

EKATO R&D

Research and development center

Advanced Process Solutions



EKATO Research & Development

EKATO operates several R&D centers in Germany and the US to develop solutions for new mixing technologies and thus to meet the growing demands for cost-, energy- and raw material efficiency.

Flow simulation, thanks to state-of-the-art methods, impellers can be optimized for process-specific requirements. The interplay of material properties and fluid dynamics in multi-phase systems with parallel chemical and physical processes is often difficult to calculate. Here, the experiment provides the information necessary for interpretation. These can be simple batch tests in the open glass vessel. Particularly in continuous operation, the piloting of a complete system section with all of the components is useful. Finally, R&D also operates closed systems in which chemical reactions can be carried out at pressures up to 100 bar in order to work out the interplay of chemistry and mixing.

R&D test center

- Tank sizes from 5 liter to 100 m³
- Open and pressure vessels made of glass, stainless steel or Hastelloy
- Individual adaption to test requirements

Mixing trials

- Customer products and processes to analyze process steps like reactions, crystallization, emulsification, formulations
- Model fluids to develop fundamentals for blending / homogeneity, mass and heat-transfer, dispersion
- Scale up and design of the production plant

Pilot plants & units

- 5 and 50 liter reactors (up to 100 bar)
- Fully equipped to run batch processes
- Hydrogenations, precipitations, formulations etc.

Analytics for material properties and process results

- Viscosity, rheology
- Particle / droplet size distribution
- Chromatography

Flow simulation (CFD)

- Complementary tool to trials
- Flow patterns, velocities
- Local shear, surface motion
- Concentration / temperature profiles
- Heat transfer

Prerequisites for reliable scale-up to commercial scale plants

- Detailed knowledge of the process and operating conditions
- Extensive testing capabilities
- Comprehensive expertise using applicable scale-up methods



Equipment for safe scale-up



Mixing trials with customer products



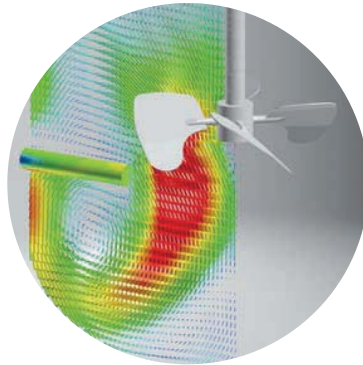
Pilot plants and units



Hydrogenation test center



Rheometry analytics



Flow simulation (CFD)

R&D Center

