

VAN BORSELEN FILTERS



SWISS QUALITY.  
SINCE 1938.



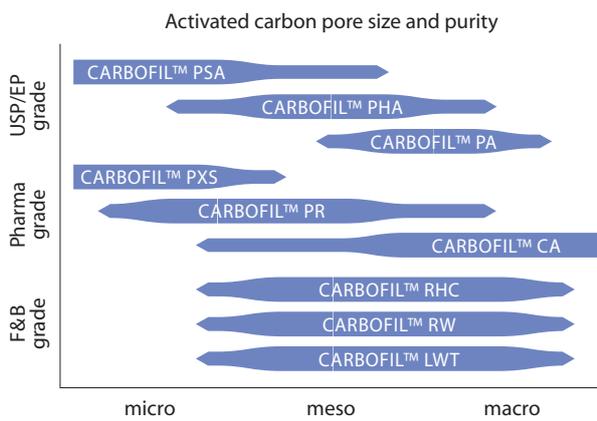
CARBOFIL™ depth filter media  
with immobilized activated carbon

DEPTH FILTRATION FOR VALUABLE LIQUIDS.

# Introduction

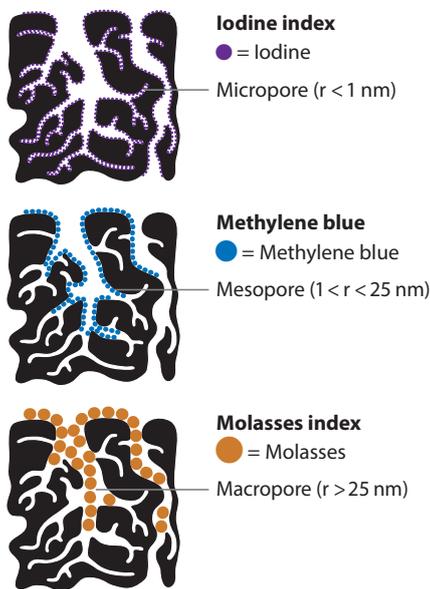
Powdered activated carbons (PAC) play a critical role in a vast and diverse range of applications. Decolorization, deodorization or the removal of other trace impurities are amongst the most common applications where PAC are widely used in the pharmaceutical as well as in the food & beverage industries. Due to their unique adsorption characteristics, PAC are also used in biotechnological processing and the production of fine chemicals. In order to meet these various demands, there are a large number of activated car-

bons available, offering different levels of activation, molecular structure and purity levels. Using activated carbon in an immobilized form (e.g. in a depth filter sheet or lenticular module) offers significant benefits in handling, cleaning and time (cost savings), compared to using PAC. FILTROX CARBOFIL™ products bring out all the benefits of immobilized activated carbon versus PAC. Furthermore, the adsorption efficiency of immobilized activated carbon is higher than with an equivalent amount of bulk PAC.



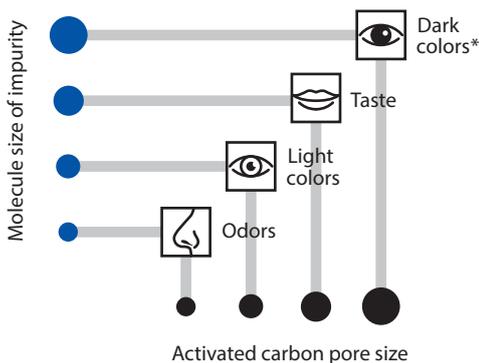
## Pore size distribution

Activated carbon is a highly porous adsorptive material. Organic contaminants get trapped within the pores. Pore sizes vary between micropores, mesopores and macropores with various pore size distribution patterns amongst different activated carbons, depending on the activation method and the material source involved.



## Activated carbon characterization

Pore size distribution of a certain activated carbon is responsible for its specific adsorption pattern which is characterized by iodine number, methylene blue adsorption and molasses number.



## Activated carbon selection

Based on these characteristics, it can be determined which types of molecules are adsorbed by a certain activated carbon. The size of the molecules adsorbed is directly related to the pore size distribution of the activated carbon.

\* Dark colors, proteins and foaming agents

# Applications

## Various industries – diverse applications

CARBOFIL™ products can be used as flat sheets in a plate and frame filter such as in the NOVOX® series, or they may be applied as FILTRODISC™ lenticular modules in closed housings such as the DISCSTAR™ series.

	Decolorization	Removal of organic impurities
Biopharmaceutical industry	<ul style="list-style-type: none"> <li>– Albumin</li> <li>– Vitamins</li> <li>– Antibiotics</li> <li>– Vaccines</li> </ul>	<ul style="list-style-type: none"> <li>– Removal of PKA from human plasma fractions</li> <li>– Removal of endotoxins</li> <li>– Removal of organic impurities from contrast liquids</li> </ul>
Chemical industry	<ul style="list-style-type: none"> <li>– API</li> <li>– Silicon oils</li> <li>– Solvents</li> <li>– Fine chemicals</li> </ul>	<ul style="list-style-type: none"> <li>– Catalyst recovery</li> <li>– Heavy metal reduction</li> <li>– Removal of organic impurities</li> <li>– Decolorization</li> </ul>
	<ul style="list-style-type: none"> <li>– Plant /herbal extracts</li> <li>– Fragrances</li> </ul>	<ul style="list-style-type: none"> <li>– Deodorization of ethanol</li> <li>– Removal of pesticides from extracts</li> </ul>
Food & beverage industry	<ul style="list-style-type: none"> <li>– Sugar syrup</li> <li>– Spirits</li> <li>– Cider</li> </ul>	<ul style="list-style-type: none"> <li>– Removal of off-tastes from spirits</li> <li>– Removal of bitterness from soups</li> <li>– Decolorization</li> </ul>

## Convenient media grade selection

CARBOFIL™ products are available with various different grades. To assist in finding the most suitable CARBOFIL™ grade for any application, FILTROX offers the easy-to-use

CARBOFIL™ Test Kit. For further information about the CARBOFIL™ Test Kit contact your local FILTROX representative or the FILTROX Academy ([applications@filtrox.com](mailto:applications@filtrox.com)).



## FILTROX Group

The FILTROX Group is your reliable partner offering solutions for all applications within the field of microfiltration of liquids where we are experts due to our long-term expe-

riences. With several production facilities worldwide, we offer highest flexibility as well as custom-made products for your special needs.



## FILTROX. DEPTH FILTRATION FOR VALUABLE LIQUIDS.

As a global market leader in depth filtration, FILTROX offers complete solutions for filtration of high value liquids.

We are experts in development, manufacturing and supply of Swiss top quality products for a wide range of applications in pharmaceuticals, biotechnology, chemicals and cosmetics as well as in food and beverage. Since 1938, we have been developing and manufacturing both filter

media as well as filtration equipment in-house. Based on this experience, we can offer our customers a complete range of products.

FILTROX's worldwide distribution network and comprehensive technical support will help you optimize your filtration process.

Visit us online at [www.filtrox.com](http://www.filtrox.com) for more information.

### FILTROX AG

Moosmühlestr. 6  
CH-9001 St. Gallen / Switzerland  
Phone: ++41 071 272 91 11  
Fax: ++41 071 272 91 00  
E-mail: [sales@filtrox.ch](mailto:sales@filtrox.ch)

FILTROX Southern Europe  
Ramón Viñas, 4  
08930 Sant Adrià de Besòs / Spain  
Phone: ++34 934 626 700  
Fax: ++34 933 810 258  
E-mail: [filtrox.Espana@filtrox.com](mailto:filtrox.Espana@filtrox.com)

FILTROX UK & Northern Europe  
Butts Mill  
Barnoldswick  
Lancashire  
BB18 SHP / United Kingdom  
Phone: ++44 1282 811000  
Fax: ++44 1282 811001  
E-mail: [filtrox.UK@filtrox.com](mailto:filtrox.UK@filtrox.com)

FILTROX France s.a.r.l.  
1 Rue du Claire Matin  
F 21200 Beaune / France  
Phone: ++33/380 222 915  
Fax: ++33/380 241 856  
E-mail: [contact@filtroxfrance.com](mailto:contact@filtroxfrance.com)

FILTROX North America  
9805 NE 116th Street  
PMB A-200  
Kirkland WA 98034 / USA  
Phone: Toll free 800 473 4526  
Phone: ++1 425 820 4850  
Fax: ++1 425 820 2816  
E-mail: [info@filtercorp.com](mailto:info@filtercorp.com)

FILTROX MICROFILTRACIONES SA DE CV  
Circuito Circunvalación Poniente 4B  
Cd. Satélite  
53100 Naucalpan de Juárez  
Estado de México / Mexico  
Phone: ++52 55 2628 1691  
E-mail: [info@filtrox.com.mx](mailto:info@filtrox.com.mx)

FILTROX (Shanghai) Filtration System Co., Ltd.  
7 # Building no. 1855  
TianChen Rd. QingPu  
Shanghai 201712 / P.R. China  
Phone: ++86 021 5922 7508  
Fax: ++86 021 5922 7511  
E-mail: [info@filtroxchina.cn](mailto:info@filtroxchina.cn)

FILTROX Asia-Pacific Pte Ltd  
25 International Business Park  
#02-14 German Center  
Singapore 609916 / Singapore  
Phone: ++65 933 88645  
E-mail: [sales\\_apac@filtrox.com](mailto:sales_apac@filtrox.com)

### VAN BORSELEN FILTERS BV

Argonstraat 66  
2718 SN Zoetermeer  
Po box 3  
2700 AA Zoetermeer

Telefoon +31 (0)79 3412314  
Telefax +31 (0)79 3412892  
Email: [info@vanborselen.nl](mailto:info@vanborselen.nl)  
Web: [www.vanborselen.nl](http://www.vanborselen.nl)

