



## SOLID CHAIN



## SERVICES OFFERING

On Axel'One, the solid chain revolves around pilots representative of industrial conditions heavily instrumented by online analysis tools..

Axel'One offers a range of services for the generation, isolation, drying and shaping of solids including:

- Feasibility studies, characterization of the phenomena involved, acquisition of dimensioning data, extrapolation
- Preparation of samples
- Access to a wide range of pilot tools

**Scale: from 50L to 100L**

## EXPERTISE

Since 2020, in partnership with the SOLVAY group, AXEL'ONE has built the AdChem4 (Advanced Chemistry Pilot Plant) platform which allows tests to be carried out at the 50-100L scale on solid generation operations, liquid / solid separation, drying and shaping for organic and mineral media.

The associated expertise is:

- Selection and pre-sizing of solid generation, isolation, drying and shaping technology
- powder shaping
- industrialization of processes

## EQUIPMENTS

### Liquid / solid separation pilots

- Micro-hydrocyclone pilot, 10bar, 4000G (0-2000 L / h)
- Nano and ultra filtration pilot
- ATEX continuous decanter centrifuge (1-10kg / h)
- ATEX batch decanter centrifuge (bold 2L, 5500G)
- 700cm<sup>2</sup> filter press (5 trays)

### Drying pilot

- Conductive dryer (400mL to 30 L): procept, List, microwave assisted planetary mixer (3kW)
- Spinflash type convective dryer (evaporative capacity of 25 kg / h of water, heating 20kW)
- Modular fluidity bed (5 to 15L, 20 to 280 m<sup>3</sup> / h gas, max temperature 150 ° C)

### Grinding station (1-25kg / h)

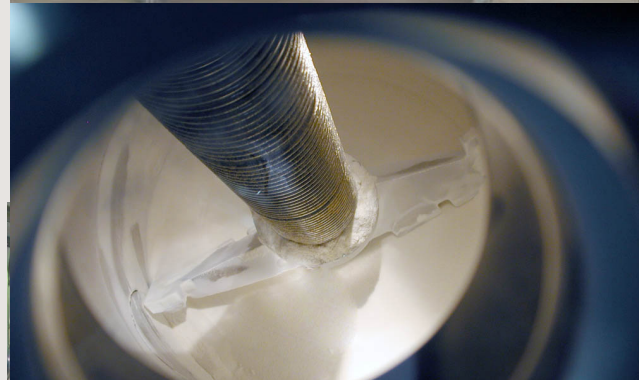
- UPZ100 mechanical crusher with spindles, screens
- AFG100 air jet mill with ceramic nozzles (vulkolan coated)
- ZPS50 mechanical crusher (vulkolan coated)
- ATP50 dynamic selector with ceramic wheel couplable with ZPS or AFG (vulkolan coated)
- Coupled with on-line particle size distribution analysis for self optimization

### Mixers

- 111 / 5000
- Translation results
- Conical screw mixer
- Horizontal Rapid Mixer
- List 3L mixer
- WAM 150L mixer (impregnation possible )

### But also...

- Compacteuse WP120\*40 (20k/h)



CONTACT :  
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## NEW TOOLS AVAILABLE IN 2024

### Preparing area

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- 200L stirred tank, 316L stainless steel, temperature 10-90 ° C, Pressure -1 to 3 barg, nitrogen inerting
- 50 or 100L stirred tank, Glass steel, temperature 10-250 ° C, Pressure 10 to 15 bars
- IBC container zone
- Compatible with organic solvents

### Crystallization / Precipitation Zone

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- 50L reactor + associated systems (agitation and model injection), glass, temperature 10-90 ° C, pressure -1 to 0.2 barg
- Crystallization by evaporation or cooling
- Precipitation by casting on feet or parallel casting

### Drying reception area

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- Convective drying: Air / N<sub>2</sub>, gas temperature 300 ° C max, gas flow rate 400-500 Nm<sup>3</sup> / h
- Conductive drying: vacuum 20mb, gas flushing (Air / N<sub>2</sub>), heat transfer medium (heating) max temperature 180 ° C, P -30kW, (cooling) min temperature 5 ° C, P -20 kW

### Liquid-solid separation reception area

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- Feeding capacity via preparer or crystallizer
- Utilities: vacuum, coolant, nitrogen air (3 bar, 100Nm<sup>3</sup> cubic / h)



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