

# Drying of Solids

## The optimal drying process

### Minimum Amount of Product – Maximum Process Improvement

Often only small amounts of product are available for process development in the fine chemical and pharmaceutical industries. In such cases, a small apparatus to test the behavior of the product during drying is of great value. The Siemens drying laboratory has developed a unique agitated vacuum contact dryer that is especially suited to the online monitoring and recording of the entire drying process. This proprietary instrument offers the following key advantages:

- Sample size of approx. only 20 g per drying run
- Online-monitoring of the drying process with a resolution of 0.01 g
- Real-time data acquisition of the true torque on the impeller axle during drying
- No sampling required during drying
- Easy determination of the drying end-point
- Prevention of over-drying
- Assessment of optimal drying conditions
- Evaluation of and suggestion for equipment selection
- Preparation of product samples

### Example: Comparison of the torques developed by the drying of known products and a new product in the Siemens Mini Dryer

In an existing plant, a paddle dryer had been designed for drying products A and B. The new product C was expected to behave troublesomely during the drying process. The suitability of the existing dryer for processing product C required investigation. Using the Siemens Mini Dryer the existing drying conditions for products A and B were reproduced with the corresponding torques. Trial runs with tiny quantities of Product C and a minimum of experimental effort successfully demonstrated that the new product C can be dried with the existing equipment.

### Interested? Contact us!

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### Your benefit

- Cost-savings: development of more economical and / or robust processes
- Expertise is independent of equipment vendors
- Only small amounts of product required for tests

### Our service offer

- Characterization and measurement of drying properties
- Investigations leading to scale-up of drying processes and process transfer to other equipment
- Consulting services for equipment selection
- Optimization of existing drying processes w.r.t. robustness, capacity, energy demand, etc.
- Process Design Package
- Engineering Procurement Construction

### Project examples

- Model-based prediction of the duration of drying for a product from the detergent sector and selection of an appropriate dryer
- Capacity increase of a paddle dryer by optimizing its operation
- Layout of the process design of a continuous column dryer for a special product specification
- Manufacture of product samples with a laboratory spray dryer

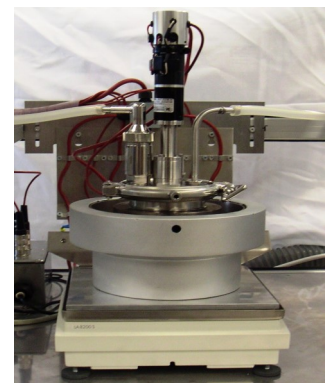


Fig.: Siemens Mini Dryer