
RHOBUST FASTLINE[®] ADSORBENT:

The New Generation of Adsorbents
for High Performance Processing

Expanded Bed Technology
by Upfront Chromatography

**Solid Phase Adsorbents for
Expanded Bed Adsorption**

RHOBUST FASTLINE[®] ADSORBENT PRODUCT INFORMATION

The choice of adsorbent is the key to success

The choice of adsorbent for an EBA process has significant influence on the basic feasibility of the process for a given task and the overall performance of the process.

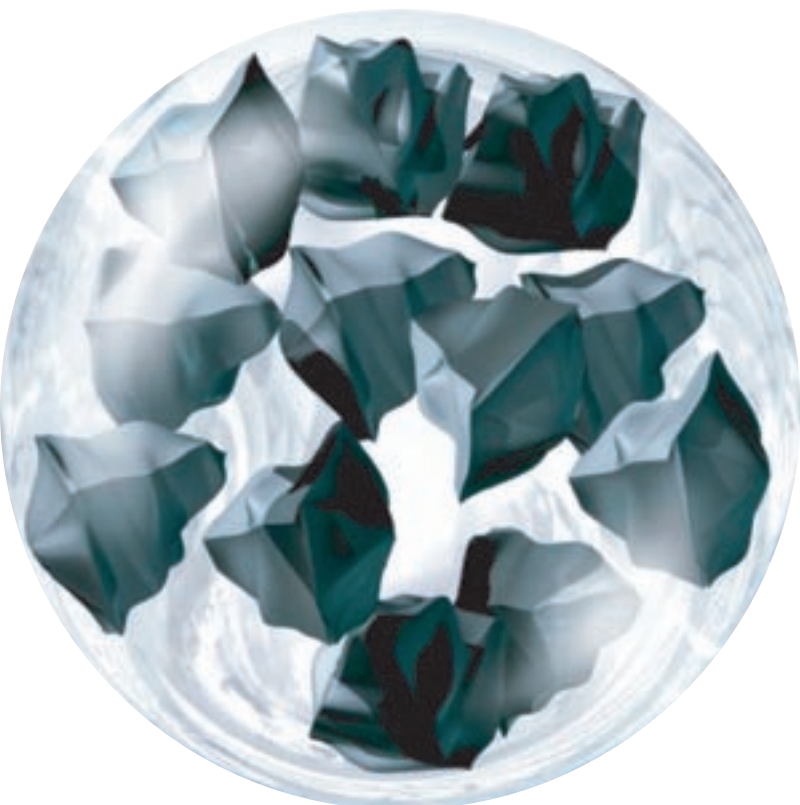
The design of EBA adsorbent is decisive with respect to all important process parameters:

Density and diameter are essential bead design parameters.

The new Generation – All-in-one bead design

The new generation of EBA adsorbents from UpFront is based on several years of intensive focus on the development of a solid phase having “the best of everything” build into the basic design and composition of the beads.

Process flow rate	high density	➔	high flow rate
Productivity	high flow rate	➔	high productivity
Mass Transfer Kinetics	small particle diameter	➔	fast equilibration
Process robustness	high density adsorbents	➔	more stable beds
Degree of expansion	low expansion	➔	low washing and elution volumes
Product yield	fast process	➔	minimal degradation
Product purity	inert solid phase	➔	minimal non-specific binding
Bead stability	bead composition	➔	minimal degradation



High density

The new adsorbent combines the well-known popular characteristics of crosslinked agarose with an ultra high-density phase of tungsten carbide. Tungsten carbide has a density of 15.5 g/ml, and a tungsten carbide content of 10-15% (vol.) results in an adsorbent bead density of 2.5– 3.5 g/ml. This is significantly higher than prior adsorbents employed for EBA. The remaining 85-90% agarose (vol.) derivatised with a suitable ligand ensures an efficient binding performance. The composition of the tungsten carbide-agarose is illustrated in Figure 1.

Small diameter size distribution

At the same time UpFront has managed to bring down the particle size range of the beads in order to maximise the surface area and thus improve the mass transfer kinetics. The new generation of EBA beads from UpFront has a particle size range of 20 - 200 micrometer.

Fig. 1:

The inert tungsten carbide phase is incorporated in the agarose bead resulting in a high density solid phase suitable for EBA.