

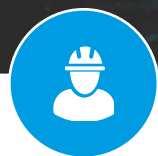


EPC GROUP

WHO WE ARE



>1000
Projects



> 300
Engineers & Specialists

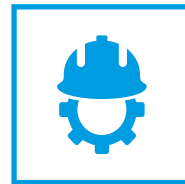


> 140 years
of Experience

- ✓ The branch of EPC Engineering & Technologies GmbH in Leuna was founded in 2000. It emerged from the former research department of Leuna-Werke, from which some of the experienced specialists were taken over and have supported the EPC team ever since.
- ✓ Our experts in Leuna are specialized in the optimization and development of innovative processes in the fields of chemicals, fine chemicals and pharmaceuticals.



TECHNOLOGY LICENSING



ENGINEERING SERVICES



PLANT CONSTRUCTION

IDEAS INSIDE EPC



Specialty Chemistry

Turnkey plant construction for the production of chemicals



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A Member of **EPC** GROUP



- Polymers & Fibers
- Chemistry & Specialty Chemistry
- Renewable Energies
- Biotechnologies
- Engineering Services & Infrastructure
- Pharmaceuticals & Fine Chemistry



- Cryogenic Systems
- Systems for Compression & Liquefaction of Gases
- Small Scale LNG Systems
- Air Separation Systems
- CO₂ Technologies
- Special Applications for Technical Gases



- Construction Engineering
- Infrastructure
- Building & Civil Engineering
- Project Management
- Technical Building Equipment



- Building Automation
- E/I&C Technology
- Electrical Engineering & Telecommunications
- Ventilation & Air-Conditioning Systems
- Heating & Sanitary Systems

A MEMBER OF
EPC GROUP



EPC Group is certified per DIN EN ISO 9001



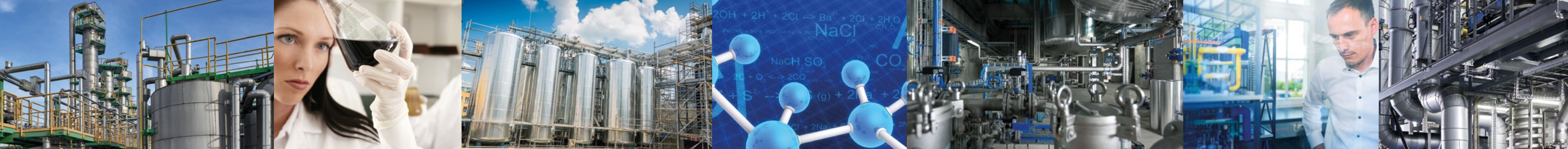
IDEAS INSIDE EPC

We've got Chemistry

Hardly any other topic is more diverse than that of specialty chemicals. The engineering of such projects requires extensive knowledge and experience in simulation, design, layout and safety technology. Each system is unique, tailored to the requirements of the product and to the wishes of the operator.

The engineers at EPC Engineering & Technologies GmbH have the right solution for every requirement. From additives for detergents to basic chemicals for liquid crystals and active pharmaceutical ingredients.

EPC
ENGINEERING & TECHNOLOGIES



Intelligent Solutions for Synthesis Technology

For the highest demands with consistent product quality

The configuration of a synthesis module for organic syntheses of specialty chemicals can be simplified as follows:

- Feeder for solvent
- Dosing system for reaction partners
- Agitator, temperature-controlled, with distillation system
- Utility supply (centralized/de-centralized)
- Vacuum condensation
- Co-reactor for phase separation
- Separation of solids, drying of solids
- Containment systems for hazardous substances

In the case of multi-purpose plants, either reference syntheses are defined or the limits for utilization result from the configuration of the plant.

We plan and implement plants in the parameter range -100 °C to +400 °C (-148°F to 752°F) and up to 100 bar(g), from stainless steel via steel/enamel to Hastelloy, in explosion-proof design (e.g. IIC T4), for hazardous materials, e. g. also with CMR classification, including all necessary safety systems based on scenarios of possible incidents and their prevention.



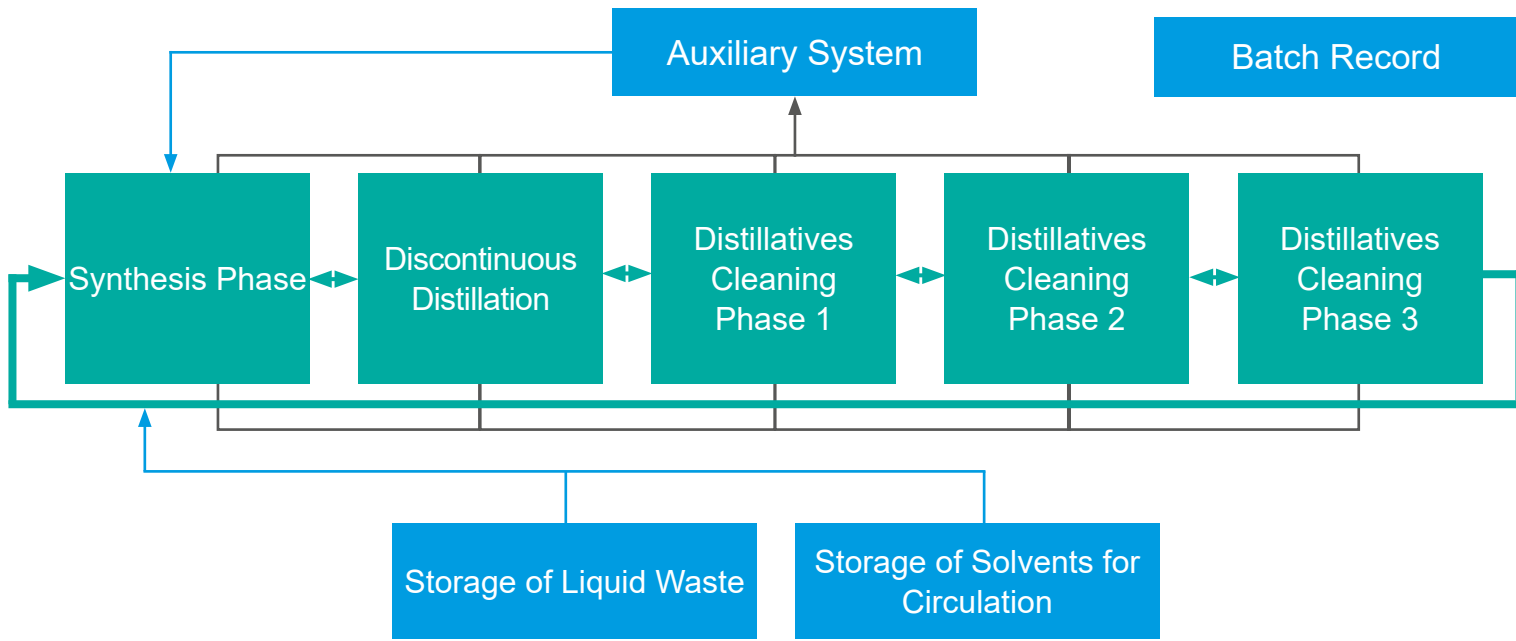
Different process simulations, such as:

- Simulation gas washing
- Simulation solvent stripping
- Thermal behavior in polytropic discontinuous agitator vessels

Multi-product plants

- Process development of complex multi-product plants of special and fine chemistry as well as for mono-product plants with multi-product character
- Multi-product plants and purpose-built plants for the production of active pharmaceutical and agricultural ingredients and intermediates
- Development of market-ready synthesis and processing of polymers
- Multi-product plants with demonstration character
- Synthesis plants with deep and high temperature range

Simplified Visualization of a Plant for Specialty Chemicals



Tailor-Made Solutions

- ✓ Process concept
- ✓ Configuration of the plant structure and layout
- ✓ Simulation of critical process steps
- ✓ Parameterization of the equipment
- ✓ Automation concepts
- ✓ Technical concept for plant safety
- ✓ Knowledge of and experience in the specifics and regulations of the industry
- ✓ GMP-complying and FDA-conform engineering
- Realization of the user requirements
- Performance of risk analysis FMEA
- Qualification plans with acceptance criteria
- Qualification protocols as checkpoint lists
- Qualification reports with evaluation
- Change control management

Process Control Technology / Automation Technology

- Preparation of automation concepts and process description
- Hard- and software planning of the automation system
- Configuration of the process control system
- Start-up assistance
- System maintenance and service

Selected References



Poly-Chem GmbH
Bitterfeld / Germany
2016 - 2017

Twelve multifunctional polymer production lines for up to 200 different raw materials

Redesign of the Plant • Permit Procedures • General Planning and Engineering • Construction Supervision • Commissioning & Start-Up



Novartis Vaccines & Diagnostics GmbH
Marburg / Germany
2009 - 2010

Clean room facilities for the production of vaccines

Construction Management • Heating, Ventilation, Air Conditioning Technology as well as Clean Room • Tendering for Interiors



Grünenthal GmbH
Aachen / Germany
2004 - 2006

Equipment for strong exothermic gas/liquid reactions

Process-Design • Basic Engineering • Authority Engineering • Detail Engineering • Operation Start-Up



Baxter Oncology GmbH
Bielefeld / Germany
2002 - 2003

Optimization of already introduced syntheses of the production area, development of processes for new active ingredients and their precursors

Project Preparation • Detail Engineering • Technical Supervision • Qualification (Planning, Installation, Operation)



YOU WOULD LIKE TO LEARN MORE ABOUT OUR TECHNOLOGIES AND SERVICES?

Contact us! We are looking forward to talking to you.



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