

PROCESS-SCALE CHROMATOGRAPHY

AgiChrom™ Column

- Closed system design
- Supports multiple agitated bed methods
- Automated slurry transfer, mobile phase handling and cleaning
- Supports elution in packed mode for concentrated fraction
- Low mechanical shear agitation
- Complete documentation for regulatory submissions
- Customizable diameters up to 1m

The ideal purification solution for products with particulates or high viscosities

Agitated bed chromatography systems are ideally suited for applications where the mobile phase flow through the stationary phase creates a high pressure drop. Such conditions are typically associated with applications containing viscous or high particulate products. Agitation ensures homogeneous contact between the ligand and product, for optimal adsorption. In addition, agitation permits full binding capacity of the media.

The VERDOT Ips² AgiChrom process-scale chromatography columns are designed for industrial applications and feature a closed slurry transfer, agitation, packing, unpacking, and cleaning in place (CIP). The columns sanitary design features a low shear impeller with actuator for height positioning, spray balls, valves and instruments for control of process operations.

Multi-use design

The versatility of the AgiChrom column design supports multiple ways of use.

Examples:

- Slurry can be injected either through the slurry ports or through a port on the columns top cover.
- Product can be introduced either through the bottom distributor or through a port on the columns top cover.
- Upon product transfer, elution can be achieved through packed bed mode (to concentrate the fractions) or in agitated mode.
- The mobile phase can be retrieved simply by pressurizing the column with air or by use of an external suction pump.
- The low shear impeller can be positioned in close proximity to the bottom filter or can be positioned at higher positions (i.e. to permit elution in packed bed mode or before re-suspending the bed).
- All the process operations can be automated from an optional control console (FDA CFR21 part 11 compliant).

VERDOT Ips² AgiChrom columns are available in many standard sizes and materials. Columns can be built with tube heights of up to 90 cm or diameters of up to 100 cm. When selecting column sizes, it is important to note that the total volume of the column must contain the volume of product to be purified and the volume of media.

VERDOT Ips² AgiChrom columns are available with glass, stainless steel, or acrylic column tubes (some sizing limitations apply for glass tubes).



VERDOT Ips² AgiChrom column
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Optional accessories

The following options are available for the VERDOT Ips² AgiChrom columns:

- Weight gauges - for automatic level adjustment
- Spray nozzles for cleaning in place
- Bottom extraction system for fast emptying of the settled media without prior reslurrying
- Special system with instrumentation, piping and automation control for the handling of the mobile phase as well as the chromatographic media
- Explosion proof (per ATEX 100A)

As standard, the AgiChrom is provided with switchbox for tilting and agitation lifting and basic control console for the speed control of the agitation. Automated solution can also be provided upon demand.

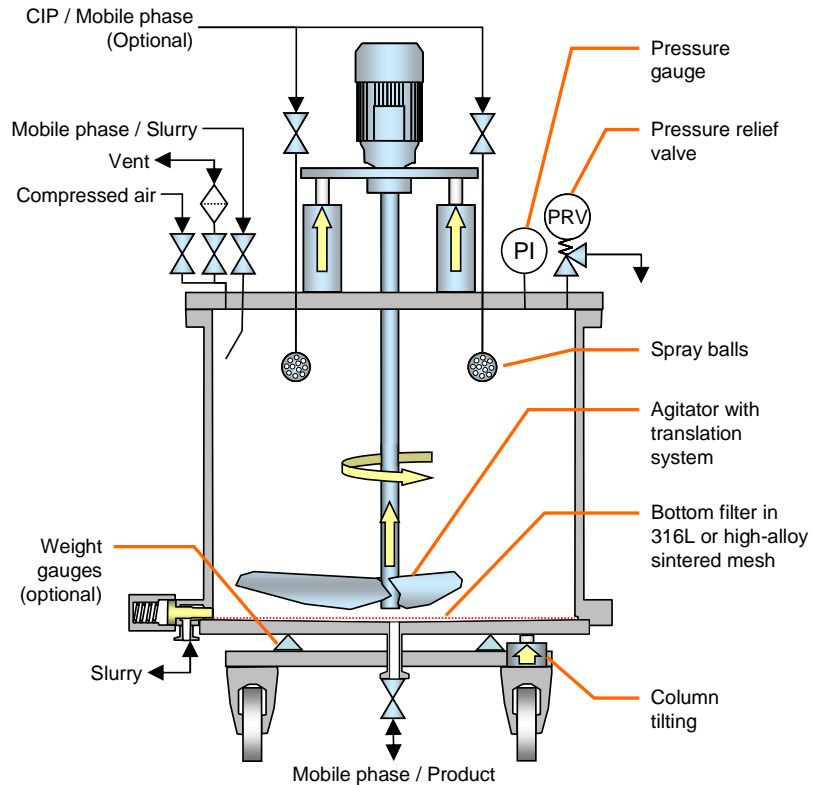
From pilot to large process scale

Evaluating and refining the performance and parameters at pilot scale is always recommended prior to beginning process scale operations.

The VERDOT Ips² PilMod M columns are ideally suited for pilot scale operations and can be configured for packed bed, expanded bed or agitated bed operations.



VERDOT Ips² PilMod M column w/agitation system
(View non contractual)



The VERDOT Ips² Column Lifter & InPlace column with stainless steel tube

SPECIFICATIONS

| | |
|-----------------------------------|--|
| Column range | 5cm -100cm |
| Column height | 60cm-90cm* |
| Max Sce pressure in agitated mode | 1 bar |
| Max Sce pressure in static mode | 1.9 bar* |
| Agitation speed | 20 - 200 RPM |
| Agitation power | ≤ 0.75kW |
| Impeller | Marine (standard) |
| Power supply | Pneumatic : 6 bar Electrical Power: 1 AC 230V 50Hz or 3 AC 208V 60Hz or 3 AC 400V 50Hz |

* taller height and higher pressure rating can be obtained as option