ENG

VITRAFIL®

Hi Tech Glass Filter Media

Anti-Compaction Technology®

HAYWARD®

ES026775-CPI
BUREAU VERITAS
Certification

ifts

Biofilm Absence
ACCREDITED

INDEX

European sales organisation

HAYWARD® is present throughout the European territory with a strong **commercial and technical team of 50** dedicated people.

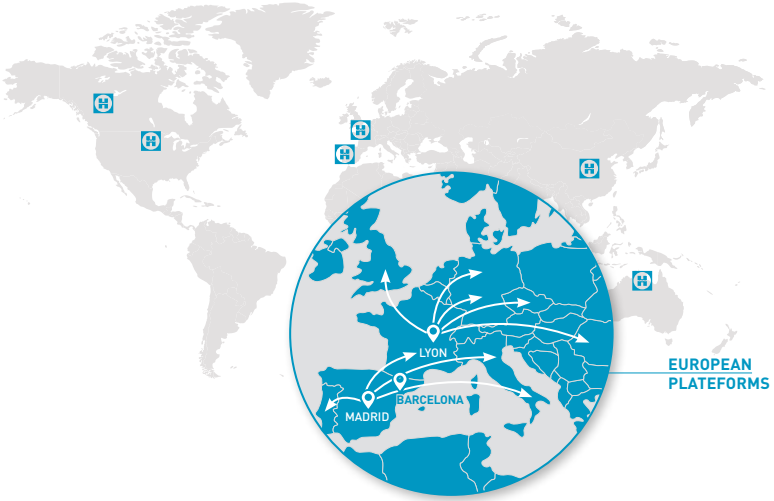
JOIN US AND
FOLLOW US ON OUR
SOCIAL NETWORK

To contact our Customer Sales service:
00 33 (0)4 74 46 59 62 - 00 34 925 533 025
eu-customerservices@hayward.com
Opening hours: 8.30 a.m. – 05.30 p.m.

To contact our After-Sales service:
00 33 (0)4 74 46 59 62
sav@hayward.fr
Opening hours:
April to September: 8 a.m. - 6 p.m.
October to March: 9 a.m. - 12 p.m. / 1 p.m. - 5 p.m.

Hayward®, leading supplier of pool equipment

A worldwide presence



$ 810 MILLIONS
TURNOVER WORLDWIDE

$ 100 MILLIONS
TURNOVER EUROPE

1 000
SKUS IN EUROPE

10
FACTORIES

2 300
EMPLOYEES WORLDWIDE

MORE THAN **5 MILLION*** POOLS FITTED WITH HAYWARD® PRODUCTS

*2020 Hayward® in Europe

What is **VITRAFIL®**?

It is a **latest generation filter media** based on virgin recycled glass, designed exclusively for water filtration.

Just by changing your current filter media for VITRAFIL® you will maximize every standard filter's performance.

What **advantages** does it achieve?

You will find noticeable advantages in:

- **PERFORMANCE**
- **EFFICIENCY**
- **HYGIENE AND BIOSECURITY**
- **DURABILITY**
- **SAFETY**

Performance

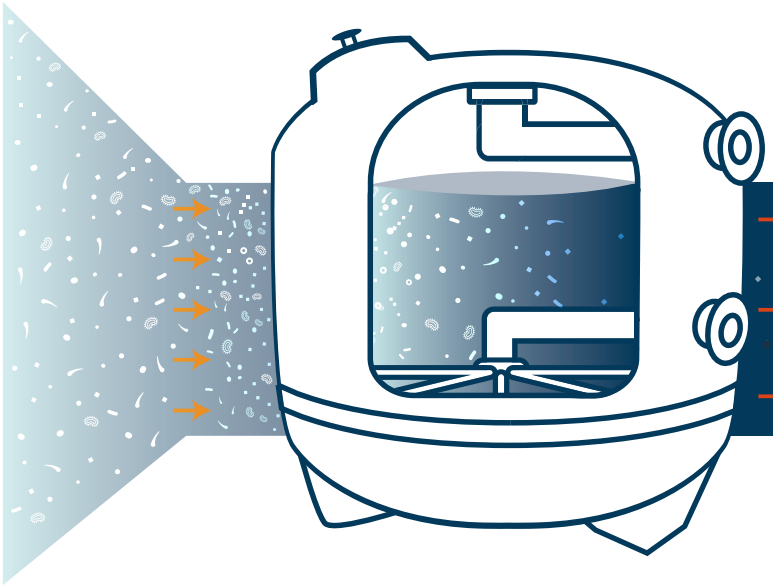
Maximum Filtration Performance

The efficiency of VITRAFIL® is based on the elimination of the most common particles you can find in a swimming pool that make the water go misty. This simultaneously maximizes savings and efficiency. **We achieve this thanks to a highly selected grain curve and to a surface treatment technology of the grains,** which allows us to avoid Biofilm, keep the microchannels open and make the particles totally safe to handle.

The utility of a filter media is determined by a compromise between micron rate and clogging capacity.

Typical particles in an outdoor pool in order of expected mass

Particle Type	Size (µm.)	Mass (%)
Thick dust	100-200	85%
Thin dust	10-25	10%
Human hair	70-100	2,5%
Thick pollen	60-80	2,0%
Thin pollen	15-30	0,2%
Skin Cell	10-30	0,15%
Regular floc.	60-80	0,10%
Algae	10-200	0,10%
Bacteria	0,5-200	0,003%



ifts
Institut de la Filtration et des Techniques Séparatives

99,64%
FILTRATION PERFORMANCE
IFTS TESTED

COMPARATIVE RESULTS	
Product 1	99,25%
Product 2	96,91%

According to standard NF P 90319 § 4 - with derogations -
Get more information in our website/Downloads/IFTS
Tests organized before a Notary

Efficiency

Tests conducted by:

Energy Saving

The **Anti-Compaction Hi-Tech®** has been designed to keep the micro channels that form in the filtering mass open, so pressure loss is negligible. Thanks to this, the pump works more smoothly and therefore reduces its consumption:

VITRAFIL®

IFTS test RA_2020_00006470 Point 4.3.
Filtration term: Pressure Drop
Technical term: Differential pressure filtering media (hPa.)
Calculation: INPUT - OUTLET Pressure

d Pressure: -45 hPa

Product 1

IFTS test RA_2020_00006469 Point 4.3.
Filtration term: Pressure Drop
Technical term: Differential pressure filtering media (hPa.)
Calculation: INPUT - OUTLET Pressure

d Pressure: -110 hPa

145% More compared to VITRAFIL®

Product 2

IFTS test RA_2020_00007015 Point 4.3.
Filtration term: Pressure Drop
Technical term: Differential pressure filtering media (hPa.)
Calculation: INPUT - OUTLET Pressure

d Pressure: -93 hPa

107% More compared to VITRAFIL®

Water Saving

At the same time as we save energy, due to keeping the micro channels open, we also manage to save water as we reduce backwashing needs:

VITRAFIL®

backwashing needs*

1 monthly

Product 1

backwashing needs*

4 monthly

300% More compared to VITRAFIL®

Product 2

backwashing needs*

4 monthly

300% More compared to VITRAFIL®

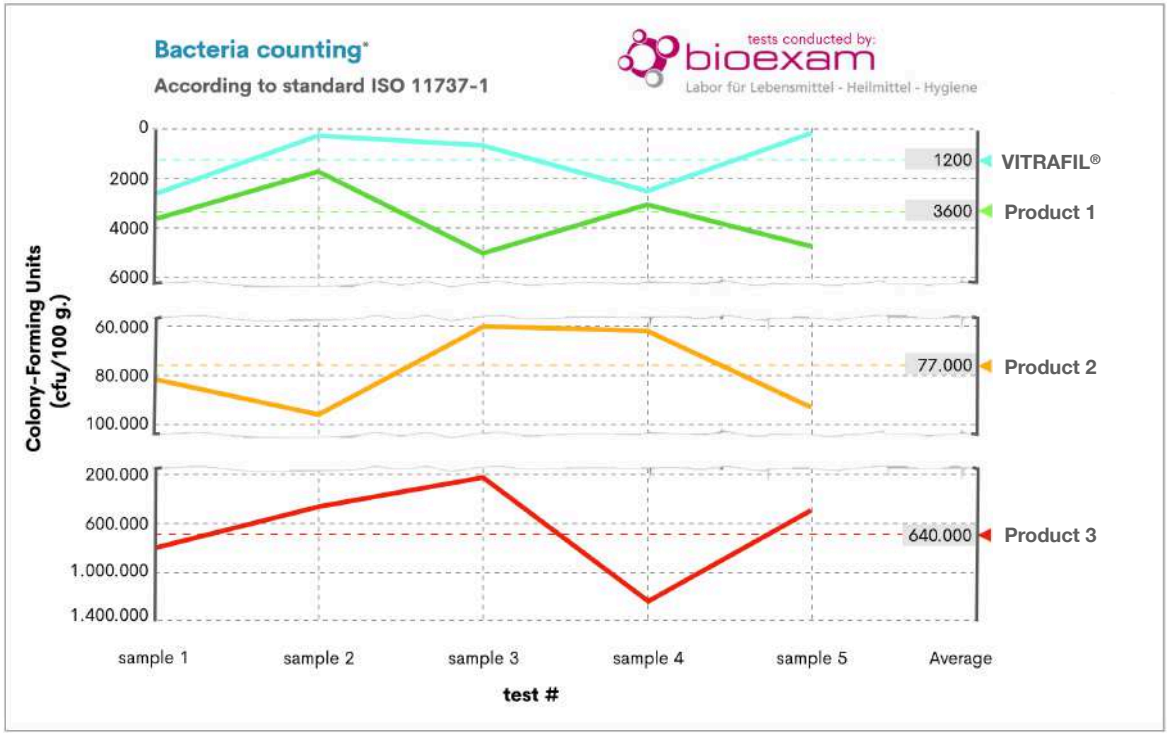
* According to manufacturer's recommendations

Hygiene

Bio-Security is no longer just an option yet a professional responsibility

In an effort to keep users duly informed, we have gone to the **Swiss labs Bioexam AG**, who have proceded to do a test battery of bacterial presence. This way we can check the different levels of Bio-Security of the most representative/outstanding brands on the market:

*Tests carried out on brand new products:



Graphic composition produced by VITRAFIL®

VITRAFIL® Glass Filter Media stands out for having results **very close to zero bacterial presence**, offering the highest level available in terms of Bio-Security.

Hygiene

Accredited **Absence of Biofilm**

The aseptic properties and the Anti-Compaction Technology® of VITRAFIL® avoid the formation of biofilm. This important characteristic is accredited by accreditation laboratories.

Biofilm is responsable for chloramines, clogging and channeling in the filter mass. With the use of VITRAFIL® you will find a difference straight away.

Certified **Absence of Free Silica**

The crystal silica is a compound mineral that can be found in rocks and sand and may be found in filtration sand. A long term exposure to this compound could lead to various lung problems.

VITRAFIL® avoids this hazard as it has no Free Silica in its composition. **Certified by Bureau Veritas Certification number BV ES026775-A-CPI**

Durability

Anti-Compaction Technology®

Most of the filter medias available on the market come to the end of their useful life prematurely due to the effect of compaction (caking), a process where the segregation of fine and thick grains block the microchannels of the filtering mass

In order to avoid this result, VITRAFIL® has developed the Anti-Compaction Technology®, **a precise selection of the calibre of the grain, designed to extend the useful life of the media indefinitely.**

A **single layer** to achieve maximum durability

VITRAFIL® only needs a single layer, with only one grain size, to offer a maximum performance, unlike other filter media that require multiple layers of different grains to be effective

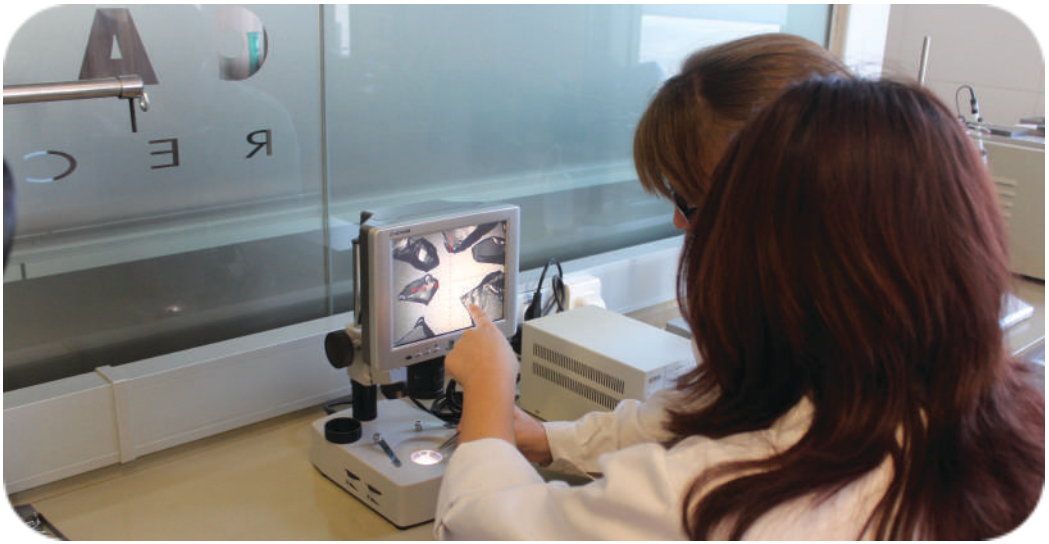
This means VITRAFIL® can be used time and time again. In the case of having to be taken out for any reason, such as damage to the filter or changing the water traps, you just take it out and reuse it in a safe and easy way.

Safety

Safety, a **basic quality**

Safety is a basic quality when it comes to products used for water treatment for human use. For this reason at VITRAFIL® we subject our glass to an advanced micro grinding to eliminate sharp and cutting edges.

With this process we obtain **a glass that is harmless and completely safe to handle.**



Certifications, Accreditations and Tests

VITRAFIL® properties are backed by Bureau Veritas Certifications and by Biofilm Absence Accreditation. We guarantee the highest quality standards in all of our production batches by carrying out a thorough control of the whole production process:

IFTS laboratories testings

- 99,64% Filtration Performance
- Energy and water reduction

Accredited Absence of Biofilm

Certificate Nº ES026775-CPI

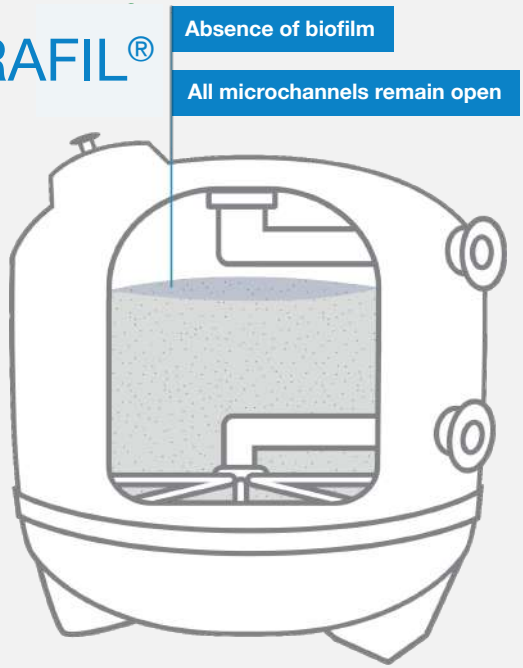
- Product features
- Traceability
- Whole production process control
- Absence of Free Silica

Certificate Nº ES026775-A-CPI

- Fresh Water Treatment authorization according to UNE EN 12.904 normative

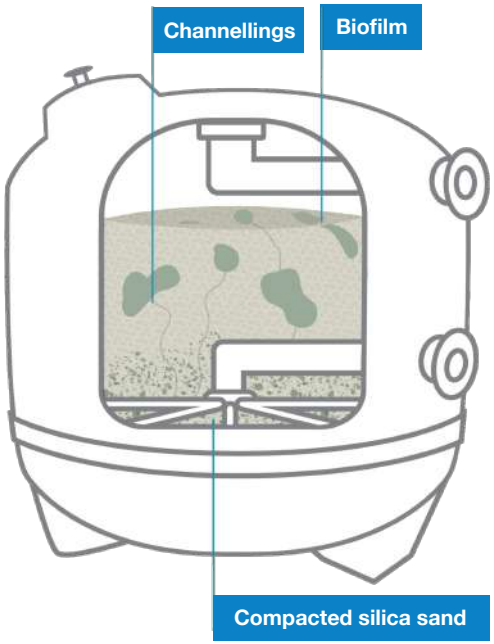
Advantages over silica sand

VITRAFIL®



Advantages of VITRAFIL®

- Absence of Free Silica Bureau Veritas Certified
- Accredited Absence of Biofilm
- Extreme durability
- Mínimum energy, chemicals and water consumptions.
- High filtration quality
- Negligible loss of pressure



Disadvantages of silica sand

- Free silica presence
- It becomes bio-hazardous due to biofilm presence
- Limited durability
- High chemicals, water and energy consumptions
- Preferential channeling presence that reduces filtration quality
- High use of pump pressure

VITRAFIL® over other glass for filtration**: origins**

Origin of VITRAFIL®

Origin: virgin glass obtained from flat glass. Bacteria & Contaminant free.

It is brand new glass, that has never been transformed nor in touch with urban waste.

Origin of all other glass for filtration

Origin: Bottles, jars, pieces of glass from urban glass banks and urban waste

Expected contaminants: bacteria, ceramic, plastic, lab materials, metals, light bulbs, fluorescent tubes…

Comparative table over competitor glasses:

	VITRAFIL® Specially developed for water treatment for human use	Other glasses Used as filter media
PERFORMANCE	• Maximum transparency of the water. • Accredited absence of biofilm. • Reduction of the levels of chloramines and THMs. • Fresh Water Treatments certified.	• Different results.* • No accreditation of absence of biofilm. • Absence of certification for Fresh Water Treatments.
EFFICIENCY	Significant reduction in the consumption of: • Water • Energy • Chemical products	• Less savings in all fields.
HYGIENE AND BIOSECURITY	• Guaranteed bacteria & contaminant free. • VITRAFIL® has a purity level of 99,999% or higher, certified by Bureau Veritas.	• Expected presence of bacteria and other contaminant. • Absence of purity degree certification of any kind.
DURABILITY	• The Anti-Compaction Technology® allows an unlimited lifespan and being able to use a single layer makes it possible to be re-used indefinitely.	• Multiple layers needed, limiting its lifespan in the case of having to fix the filter. • Not reusable.
SAFETY	• Micro polished particle free of sharp edges and pores. • Completely safe to handle.	• Hazardous edges when it comes to handling, especially during installation and removal.
PACKAGING	• Environmentally friendly recyclable packaging. Made from paper with FSC certificate.	• Plastic as main packaging material.

** Its performance depend on the manufacturing batch, because of an uncontrolled grain curve.*
Our grain curve is perfectly controlled, even each fraction is strongly defined following the requirements of the Anti-Compaction Technology®

Our Bureau Veritas Certification of Product, Whole-Production-Process & Traceability, allow us to guarantee our products features

Frequent **Asked Questions**

How much VITRAFIL® glass will I need for my filter?

VITRAFIL® takes up more space than silica sand because of its particle density difference and its Anti-Compaction Technology®, therefore **you will need 20% less than the amount recommended by the manufacturer** on the filter instructions.

Why does VITRAFIL® offer **better results than silica sand?**

(see page 16)

Silica sand loses its filtration capacity in a short period of time due to the growth of biofilm (bacterial colonies) between its grains, which creates preferential channels and clogging.

The absence of biofilm plus Anti-Compaction Technology® makes VITRAFIL® **one of the most efficient filter medias on the market.**

Is VITRAFIL® **compatible with all filters?**

Yes, all standardized filters allow the use of VITRAFIL®, If your filter does not have the worldwide harmonized nozzle opening size [0,35 +- 0,015 mm], we recommend you change the nozzles for standard ones.

Why does VITRAFIL® **only need one layer?**

The combination of layers with different sized grains inside the filter is needed when the filter media has not Anti-Compaction Technology®, in order to delay clogging and be able to do a correct backwashing.

Thanks to its High-Calibrated filter media grain curve, VITRAFIL® does not need different layers in any kind of filter. This also ensures an indefinite shelf life.

Why is VITRAFIL® **transparent?**

VITRAFIL® has been designed and produced specifically for use in water filters. **To ensure maximum purity only virgin glass is used**, it's the only glass with controlled origin and guaranteed not to have been in touch with bacteria or any other contaminating materials.

Unlike other glass filter media, it does not come from urban glass banks and therefore is the only one suitable for water filtration for human consumption.

Is **colored glass** just as efficient as the transparent one?

Glass obtains its color when its being manufactured due to different chemicals, metals and oxides being added to achieve each color. **As it is encapsulated at a molecular level, this does not change any of the glass properties**, nor does it affect the filtering process. However, as the glass used for the colored filter media comes from glass banks, not directly from the manufacturer, it may have all sorts of bacteria and contaminants that can end up in the water, which makes it risky to use in water filters for human consumption.

In **which sectors** may VITRAFIL® be used ?

Thanks to its advantages and technical characteristics VITRAFIL® is now **used in over 100.000 installations all over the world**. Used mainly in:

- Private pool
- Public pool
- Advanced industrial installations such as purification plants, water parks, nuclear installations, desalination plants and aquaculture circuits among others.

Is VITRAFIL® **“activated”**?

By definition, **filtration is a mechanical process where no other forces intervene**, unwanted particles are retained in a filter due to the interaction of the water flow and the filter media. Due to its insulant nature, glass does not allow the free circulation of electrons, and therefore it is not possible to “charge” or “activate”.

Some other manufacturers claim that their glass is “activated” yet this feature has not been backed up by any studies or demonstration.

Learn more:

VITRAFIL®

Hi Tech Glass Filter Media

Anti-Compaction
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