



CONSISTENT AND HIGH QUALITY PRECIPITATION THROUGH CONTINUOUS PROCESSING

“Processing precipitations in a continuous and dynamic way improves product consistency and reduces operational risk. Chemical producers achieve first-time-right quality while lowering cost and footprint.”

THE CHALLENGE

Our client struggled with an inconsistent precipitation step that compromised quality, constrained throughput, and reduced downstream efficiency, resulting in higher operational risk and increased production costs.

- **Unstable product quality:** Large-volume batch precipitations led to inconsistent particle formation and made it difficult to guarantee quality.
- **Inefficient downstream processing:** Batch-produced solids require additional processing such as grinding and reprocessing, increasing time, energy consumption, and costs.
- **Limited control over particle properties:** Crystalline particles or other precipitates are formed arbitrarily in batch, whereas often specific particle properties are desired.

THE SOLUTION

Flowid performed the precipitation step and part of the workup with SpinPro dynamic flow reactor technology. Continuous operation enabled:

Reactor volume reduced by a factor of 8,000, improving control over reaction conditions.

Seamless integration within existing infrastructure, enabling hybrid flow-batch operation.

Direct, in-line filtration, enabling solids processing in seconds instead of hours.

The result: Safer, more predictable, and highly tunable solid formation - ready for rapid scaling from pilot to production.



KEY RESULTS

- Production capacity: +250% increase within a smaller footprint
- Energy consumption: >85% reduction due to a first-time-right process
- Particle properties: Highly tunable particle sizes enabling consistent quality
- Reactor volume: 8,000x smaller, improving safety and reducing risk
- Investments / costs: Lower CAPEX and OPEX
- Processing benefits: In-line clog-free filtration enabling continuous solids processing in seconds



STRUCTURED SCALE-UP APPROACH

Flowid applies a phased methodology to introduce flow technology:

1. Chemical & Technical Feasibility: Evaluation of chemistry and equipment fit
2. Proof of Concept: Validation at lab scale with the SpinPro
3. Pilot Skid: Continuous unit
4. Production Skid: SpinPro R3 or R4
5. Commissioning, maintenance and service level agreements

Flowid - Expect more from your chemistry!

If you are considering converting your process to flow or evaluating a retrofit for this step, feel free to reach out to us.