

# Filtration cartridges manufacturing



# EN ISO 9001:2018

**ALC "Chernivtsi Khimzavod"** (Quality Management System EN ISO 9001: 2018) produces unique products - cylindrical filtration cartridges (TS U 28.2-00204665-110:2012).



## Filtration cartridges are used for:

- fine filtration of various fluids from mechanical impurities,
- they can be also viscous liquids at high temperature processes up to 125°C,
- as well as air;
- for organization of filtration with fully reproducible results of high-quality cleaning.

# APPLICATION AREA



- **LPM** - varnishes, enamels, paints, resins, emulsions, primers;



- **products of petrochemical production** - solvents, mineral oils, fuel and lubricants;



- **water** - technical and sewage;



- **gases** - air and gaseous mixtures with pressure up to 10 atm;
- **other technical solutions.**



# TYPE AND MODELS

Filtration cartridges of ALC 'Chernivtsi Khimzavod' are widely used in industry, they can be divided into the following groups depending on:

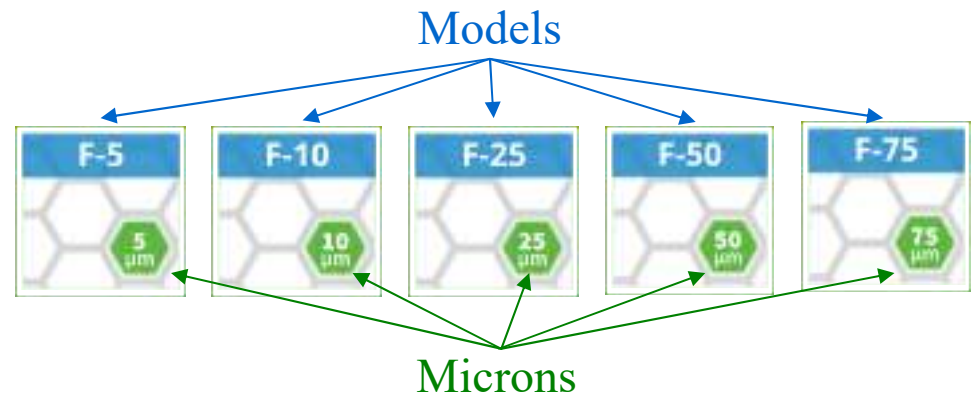
- external surface configuration:

Type U – ungrooved; Type G -grooved



Type U – ungrooved    Type G -grooved

- nominal selectivity (*the size of particles that are collected by filtration cartridges, microns*):  
models F-5, F-10, F-25, F-50 and F-75.



# Technical characteristics

Technical characteristics of filtration cartridges					
Pores micron size, $\mu\text{m}$	Model	Type	Size, mm	Tenacity, $\kappa\text{Pa}$	Capacity
3	F-3	U - ungrooved, G -grooved,	length - $248\pm 2$ ; $254\pm 2$ inner diameter - $27,4\pm 1$ external diameter – $64,5\pm 1$	588-686	up to 25,0 $\text{m}^3/\text{h}$
5	F-5				
10	F-10				
25	F-25				
50	F-50				
75	F-75				

**Filtration cartridges** produced by ALC "Chernivtsi Khimzavod" are strong cartridges made of acrylic, cotton and cellulose fibers, bonded with strong chemically resistant thermopolymerizing resins.

# The cascade principle



Filtration cartridges produced by ALC "Chernivtsi Khimzavod" can be included in the filtration system of any technological process. To have the most efficient filtration, the cascade principle with a gradual decrease of pores micron size is applied. For example: F-75, F-25 and F-5. Under these conditions, the maximum performance is achieved.

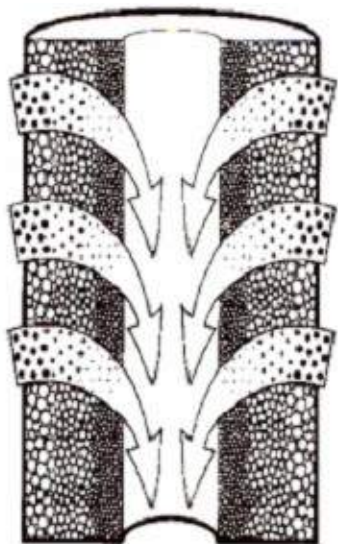
In contrast to filtration cartridges of other manufacturers, the specific features of the filtration cartridges produced by ALC "Chernivtsi Khimzavod" are strict accuracy to the pore size of the fibrous structure with a gradual decrease of the pore diameter towards the axis of the filtration cartridge.

As a result, it is possible to collect particles of contamination throughout the filter volume (*the larger parts are collected by the surface and the external layers, and smaller ones are collected by the inner layers of the filtration cartridge*).

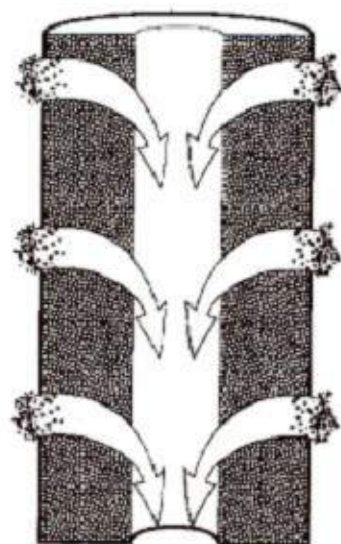


# DIFFERENCE

In the picture there is a section on the length of the filtration cartridge which can help you to compare the filtration process performed by the filtration cartridge produced by ALC "Chernivtsi Khimzavod" (on the left) and by the filtration cartridge of other manufacturers (on the right).



Filtration cartridges produced by ALC "Chernivtsi Khimzavod"



Filtration cartridges of other manufacturers

According to the picture it is clear that in the case of using filtration cartridges produced by ALC "Chernivtsi Khimzavod", while the liquid is passing through the cartridge, the contaminants are distributed relevantly to its size throughout the space, while in the case of other filtration cartridges, "only the outer layers work".

In the contrast to other manufacturers' filtration cartridges, the filtration cartridges produced by ALC "Chernivtsi Khimzavod" have the exact match of the cartridge model and its stamping (F-5 - 5 microns, F-10 - 10 microns, F-25 - 25 microns, F-50 - 50  $\mu$  m, F-75 - 75  $\mu$  m) as the precise pore size kept.

# Grooved filtration cartridges



Grooved filtration cartridges are used to increase the filtration area and the flow capacity. The area of the filtration cartridge is increased due to the grooved surface (type R).

- It prevents premature clogging of pores of the external surface and allows to use fully the deep layers of the filtration cartridge.
- It also maintains a high efficiency of liquids purification from mechanical impurities,
- increases the time interval between replacements of filtration cartridges due to the large dirt-holding capacity of the latter,
- and also does not increase the area occupied by the filtration unit.



# FEATURES AND ADVANTAGES

1. The stable reproducibility of the technical characteristics throughout the length and depth of the filtration cartridge provides a strict structure and a stable performance of the filtration cartridge in the operating mode. In the contrast to products of our business rivals the filtration cartridge of ALC "Chernivtsi Khimzavod" do not lose or reduce the quality of the filtration during its use.
2. High productivity, dirt-holding capacity, long-term service life of the filtration cartridge.
3. High thermal stability - up to 125°C.
4. High chemical resistance to a wide range of chemical reagents.
5. Firmness - Filtration cartridges should be replaced when the difference in pressure (*differential pressure*) reaches up to 10 atm.
6. Ability to collect helio-like contaminants.
7. Excellent sorting ability required for filtration of pigmented paints. Only the contaminants of a certain size are collected, and particles of smaller size pass into the filtrate.

# CONTROL

ALC "Chernivtsi Khimzavod" pays special attention to all stages of the production process, strict control over compliance with technology and absence of defect are maintained.

The filtration cartridges samples of each manufactured batch of finished products are stored in a special card file.

Filtration cartridges have passed the expert evaluation at the DP Scientific Center for Preventive Toxicology, Food and Chemical Safety named after Academician LI Medved of the Ministry of Health of Ukraine (*sanitary-hygienic certificate No. 12.2-18-1/25593*).



The graphic features the text "Price // Quality" in a bold, orange, sans-serif font. A black arrow points downwards from the letter 'i' in "Price", and another black arrow points upwards from the letter 'l' in "Quality". The text and arrows are centered within a white rectangular box that is set against a blue background.

In conclusion, we would like to note that when planning the cost of your production, keep in mind that the notions *"the cost of the filtration cartridge"* and *"the cost of the process of filtration"* are not the same. This can be verified only by comparing the results achieved by applying different filtration cartridges under the same conditions.

As for the ratio *"price / filtration efficiency"*, the filtration cartridges of ALC "Chernivtsi Khimzavod" are significantly ahead among other fine filtration cartridges.