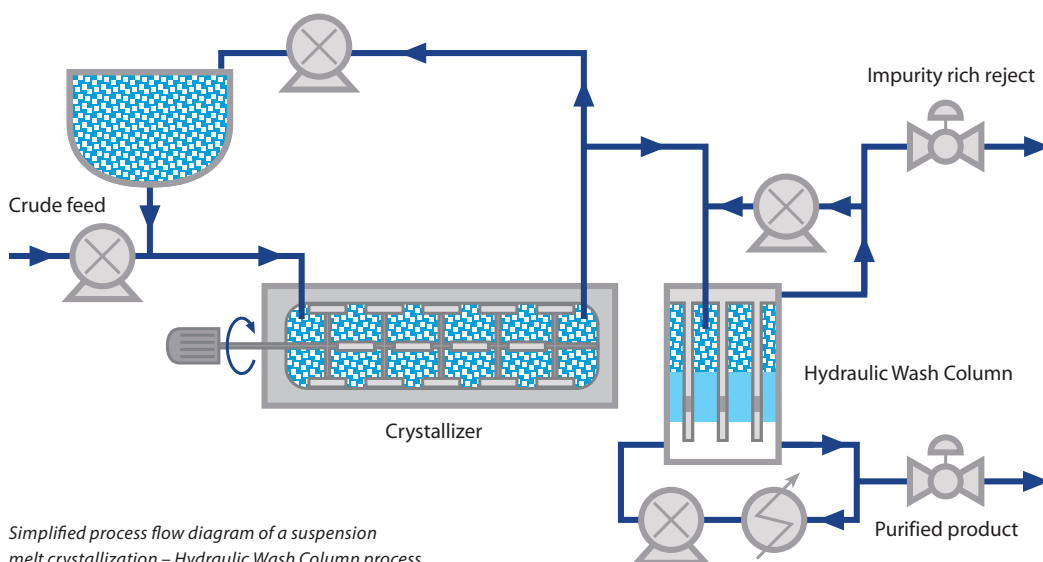




Melt crystallization and Hydraulic Wash Column

A VERSATILE SOLID-LIQUID SEPARATOR FOR HIGH PURITY CHEMICALS AND PHARMACEUTICAL INTERMEDIATES



SoliQz provides support in:

- Lab scale batch crystallization / mini wash column
- Pilot plant trials (at SoliQz or on-site)
- Scale up
- Supply of turn-key industrial scale equipment (in close co-operation with Armstrong-Chemtec)

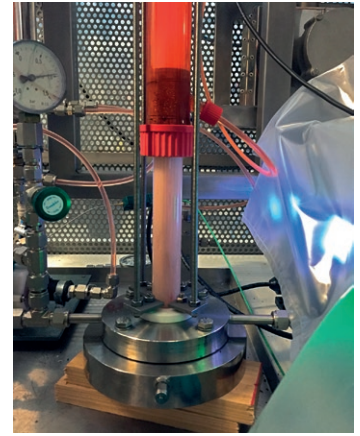


Pilot plant at SoliQz B.V.

Lab scale batch crystallization unit

Characteristics

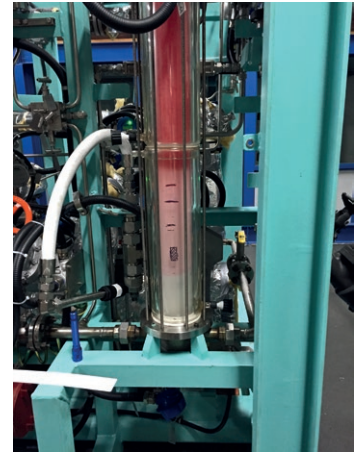
- Determination of solubility curves
- Size and shape of the crystals
- Indication for filtration and purification



Mini HWC lab scale unit

Characteristics

- Quick crystallisation scans
- Pre-feasibility studies for proof of principle for purification
- Simple continuous operation



Ultra purification

Ultra purification using melt crystallisation and the HWC

Characteristics

- Truly continuous solid liquid separation and counter-current washing with the melt
- Purification: typically $\geq 99.9\%$ in 1 step
- Low energy consumption (20% to 90% saving compared to distillation)
- No wash liquid consumption
- Successful demonstration for many organic compounds
- High throughput
- No rotating/moving parts in Hydraulic Wash Column

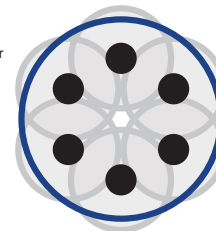
Scale up to industrial scale

Numbering up filter pipes to increase from laboratory to production scale

| Code | Diameter (cm) | Tubes | Capacity (kg/hr) |
|----------|---------------------|-------|------------------|
| HWAC-2 | 2 (in industry) | 0 | 1-10 |
| HWAC-8 | 8 (new pilot plant) | 1 | 5-175 |
| HWAC-15 | 15 | 6 | 50-650 |
| HWAC-30 | 30 (in industry) | 16 | 200-2 500 |
| HWAC-55 | 55 (in industry) | 50 | 1 000-9 000 |
| HWAC-110 | 110 | 110 | 4 000-36 000 |



d column = 8 cm
1 filter tube
capacity = 5-175 kg/hr



d column = 15 cm
6 filter tubes
capacity = 50-650 kg/hr

Design and construction of equipment is carried out in close co-operation with Armstrong-Chemtec



Armstrong Chemtec Group
USA SCOTLAND SINGAPORE



Industrial reference installation with HWAC-30 for purification of phosphoric acid at Solvay



Industrial reference installation with HWAC-55