

WHY CHOOSE PFA AND NOT PTFE?

TO MEET THE HIGH QUALITY STANDARDS OF THE PHARMACEUTICAL INDUSTRY, WE OFFER HIGH QUALITY PRODUCTS THAT HAVE BEEN SUBJECTED TO RIGOROUS COMPLIANCE TESTING



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Flexible tubing made of PFA

At Aseptconn, a supplier of components and products for sterile fluid transfer technology, we put our many years of experience in the pharmaceutical industry at your service. For this reason, we offer you a wide range of high quality PFA hoses. Our hoses made of PFA (perfluoroalkoxy) have many advantages compared to PTFE hoses.

What is PFA?

PFA (perfluoroalkoxy) belongs to the group of perfluoropolymers, which are materials with very high technical performance. The main feature of perfluoropolymers is their chemical composition: their molecules are very stable and can withstand high thermal and chemical stresses. It is considered an almost universally applicable material.

The structure of PFA

PFA is derived from PTFE, whose molecular structure has been modified. This makes the polymer more flexible and resistant to mechanical stress. In addition, this polymer has the typical properties of a elastomer, which is why it can be processed by extrusion. The extrusion process makes the PFA extremely compact and mirror-smooth, which ensures a high degree of purity.

The main characteristics of PFA

Surface with low coefficient of friction



Guarantees easy flow of transported liquids and prevents adhesion of foreign substances

Resistant to environmental factors and corrosion



Oxidation resistant, therefore the resistance to acids and oxidizing agents is excellent

Chemical resistance



Does not dissolve on contact with the most common solvents and is resistant to chemical corrosion

Thermal resistance



Resistant to high and low temperatures (from -30°C to +260°C)

long durability



Even with aggressive chemicals, aging resistance is excellent

Biological resistance



Resistant to attack by microorganisms

PFA compared with PTFE

Specifications	PFA	PTFE
Advantages	+++	+
Permeability	PFA liners are made by extrusion of a liquid homogeneous mass. Therefore, a waterproof product with excellent molecular compactness is obtained, which reduces the risk of contamination.	PTFE liners are produced from powder by sintering, producing a discontinuous product. This leads to micropores and a permeable product.
Thermal resistance	High thermal stability, which prevents the hose from collapsing due to material expansion/deformation at high temperatures. Excellent thermal resistance at high temperatures. PFA retains its mechanical strength properties almost unchanged.	Above 100°C, PTFE undergoes severe permanent deformation with a shape memory that can weaken the wall thicknesses that are under mechanical stress. It can also lead to the formation of microcracks.
Flexibility	It is very flexible and can be extruded into a 0.4 mm thick tube to provide flexibility, a small bending radius and low force when bending the hose.	To expand the PTFE coating (at the opening or end), a thicker coating is required. This makes the hose stiffer.
Adhesion	Very strong adhesion of the liner to the rubber hose, even at high temperatures (150°C).	Low adhesion of the liner to the rubber hoses and higher storageload. This increases the risk of problems such as: complete implosion of the liner.
Purity	PFA hoses eliminate the risk of contamination of the transported products, as they are processed by extrusion. This avoids the addition of plasticizers or solvents.	PTFE hoses are created by sintering and extrusion. Tube is achieved by adding solvents, which must then be removed by other processes.