

Solids Processing

Precipitation – tailor made particles

Our service ...

Precipitation enables you to shape your product within a broad range to meet your requirements – from well-filterable coarse precipitates to nanoparticles, from isolated primary particles to spherical agglomerates. On the other hand, an incorrectly designed or operated precipitation process can be very costly. Unsuitable downstream and finishing processes can also cause some headaches and additional costs. The specialists of Bayer Technology Services support you in all phases of selection and development of your process – from laboratory scale to commercial production. We ensure that products and processes meet your requirements.

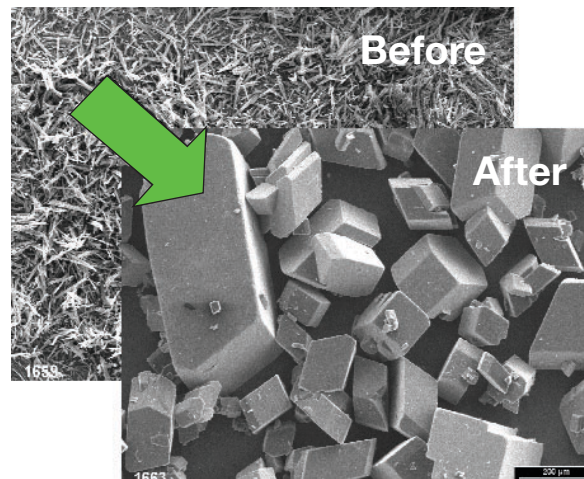
To this end, we perform screening tests with your products and determine important material data. Our production-aligned services comprise:

- process development;
- scale-up;
- optimization;
- design and
- modeling;

for all batch and continuous precipitation processes:

- pH-shift precipitation;
- displacement precipitation;
- reaction precipitation

We develop the optimal process for you and your product or assist you in improving existing processes.

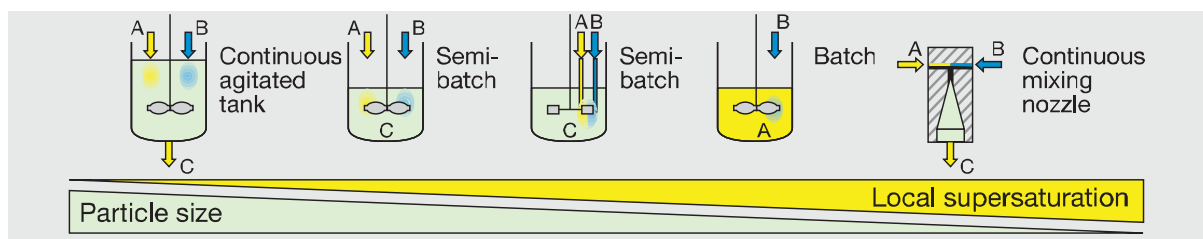


Improved processes for better products—large, well formed crystals of a pharmaceutical compound

... is your gain.

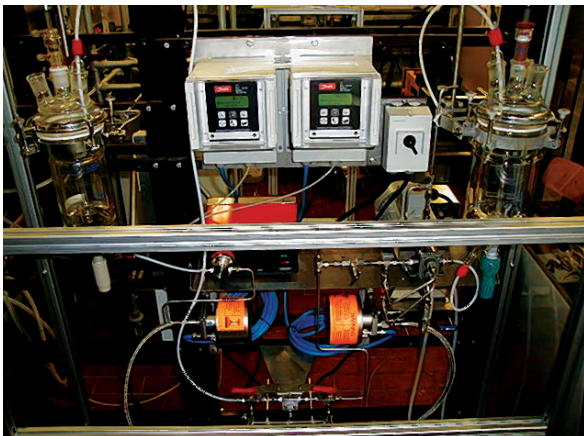
Our years of expertise and interdisciplinary involvement in technical development within the Bayer Group technical development ensure:

- **flexibility**, allowing you to quickly adapt to changes in your market sector;
- **innovation**, helping you to keep your processes up to date through new and continuing developments;
- **objective consultancy**, providing a reliable basis for your process and investment decisions;
- **quality assurance** because your product will be designed to meet your specific requirements.

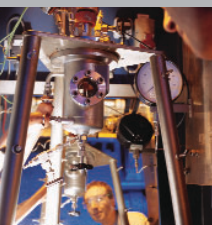


Particle size vs. local supersaturation under various precipitation conditions





Experimental unit for precipitation



Our approach

We support you with our flexible lab equipment over the entire life cycle of the product by:

- determining material data such as solubility, phase diagram, solid density, melting point, melt enthalpy;
- characterizing solids with XRD, DSC, Raman, FT-IR;
- determining the particle size distribution, online and offline, by laser diffraction, Lasentec®, PCS, etc.;
- providing microscopy: light, scanning and transmission electron microscopy;
- working on processes on the laboratory scale (0.1 - 30 L) and on the pilot plant scale;
- designing process-automated plants;
- providing solutions for continuous and batch operations;
- investigating explosive and toxic material systems;
- population balance based modeling with PARSIVAL®.

References

As a development department of an integrated pharmaceutical/chemical group, we can take advantage of comprehensive project experience in a wide range of areas.

Focus: nanoparticles

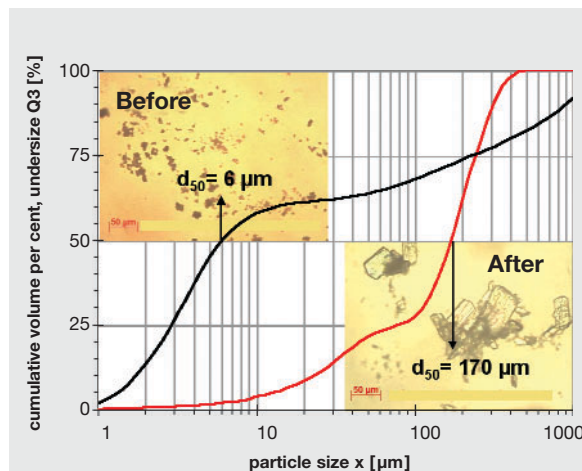
- inorganic pigments
- electrochemicals
- active substance formulations, etc.

Focus: filterability/handling of solids

- active substances for crop protection
- biocides for material protection
- pharmaceutical products
- fine chemicals

Wastewater technology

- precipitation of wastewater containing salts and/or heavy metals



Improved purity and filterability, lower processing costs due to coarser and more uniform particles in an optimized precipitation process

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