



Lab Test Unit

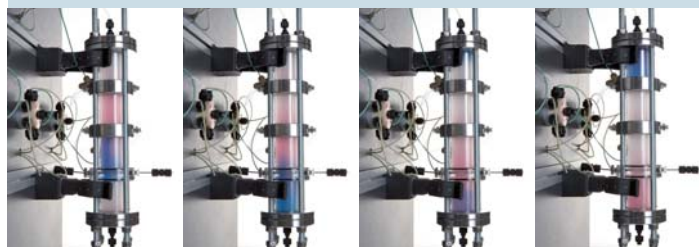


Trial tests and pre-studies are carried out in a **4 zone SMB unit in laboratory scale**. This lab unit offers the advantages of the Vogelbusch single column SMB technology. The patented internal distributors handle separation tasks with highly shrinking and expanding adsorbents. Designed as a mobile test facility it reduces installation work at the client's lab merely to the connection to feed and product vessels. The unit is controlled with an enhanced GE HealthCare Äkta® system. Its small size makes it particularly suitable for separation tasks in the field of small volume and high value substances (purification of protein etc.).

Technical data

Adsorbent volume:	105 ml 105 cc
Inner column diameter:	23.7 mm 0.93 in
Adsorbent size:	50 – 550 µm
MOC:	stainless steel, plastics (PEEK, acrylic glass)
Inline-online analysis:	multi-spectral photometer, conductivity meter, pH meter
Typical feed flow:	0.2 – 2.0 ml per minute

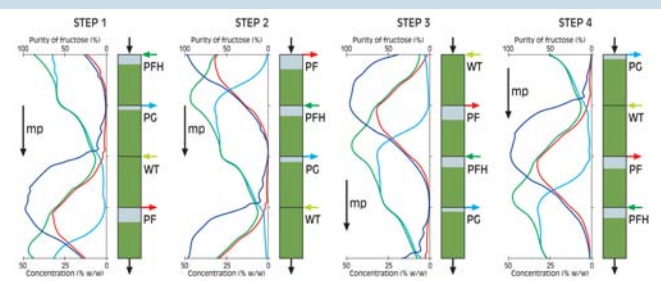
Single column system with internal distributors



Single column SMB chromatography is based on a continuous countercurrent principle using a simulated moving bed system. The moving bed is simulated by regular movement of the positions of the inlet and outlet streams over the height of the column. The system consists of one end-to-end chromatography column, filled with adsorbent, and embedded distributors. The bottom is connected to the head of the column by means of a circulation pipe. The incoming fluids each pass over distributors while the outgoing fluids are drawn off via the two other distributors. Input to and output from the column are simultaneous, without disturbing the hydraulic balance in the chromatography column.

Advanced separation technique

The construction with only one compartment and internal distributors allows to keep the total filling height of the



adsorbent constant. Problems known from multi compartment units especially in combination with shrinking / expanding adsorbents are resolved: the head space is minimized, the pressure drop is lower and the packing is easy and uniform. Additionally there are no moving parts, the piping is less complex and the plant footprint is reduced.

Outstanding yield and product quality

The key benefits of the Vogelbusch method are the complete exploitation of system performance combined with the long service life of the adsorption resin and a superior separation efficiency. The reduced investment and operating costs maximise the operating profitability.

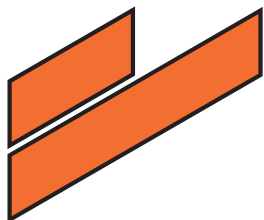
Applications

This advanced chromatography process is most suitable for separation and purification needs in the **food, chemical and pharmaceutical industry**. It can be applied either with proprietary technology of Vogelbusch or based on the client's know-how.

Vogelbusch expertise and services

We support you every step of the way and can carry out feasibility studies | trial tests | scale-up | process design and engineering services | turnkey installations for stand-alone or integrated units

Contact us to discuss your specific separation needs:
vienna@vogelbusch.com or call +43 1 54661-0



VOGELBUSCH

Pilot plant



Development of new processes and scale-up is carried out in a **8 zone SMB pilot system**. Here we can develop new applications with our clients and carry out tests to form the sound basis for scale-up to industrial plant size. The number of zones can be varied between 4 and 8. The plant is installed with industrial equipment and employs a state-of-the-art industrial control system. Typical applications are for large volume products like the separation of glucose/fructose | molasses desugarization | purification of organic acids | any separation causing high osmotic pressure to the adsorbent.

Technical data

Adsorbent volume: 95 liters | 25 gal (US)

Inner column diameter: 110 mm | 4.3 in

Adsorbent size: 200 – 400 µm

MOC: stainless steel, industrial design

Inline-online analysis: density meter, refractometer, polarimeter

Typical feed flow: 130 kg DMS per day (e.g. HFS)

The Bioprocess Company

Vogelbusch has been operating internationally in the biotechnology plant engineering sector since 1921. Our services include technology, engineering and contracting of process plants. Target markets are the biotechnology industry, including pharmaceuticals, chemistry and foodstuffs. The Austrian company is a global operator, heading subsidiaries in Houston, Texas, and in Hong Kong.

we make biotechnology work

Pre-engineering of process plants

- > feasibility studies
- > conceptual design

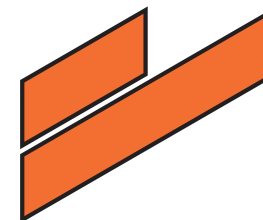
Design package

- > technology & process design
- > supply of key equipment
- > commissioning support & operator training

Turnkey supply of complete process units

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Single Column SMB Chromatography

