



1 - 800 micron

HiFlux Filter bags are manufactured specifically with regard to filtration of liquids, which means that requirements as to choice of materials, strength and fibre structure and treatment are quite specific.

When using bag filtration, the correct choice of bag is vital for the outcome. The filter material type, the quality of the material, structure, manufacturing, including factory tailoring and stitching of the bag, are significant elements in achieving a successful and a continuously good filtration outcome.

A wide range of different materials are currently used for filterbags. The most significant are Viscose, Nylon, Polyamide, Polypropylene, Polyester and Teflon.

VISCOSE has a good durability with solvents, but it is sensitive to acids and bases. Polyamide (PA) has good chemical resistance, but is sensitive to many acids, stronger bases and oxidation agents. POLYPROPYLENE (PP) is extremely resistant to chemicals and is tolerant to acids and bases, but is sensitive to aromatic hydrocarbons and strong oxidation agents. Its use is limited to temperatures below 90-100 °C. POLYESTER (PE) is one of the most usable materials with good chemical and temperature resistance. The material is sensitive to hydrolysis, however. TEFLON (PTFE) has excellent chemical and temperature resistance. However, the material has limited resistance to dissolved alkali metals and hydrocarbons containing fluor.

There are two main types of filterbags

1. Needle felt consists of pressed fibres, which gives a three-dimensional structure with high porosity. This results in depth filtration in which the large particles are retained on the surface and the small particles are collected deep inside the fibre structure. The filtration efficiency cannot be determined in absolute values, but is expressed nominally, which means that the efficiency for a given degree of filtration for HiFlux Filterbags will be approximately 70 -80%. This is why a small amount of large particles will pass through the filter. If higher efficiency is required, a lower degree of filtration should therefore be selected. Needle felt bags can be washed and reused to some extent.
2. Monofilament, or a woven design, results in surface filtration in which the particles settle on the woven surface of the material. The threads in the weave are tied to each other, which ensures a fixed degree of filtration and minimum fibre migration. Monofilament bags can usually be washed and reused.

Filtration of gas/air and liquids with needle felt cannot be compared directly. In the case of filtration of liquids, the particles are suspended in a liquid which works as a carrying medium, and the flow rate through the weave is low compared to gas/air filtration. The particles will therefore have a far greater tendency to be carried with the flow and find their way through the filter medium. This factor is absolutely cardinal when determining the degree of filtration of the filter material.





When choosing the material quality, the air percentage (Void Volume) is a significant factor for the ability of the filter medium to retain large amounts of dirt. The free volume increases with decreasing thread or fibre thickness in the fibre medium and provides an increased number of pores in the material which can collect and retain dirt particles. At the same degree of filtration a filter element with a high air percentage will, all other things being equal, be far better with a longer life and lower differential starting pressure as a result.

With a geometrically correct design and careful manufacturing, it is possible to obtain the greatest possible strength in the filterbags and avoid perforation of the filter material when stitching the bag. Perforation from stitching causes seepage between the dirty side and the clean side of the bag with lower retention as a result.

Materials	T _{max.}	Filtration in micron										
	°C	1	5	10	25	50	100	150	200	300	600	800
Polyamide	120			x		x						
Nylon Monofilament	120					x	x	x	x	x	x	x
Polypropylene	100	x	x	x	x	x	x					
Viscose	110		x	x	x	x	x					
Polyester	135		x	x	x	x	x					
Teflon	250		x	x	x	x						

The chemical resistance and compatibility of the materials with the liquid to be filtered are very important in terms of obtaining a good result and a reasonable life for the bag. As processes and filtration tasks are often unique, the supplier of the bags should be included in making the correct choice, so that the combination chosen is definitely the most suitable.

Data	Mikro ¹⁾	TP ²⁾	0	X0	1	2	3
Length	430	650	220	360	390	780	1170
Diameter	80	110	110	110	180	180	180
Filter area cm²	1050	2130	650	900	2050	4250	6300
Max. diff. pressure, bar³⁾	1	1	1	1	1	1	1

1. Bags for HiFlux filters of the Micro-line 1050 type.
2. Bags for HiFlux filters of the TP type
3. Max. differential pressure depends on the support strainer.

TP bags are equipped with a top ring of acid-proof steel. The Micro bags with an EPDM gasket. Other bags are as standard equipped with a top ring of acid-proof steel.

HiFlux Filter Bags are made in such a way that they fit filter housings from most leading manufacturers. Filter bags of other sizes and materials can be made in co-operation with our textile engineer.