HOW TO CHOOSE YOUR HOUSING FILTER ?

ULTRA PURITY (UPW) DIALYSE & API.



What filtration equipment should you choose when the solvent used in the production of your APIs is incompatible with stainless steel?

COMPOSITE HOUSING FILTER EPOXY PRESSURE VESSEL RO

PFA COMPOSITES **COMPOSITES SOLUTIONS**

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THE FILTRATION OF SOLVENTS, WATER OR OTHER UTILITIES UPSTREAM OF THE API (ACTIVE PHARMACEUTICAL INGREDIENTS) PRODUCTION CHAIN IS A KEY PHASE IN YOUR INDUSTRIAL PROCESS.

Which filtration materials should be chosen when the solvent or its service conditions are incompatible with stainless steel? What solutions are available to you?

A => Deposition of a **polymer coating** on a steel, chemically inert (PTFE, FEP, PFA and Halar©...). However, in spite of an excellent corrosion resistance, ECTFE is subject, like all fluoropolymer coatings, to the **permeation phenomenon**. The molecules that adsorb on its surface - here the solvent molecules - migrate through the coated wall, causing the coating to eventually peel off, exposing the manufacturer to significant quality risks.

B => Manufacture of filter housings made of polymer materials: Within the limits of relatively low filtration flow rates (of the order of m3/h) and relatively non-aggressive solvents, the best solution is to use filter housings made of solid PTFE. It should be noted, however, that the use of this synthetic material is limited to operating temperature and pressure conditions such as PN < to 6 bar.g and T <= to 40 °C-according to ASME-EN 13-121).



SPECIAL OPERATING CONDITIONS

When the dimensioning criteria of the filter body exceed those previously mentioned because subject to : -**Permeation** or osmosis.

-**Volume** or requiring the integration of narrow or cramped environments (multi-pocket filters for the retention of carbon fines, retention of catalysts etc.),

-Particularly **corrosive environment** (solvent, ultrapure water phosphoric acid, alkaline solution),

-Severe operating conditions -PN>6bars, T°> 40°C

- requiring a certain electrical or thermal conductivity,
- -EC type food certification N°1935/2004.

We are specialized in the manufacturing of thermoplastic, thermo-bonded and composite boiler-made equipment (MTP, MTP dual laminate and GRV) & composite pressure vessel for RO filtration.

PFA Composites designs and produces columns, process tanks, washers, quenches, thermoplastic, thermo-bonded or composite centrifuges and reactors to treat, transform, store and transport solid, liquid or gaseous solutions which are highly corrosive and demanding (Ultra Purity, High Temperature, Food Compliance). Our technologies, materials and know-how enable us to offer filtration, ultra-purity, or API professionals a wide range of filter/pressure housings for reverse osmosis filtration, process vessels, reactors, fermenters



GOOD TO KNOW Maintenance / Service

A coated steel filter body is difficult to repair in situ, due to the rilsanization process which consists in depositing the thermoplastic polymer in the workshop (demountability/access to damaged areas, stoppage of operation...).

Whereas a filter body equipped with a fluorinated synthetic thermoplastic liner will be repairable on site with a shorter downtime.

Average fluid distribution in filter housings manufactured by PFA COMPOSITES.

HOW TO CHOOSE YOUR FILTER ? ULTRA-PURITY, DIALYSE & API





HOUSING FILTER

Fluid : Chlorhydric Acid. Temperature : 40°C. Operating pressure : 10 barg. Frame : EN-13-121. Raw material : PVC

PRESSURE VESSEL

Fluid : phosphoric acid Temperature : atmos. Operating pressure : 80 barg. Frame : EN-13-121. Raw material : epoxy fiber glass





FOOD COMPATIBLE PRESSURE VESSEL

Fluid : drinking water Temperature : atmos. Operating pressure : 120 barg. Frame : EN-13-121. Raw material : epoxy fiber glass **CE n°1935/2004.**

HOW TO CHOOSE YOUR FILTER ? ULTRA-PURITY, DIALYSE & API





HOUSING FILTER

Fluid : solvent Temperature : 90°C. Operating pressure : 1 barg. Frame : EN-13-121. Raw material : ECTFE.

HOUSING FILTER

Fluid : saumure Temperature : 60°C. Operating pressure : 6 barg. Frame : EN-13-121. Raw material : PPH





HOUSING FILTER

Fluid : salt water Temperature : 30°C. Operating pressure : 10 barg. Frame : EN-13-121. Raw material : PVC





FILTER

Fluid : solvent Temperature : 50°C. Operating pressure : 5 barg. Frame : EN-13-121. Raw material : GRV

FILTER

Fluid : bleech Temperature : 30°C. Operating pressure : 10 barg. Frame : EN-13-121. Raw material : PVC





FILTER

Fluid : sea water Temperature : 55°C. Operating pressure : 10 barg. Frame : EN-13-121. Raw material : GRV

HOW TO CHOOSE YOUR FILTER ? ULTRA-PURITY, DIALYSE & API





HOUSING

Fluid : API Temperature : 50°C. Operating pressure : 70 barg. Frame : EN-13-121. Raw material : epoxy & fiber glass

HOUSING

Fluid : sea water Temperature : 50°C. Operating pressure : 70 barg. Frame : EN-13-121. Raw material : epoxy & fiber glass





HOUSING

Fluid : Dialyse Temperature : 50°C. Operating pressure : 160 barg. Frame : EN-13-121. Raw material : epoxy & fiber glass

OUR PORTFOLIO











CONTACT FOR SALES

Franck BOUTET 16 rue Robert Schuman, F-85170 Dompierre-Sur-Yon France

f.boutet@pfacomposites.com Tel : +33 (0)2 51 08 86 50 Portable : +33 (0)6 80 66 42 95 https://www.pfacomposites.com