
- Oral dissolvable films "ODF"
- Oral thin films "OTF"
- Edible films
- Mucoadhesive buccal film "MBF"
- Wound care products
- Self-adhesive products for medical applications
- Bandages and dressing material
- Skin treatment
- Membranes for diagnostics
- and many more

Monolithic matrix — TTS



Fast disintegrating buccal film



Courtesy of LTS Lohmann Therapie-Systeme AG

HIGH TECHNOLOGY FOR PRODUCTION LINES ACCORDING TO GMP REQUIREMENTS

Pharmaceutical products require intensive product validation processes before they can be released to the market.

Such validation even includes the production equipment and production processes.

We therefore addressed the market need for a reliable, lab-scale coating machine for pre-production validation of products and processes. This new product line reflects the sound OLBRICH technology of the mid-size and full size production lines — in small scale.

OLBRICH line concepts:

- Coating and laminating lines for transdermal systems
- Coating lines for oral films
- Coating and laminating lines for self-adhesive products
- Clean room lines for dressing material
- General clean room coating lines
- Modular machine designs for easy cleaning
- CIP technology (Cleaning In Place)
- Machines designed to GMP, Gamp 5 and 21 CFR 11 standards

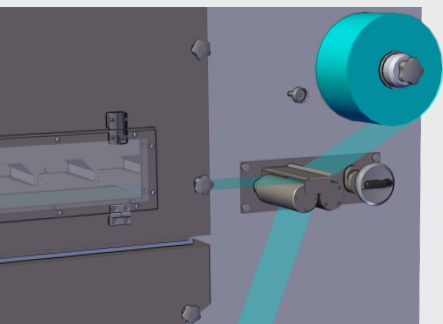
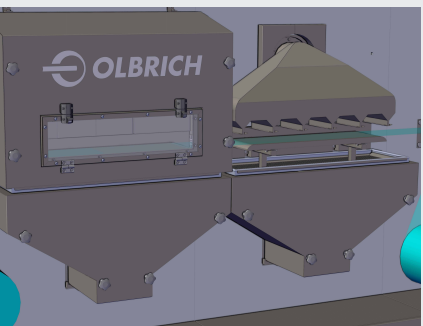
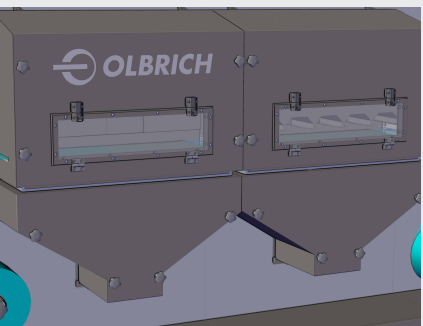
Transdermal patch — TDS/TTS



Oral thin films — OTF/ODF



Courtesy of IntelGenx Corp.

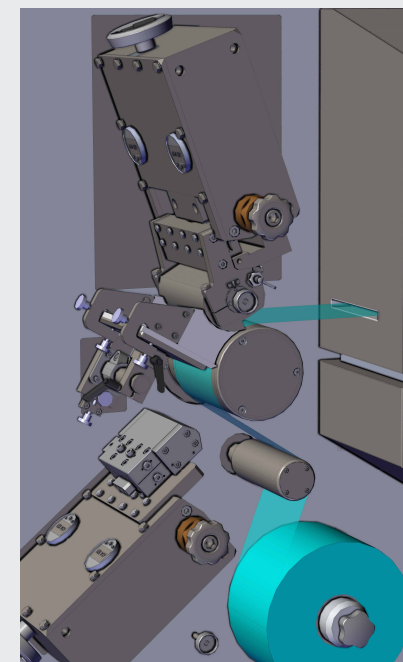


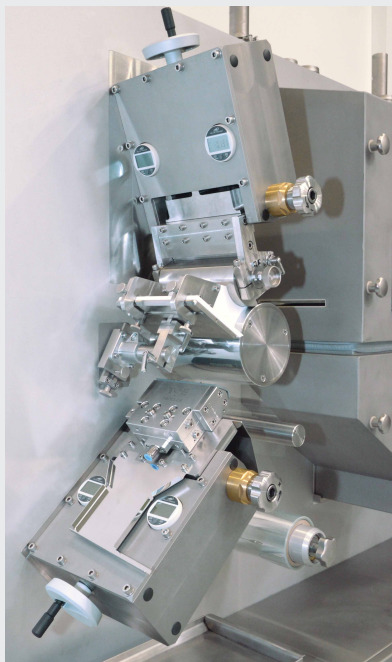
MODULAR GMP COATING MACHINE – “TABLE TOP COATER”

The table top coater offers proven OLBRICH technology in lab scale: the roller face width of 180 mm is perfectly suited for material width of approx. 150 mm. The speed ranges typically from 0,05 – 2,0 m/min. Pharmaceutical Grade Coating Technology for TTS and ODF products and many more.

Coating Substrates:	Paper, PET and other non elastic materials
Coatings:	Water based, Option: Solvent based coatings require system upgrade
Coating methods:	Various systems can be implemented (such as slot die coaters, comma bar coaters, roller coaters, knife-over-roll coaters), typical coating ranges, subject to liquid properties, are: <ul style="list-style-type: none"> - 30 to 500 g/m² wet (comma bar) - 5 to 500 g/m² wet (slot die) - 50 to 500 (1000) g/m² wet (knife over roll)
Drying:	2 Zones (for example): Heating Plate in zone 1 and single pass air with recirculating air in zone 2
Products:	ODF – oral drug delivery TDS – transdermal drug delivery (requires optional lamination unit)

Other products are possible – please ask our coating experts.





The machine mainly consisting of:

- Single-Station Unwinder (3" cores, max. dia. 250 mm)
- Comma Bar Coating System
- Slot Die Coating System
- Dryer (Configurations: Heating Plate System, Single Pass Air Drying, Air Circulation, Idler Rollers)
- Single Station Unwinder (Lamination, 3" cores, max. dia. 250 mm)
- Laminating Station
- Single-Station Rewinder (Product, 3" cores, max. dia. 250 mm)
- Siemens Drive and Control System onboard
- HMI integrated: Siemens KTP700

Parts in contact with the products are made of:

- Stainless steel 316L / Ti
- Chrome plated steel
- Rubber or plastics which are FDA-approved
- Electrochemically treated aluminum

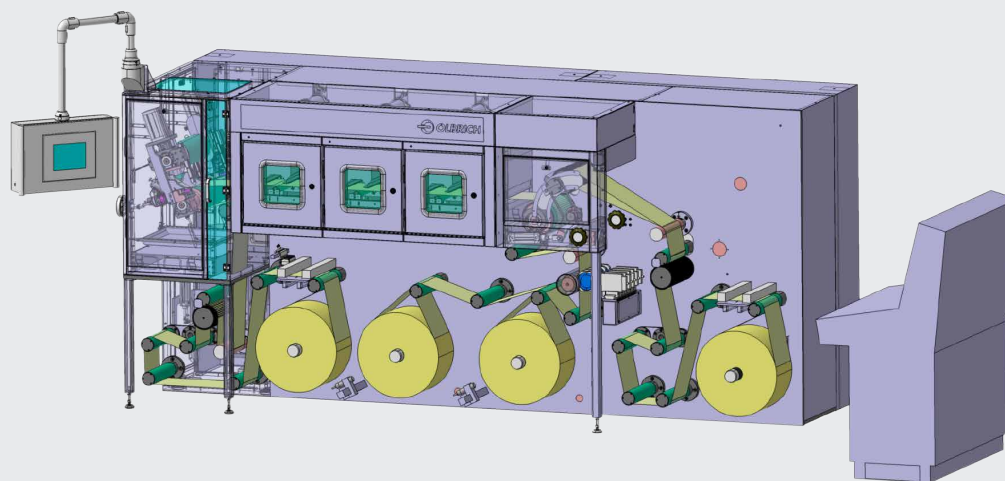


GMP COATING LINE – “MID-SIZE”

OLBRICH's mid-size line successfully closes the gap between small-size table top coaters and large production lines. Pre-validation will be enabled to the benefit of our customers and for accelerated time to the market.

The line is designed according to GMP guidelines, the cleanroom class is “D”. An individual configuration of the line is foreseen and various modules are readily available:

Unwinders and winders for roll weights of up to 60 kg, 500 mm roll diameter, automatic edge guiding. Roll coater with optional EEx performance for solvent based coating media. Further modules include slot-die or comma bar heads. The dryer comes with heating plates and impingement nozzles. A laminating module is designed for protective films or multilayer products. An optional slitter is also foreseen.



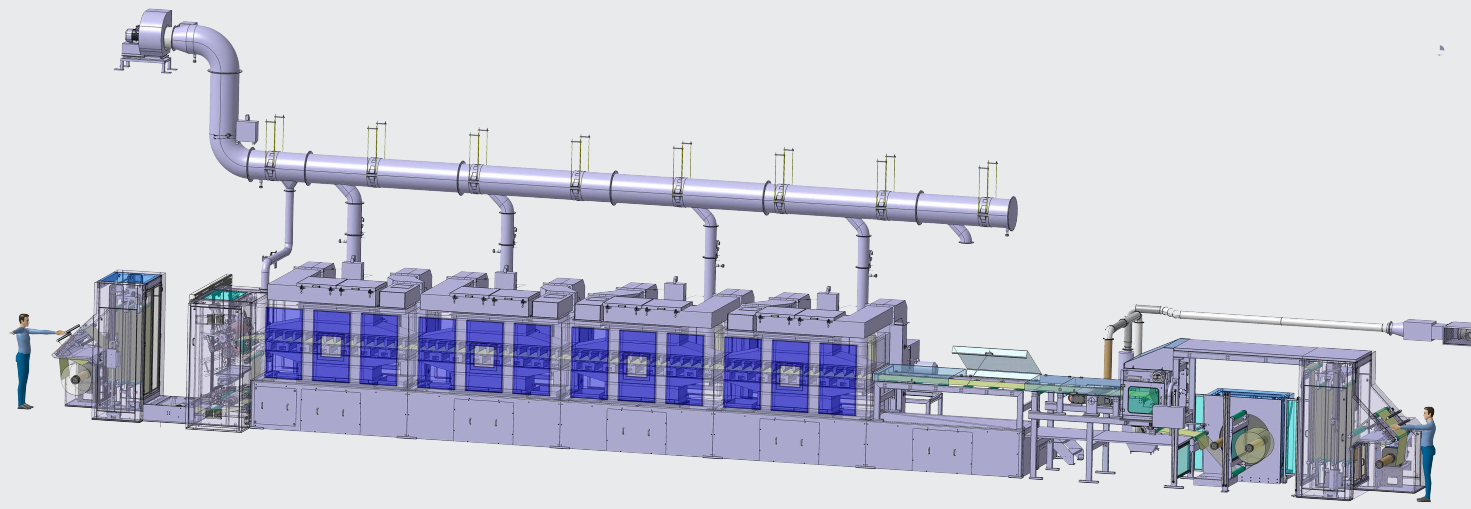
High Technology for Production Lines according to GMP Requirements.

GMP COATING LINES – “PRODUCTION LINES”

OLBRICH lines are in use for a wide variety of products — for medical and healthcare products, but also for OTC and prescription pharmacy.

Many of our lines cover the medium performance segment. Working widths of 400 mm to 1000 mm allow efficient production, but can still be validated and operated reliably. Production time and cleaning cycles are kept in an ideal balance.

At the upper end of our range of products there are production lines with a web width of up to 1700 mm. Here, the focus is on high production output for economy of scale. As a matter of fact, all regulations for a reliable and safe production process apply as well. When it comes to accuracy, operational safety and material selection, these lines meet highest standards.





Sales Partner: