Permeating media: pump and valve linings made of PFA-P fluoroplastic

- significantly longer service life than with standard PFA
- universally corrosion-resistant
- up to 200 °C (400 °F)

Richter
Process Pumps & Valves
PFA-P highly permeation-resistant

Application
Linings made of fluoroplastics are used in many applications because they are of highest corrosion-resistance and, at the same time, offer very good value for money.

However, many fluids are often extremely permeating as well.

PFA-P is the ideal material, when the aim is to control severe corrosion and high permeation at the same time without having to dispense with the benefits of a fluoroplastic lining.

In a 2-year test phase in Richter pumps and valves PFA-P has proven its suitability for highly permeating fluids and manifold the service life of the test units.

Examples:
- \( \text{H}_2\text{SO}_4 \cdot \text{HF}, \ 135 \, ^\circ\text{C} \)
- \( \text{TFA} \ (\text{C}_2\text{HF}_3\text{O}_2), \ 50 \, ^\circ\text{C} \)
- \( \text{FHC} \cdot \text{H}_2\text{SO}_4 \cdot \text{HF}, \ 180-200 \, ^\circ\text{C} \)
- \( \text{MCA} \ (\text{CH}_2\text{ClCOOH}), \ 150 \, ^\circ\text{C} \)

PFA-P is chemically inert. The conductivity corresponds to that of pure PFA. In case of abrasive media it is necessary to consult Richter. The ingredients to PFA-P are FDA conform, but the compound is not FDA approved.

Corrosion-resistance equal to the resistance of pure PFA and PTFE. We are offering our support in trials with extremely critical fluids.

Operating range
Same as with linings made of PFA and PTFE:
- up to 180 °C (360 °F) resp. 200 °C (400 °F) and
- 16 bar (235 psi) resp. 19 bar (275 psi), depending on the series and design.

Availability
All series and components which we offer with a PFA lining:
- Magnetic drive pumps MNK
- Mechanically sealed pumps SCK
- Ball valves KN, KNA, KNR, KNAR, KA
- Diaphragm valves MV, MVA, MVM
- Sight glasses PSG, TSG, check valves CV, SR, BC
- Globe control valves RSS, sampling valves PA
- Low pressure safety valves LPV-D
- Strainers GS, GSO

Short definition of the term "Permeation"
Permeation is the term used for the transport of substances through solid materials at molecular level.

The process is divided into three phases:
Gases, vapours or liquids are absorbed on the surface e.g. of the plastic component (‘adsorption’). The absorbate diffuses in and through the plastic (‘diffusion’) and escapes on the other side (‘desorption’). Thus diffusion is one phase with the permeation process.

More detailed informations on permeation/diffusion and on the test and practice experience on request.

Relative comparison of the permeability of fluoroplastics

Presented by: