Liqui-Cel : high efficiency membrane phase contactors / Intersep Filtration Systems.

Contributors

Intersep Filtration Systems.

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Liqui-Cel®

High Efficiency
Membrane Phase Contactors

INTERSEP
FILTRATION SYSTEMS

Liqui-Cel® High Efficiency Membrane Phase Contactors

Liqui-Cel® phase contact modules offer a highly efficient method for liquid / liquid extraction or gassing / degassing at laboratory and process level. The novel design of the Extra-Flow® modules for process scale offers many advantages over other phase contact methods including improved efficiency, economy and space-saving.

Principle

Liquid / liquid extraction or gas / liquid exchange are processes whereby mass-transfer occurs between the two liquid or gas / liquid phases. Conventional methods involve dispersion of one phase into the other as droplets or bubbles, increasing interfacial contact. The dispersed phases are then separated by their different densities, e.g. by centrifugation (cutting). However difficulties may be encountered because of the formation of emulsions, foaming and problems met in separating phases of similar density. Liqui-Cel® Extra-Flow® modules offer a radically new approach using hollow fibre modules in a cross flow design. Each unit comprises a wound hollow fibre fabric arranged in a unique spiral configuration. One phase is passed through the lumen of the hollow fibres, and the other is passed counter-current through the unit shell. A unique fluid path design ensures maximum phase contact and a high mass-transfer efficiency. The pores in the highly hydrophobic membrane provide an immobilised liquid-liquid or gas/ liquid interface where transfer of solute occurs.

Applications

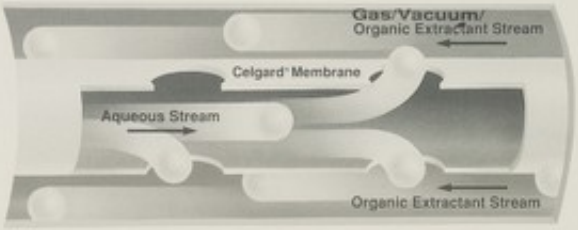
- Isolation of fermentation and other products eg antibiotics, proteins. polysaccharides, steroids.
- Recovery of valuable / hazardous reagents.
- Purification of flavours and other nutritional products eg enzymes, proteins, essences.
- Waste stream aeration.
- Waste stream cleaning; degassing or pertraction of undesirable compounds such as dissolved benzene.
- Solvent degassing; chromatography buffer degassing.
- Process / ultrapure water degassing.
- Degassing boiler feed water.
- Culture media oxygenation.
- Carbonation of liquids.

Features

- Unique modular format means that **no emulsion is formed** and **no secondary phase separation is required**. Solvents with similar densities can be used.
- Modular design allows **simple and predictable scale up.** Availability of laboratory module with integral housing for pilot studies.
- **No extra energy requirement.**
- **Very long life.**
- **Space efficient**, because of very large surface area (>3500m^2 per m^3).
- Unique baffle design of the Extra-Flow® module **optimises fluid flow**, **eliminating solvent flooding** and waste, and **maximising mass transfer efficiency.**
- **Highly hydrophobic Celgard® membrane** ensures **compartmentalisation of liquid phases** and offers **excellent chemical resistance.**

Performance

In an ultrapure water production process for pharmaceutical production, a feed of 25m^3/h H_2O is fed through 10x PCM 107 modules in parallel. The original O_2 level of 10ppm is reduced to 1.5 ppm in a single N_2 sweep.



Specifications

Product Code	31804570	31804570	32804518
		Liqui-Cel Extra-Flow	
Housing Required	Integral	33704570	33704518
Suitability	Laboratory	Process	Process
Cartridge Size	1" x 8"	4" x 13"	4" x 28"
Housing Connection Type	1/4" NPT	Sanitary 1"	Sanitary1"
Max. Housing Length	12"	19"	34"
Effective Area	0.23m^2	7.7m^2	19.3m^2
Effective Area per unit volume	40 cm^2/ cm^3	32 cm^2/ cm^3	36 cm^2/ cm^3
Potting Resin	Epoxy		
Mesh / Tube Material	Polypropylene		
Membrane Material	Hydrophobic Polypropylene **Celgard®**		
Effective Pore Size / Porosity	0.05µm / 30%		
Fibre Inner Diameter	240 µm		
Max. Pressure Differential	4.2 bar		
Operating Temperature Range	10 - 60°C		

Ordering Information

Product Code	Description
30804504	1" x 12" Cartridge
31804570	4" x 13" Cartridge
32804518	4" x 28" Cartridge
36704500	Liqui-Cel™ Laboratory LLE System. Fully integrated system for evaluating Liqui-Cel™ membrane based phase contact technology.
37704500	Liqui-Cel™ Breakthrough Pressure Test System Complete system for investigating optimum pressure configuration for specific application

Distributed by:

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