

GRUPPO **ZILIO**
dal 1959

onya® 



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1.1 GRUPPO ZILIO S.p.A.

Originally founded in the vicinity of Bassano del Grappa (VI), **Gruppo Zilio S.p.A.** began by expanding its operations throughout the Triveneto area of North-East Italy, before going nationwide. The group also has extensive experience in other European countries, America and Asia.

In operation since 1959, Gruppo Zilio puts itself forward as the preferred partner of public and private sector enterprises, offering an extensive range of highly specialised services. Complete client satisfaction is our guiding principle and we strive to achieve this by providing a **full, customised and innovative** service, working hard to stand out for our **reliability**, product **quality** and **respect** for the environment.

Our successful formula involves offering a full “**turnkey**” service. Zilio develops and proposes customised solutions, implements them, and then takes care of all the checks, tests and maintenance, using its specialist technical staff who benefit from the group’s great expertise gained over the course of more than fifty years in the business.

We aim to continue along this route, always coming up with and proposing innovative solutions to meet client requirements, increasing their belief in our work and contributing to their success.

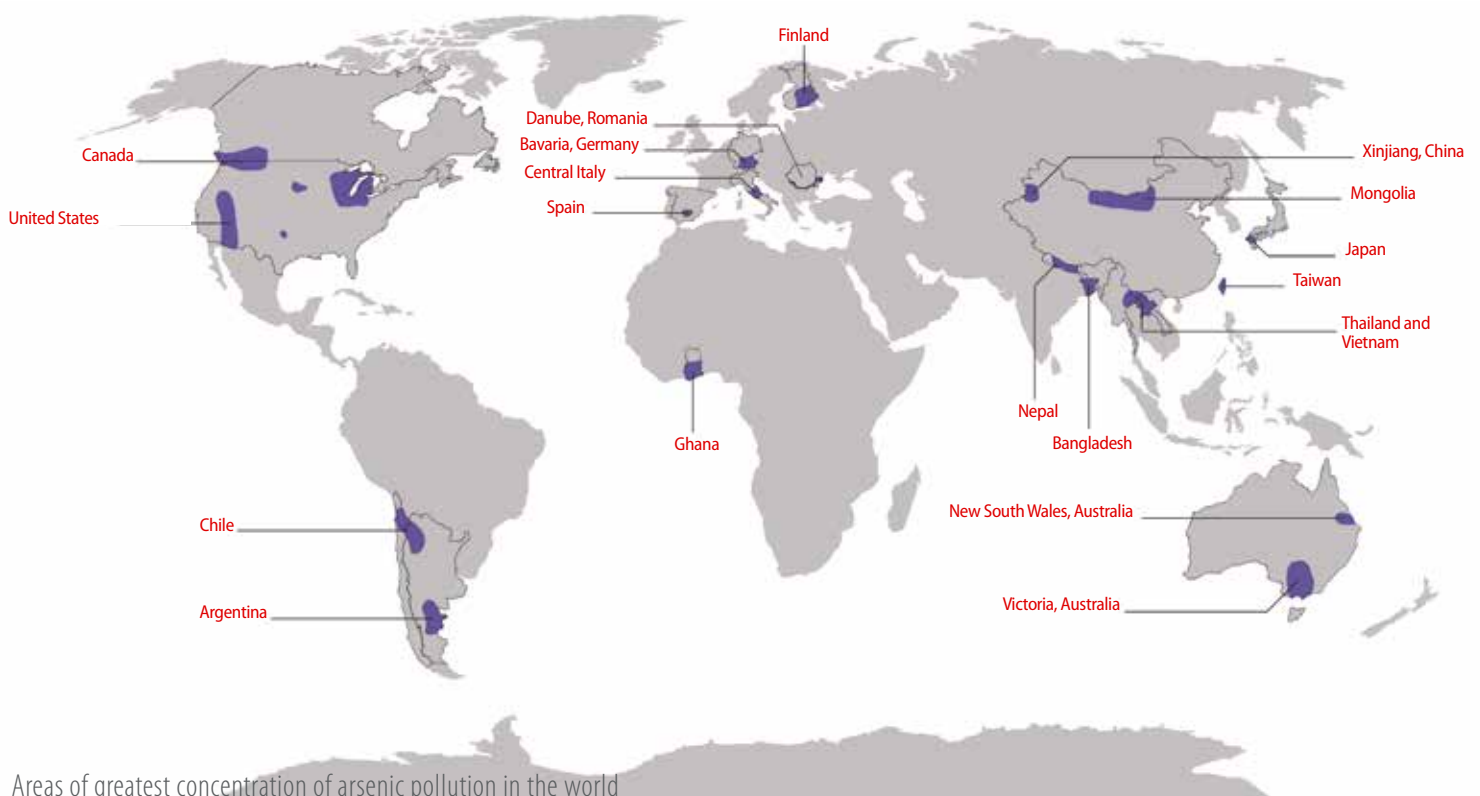




1.2 THE MARKET AND OUR FIELD OF APPLICATION

Today, the contamination of the world's water resources is a key problem in terms of human health, and one which is only destined to grow in significance over time. Contaminants, such as arsenic, fluorine, vanadium and nickel are ubiquitous elements found in rocks, water, the air and living animal and vegetable organisms. They are transferred to water both naturally (e.g. by means of geological erosion), and through anthropic contamination (e.g. mine excavations).

The aquifers in numerous regions around the world present high concentrations of microcontaminants. For example, on the so-called New Continent, vast areas of the **United States, Mexico, Chile** and **Argentina** are polluted, while in Europe this is true of entire regions in **Italy, France, Germany** and **Hungary**, as well as **India, China** and **Vietnam** in Asia. As regards the extent of water contamination, the situation in **West Bengal** (India) is particularly serious. Indeed, here a population of 1.5 million people uses water contaminated by arsenic, at average concentrations of around 200 µg/l. It is therefore evident that a very broad strip of the world population is subject to chronic exposure to arsenic, fluorine, nickel and vanadium through the water that they consume. A number of different effects can derive from the ingestion of these elements by man: toxic, carcinogenic and non-carcinogenic. The earliest signs of arsenic poisoning, for example, can be seen in the skin, while the most concerning effects are linked to the onset of tumours, and endocrine, cardiovascular and neurological complications.





ZILIO
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L'ACQUA
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PURA

1.3 MAKING YOUR DRINKING WATER SAFE FOR THE LAST FIFTY YEARS

The introduction of legal limits has succeeded in containing the harmful effects on man deriving from the intake of arsenic, fluorine and vanadium in drinking water. Under Italian legislation, research into arsenic in water began with Ministry of Health Memorandum No 33 of 27 April 1977, regarding the "Control and surveillance of drinking water quality characteristics". This document on the evaluation of water quality was inspired by the guidelines issued by the World Health Organisation, which established contaminant limits measured in micrograms per litre. A significant change occurred in 2003 with the introduction of Italian Legislative Decree 31/2001, which absorbed European Directive 98/83/EC, leading to the consequent introduction of new more restrictive limits than those previously in place, taking the arsenic limit from 50 µg/l to 10 µg/l, the fluorine limit from 3 mg/l to 1.5 mg/l, and the boron limit from 3 µg/l to 1 µg/l.

The patented adsorption media filters manufactured by the **ONYA** division of Gruppo Zilio guarantee compliance with the contaminant limits established by law. On the basis of tests carried out, the Research & Development division has focused on the technological perfecting of polarised natural granules. The great drive implemented by the group and a number of technological developments have led to a radical reduction in operating costs, inasmuch as it is no longer necessary to replace the filter material at the end of each cycle. Instead, the saturated material can simply be **regenerated** and the solid waste filtrate disposed of.

GRUPPO



The **ONYA** production subdivision uses the best technology and raw materials available to manufacture the filter media in its new plant dedicated specifically to this process, built in Cassola (VI) in 2007.



The **ONYA** laboratories carry out scrupulous analyses in order to test and certify all the products and research carried out by other **ONYA** subdivisions. The laboratories also play a key role in the research and perfecting of **ONYA** products.



ONYA's Innovation & Development unit researches and tests new application technologies, installs and monitors pilot plants and comes up with new projects intended to improve or protect the environment. All this makes **ONYA** a safe and reliable brand.



ONYA owns various trademarks and patents thanks to its investment in research. The most important of these are: [**ANDEL POLARY TH08**](#)
Product based on natural regenerative

With water in your mouth . . .



1.4 THE FUTURE: RESEARCH AND INNOVATION

We firmly believe that **we can and we must go back to drinking tap water**. This is why we have chosen to use non-invasive water treatment technology rather than doses of chemical reagents, ion exchange resins and reverse osmosis. Our decision is based on the following technical reasons:

- Processes involving doses of chemical reagents alter the good properties of the water, require detailed controls, and do not guarantee the stability of the removal thresholds envisaged by law, meaning that the contaminant concentration levels in the water are inconstant. The operating costs of these plants are noticeably affected by the daily sludge disposal and the need for constant manning by specialist personnel.
- As well as altering the good organoleptic properties of the water, ion exchange processes also involve operating difficulties due to high pH levels, huge costs, difficulty disposing of the regeneration material resulting from the use of chemical reagents in the process, the need for ongoing regeneration of the material and, lastly, the fact that the resin adsorption capacity is considerably reduced in the presence of silica, phosphates and sulphates.
- The reverse osmosis process is often questioned due to the high investments involved, and because of its lack of efficiency (40% of the treated water is lost into the drainage system). Reverse osmosis is not always able to remove microcontaminants, and the membranes tend to be subject to the phenomenon known as “scaling”, which normally requires acidification and conditioning of the water to be treated. The mineral salt content of the water is generally reduced to such low levels that direct use as water for human consumption is not permitted.

On the contrary, our exclusively owned adsorption media filter systems represent the only technology that does not alter the good properties of the water, from either a microscopic and chemical point of view, or from a macroscopic and taste point of view. Thanks to the start-up of the new **ONYA plant** for the production of adsorbent granules, which is also home to a research centre, we will now have even more opportunity to offer our clients effective, high quality, customised solutions for all water destined for human consumption, providing a specific, distinctive and, above all, certified process.

This is the challenge we face on the markets, which we first took on in 1959. We have now branched out into Europe and are ready to take on the global international markets. Despite our many competitors, we are confident that the **quality of our products will ensure our success**.

A close-up photograph of a hand holding a stream of water. The water is clear and dynamic, with many small droplets and splashes. The background is a solid, bright blue. The image is partially obscured by a white diagonal shape on the right side.

EACH DROP OF WATER

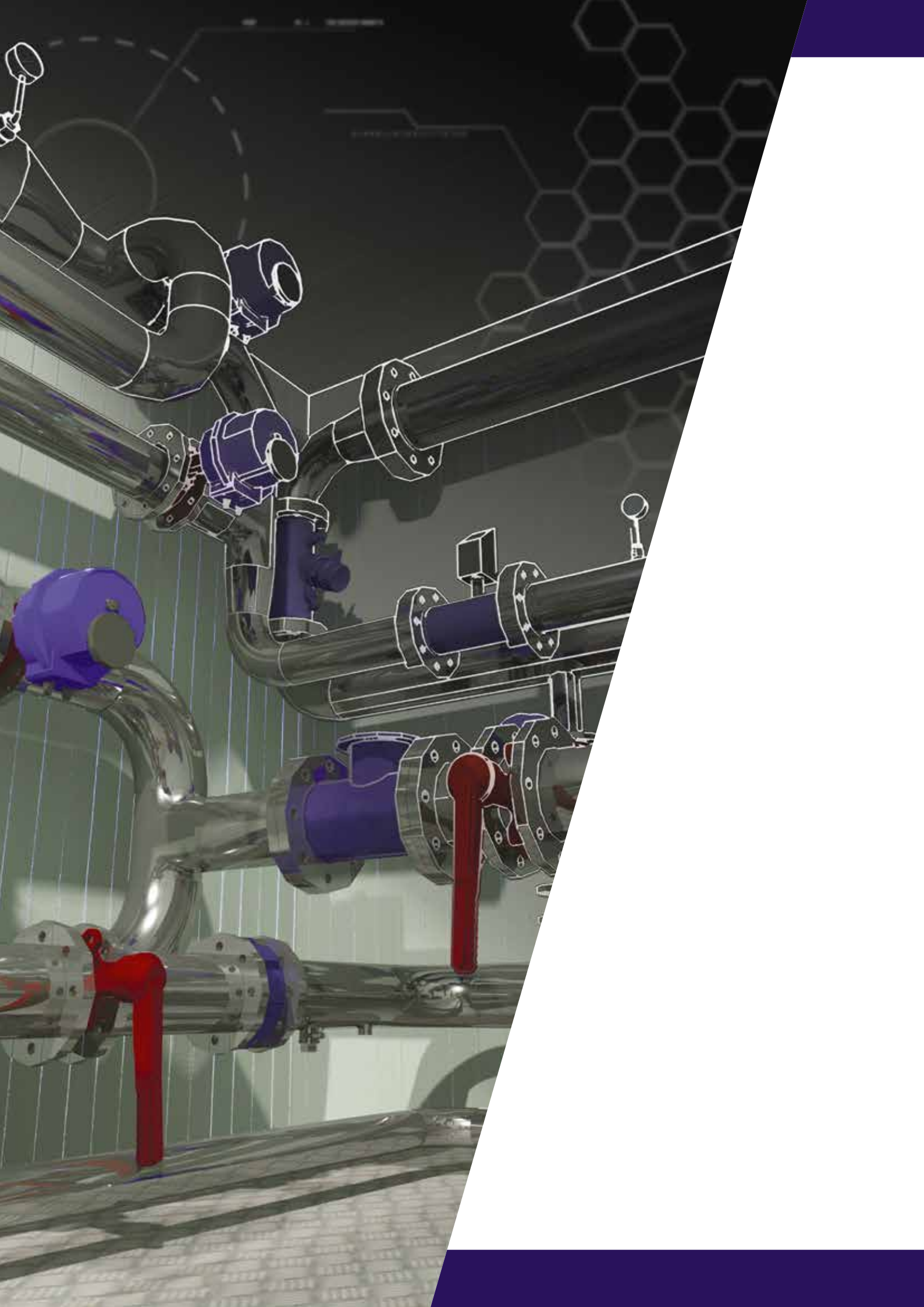
bathes and nourishes a blade of grass

2.1 RESIDENTIAL AND INDUSTRIAL WATER FILTRATION SOLUTIONS

The filtration solutions proposed by the **ONYA** division of Gruppo Zilio include a wide range of valid, tested and certified technologies for the removal of **arsenic, boron, cesium, chromium, fluorine, nickel, nitrates, radon, sulphates, uranium** and **vanadium** by means of the principle of **adsorption**. This principle preserves the organoleptic properties of the water, without the use of chemical agents. It essentially involves passing the water to be treated through a fixed adsorbent bed of regenerable natural "polarised" granules with a stratified system. The process removes up to 98% of the micro-contaminants present in the water to be treated. It does not produce sediments and works without expensive regulation and control techniques. To this we can add the high quality of the **STAINLESS** steel used to make our plants, offering both long-term safety and operational guarantees for the plant itself.

Over recent years Gruppo Zilio's strong awareness of environmental issues has driven it to work towards new technical solutions for the purification of water destined for human consumption, bottling and use in the food industry in general. Our plants vary in capacity from 1 l/s to 800 l/s, featuring various types of operation depending on the properties of the water to be treated (up to 300 micrograms/litre) and the existing treatment process. Some plants have been developed to remove arsenic, fluorine, vanadium and phosphates simultaneously. These technologies have been adopted and installed on an industrial scale by various private sector enterprises and by numerous public municipalities in Italy and Europe, producing excellent results in terms of efficiency and quality.

Lastly, the filter media **regeneration** process makes it possible to extract the contaminant adsorbed by the granules in the filter bed in an aqueous solution that is then treated in order to reduce its volume until obtaining a sludge consisting almost entirely of the extracted microcontaminant. This phase, which involves reduction of the overall waste volume, is an integral part of the regeneration process with **TRIMEX**[®], developed and patented by Gruppo Zilio in order to recover and reuse the filter material and achieve considerable financial savings due to elimination of the solid waste disposal phase that would otherwise be required for the filter material after use.

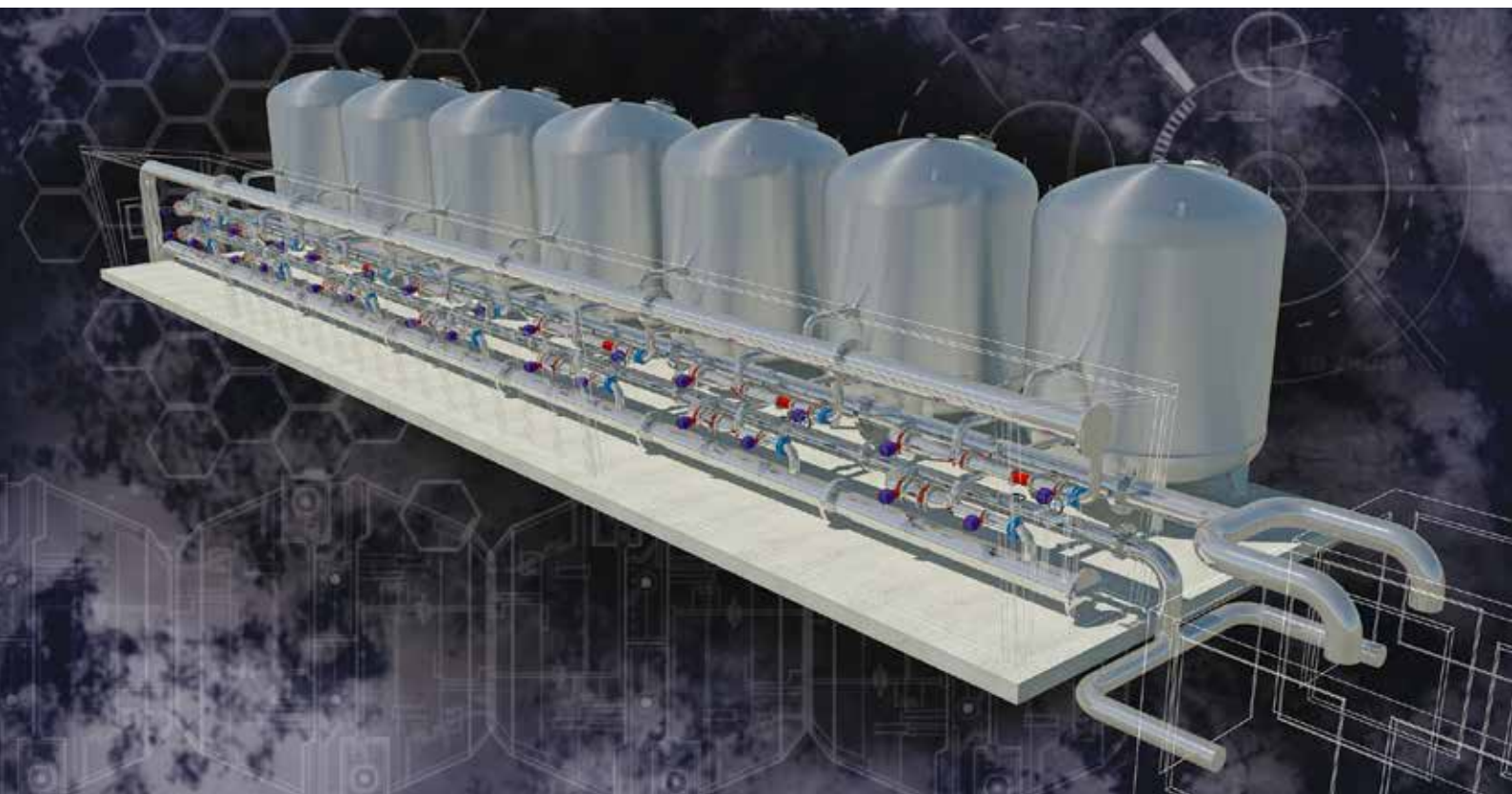


2.2 THE DESIGN PROCESS

Before designing, developing and installing a new definitive plant, the **ONYA** division of Gruppo Zilio samples and analyses the water to be treated. It then works in partnership with the client to select and install a **pilot plant** for the development of the specific process engineering and the optimisation of both the definitive plant and the operating costs. This makes it possible to develop targeted, simpler procedures, requiring less maintenance, for the removal of microcontaminants from the water to be treated.

In order to permit the preliminary feasibility study for the microcontaminant removal process, and then to identify the best process settings, the **ONYA** division builds and installs pilot plants with variable capacities of between 1 and 3 m³/h at the client's supply points. The subsequent regulation and analytical verification phase is used to determine and certify proper working order of the plant and adequate treatment for elimination of the contaminant from the water destined for consumption by users.

When every detail has been finalised, Gruppo Zilio S.p.A. is able to draw up the design for the definitive plant and take care of its development and installation with the help of its staff of engineers, architects and specialist technicians. There is currently no operator on the drinking water treatment market that offers a combination of top quality engineering services and an industrial structure able to adequately manage production and sale of the filter media. This is why the **ONYA** division of Gruppo Zilio represents the most innovative and effective offer available to clients.

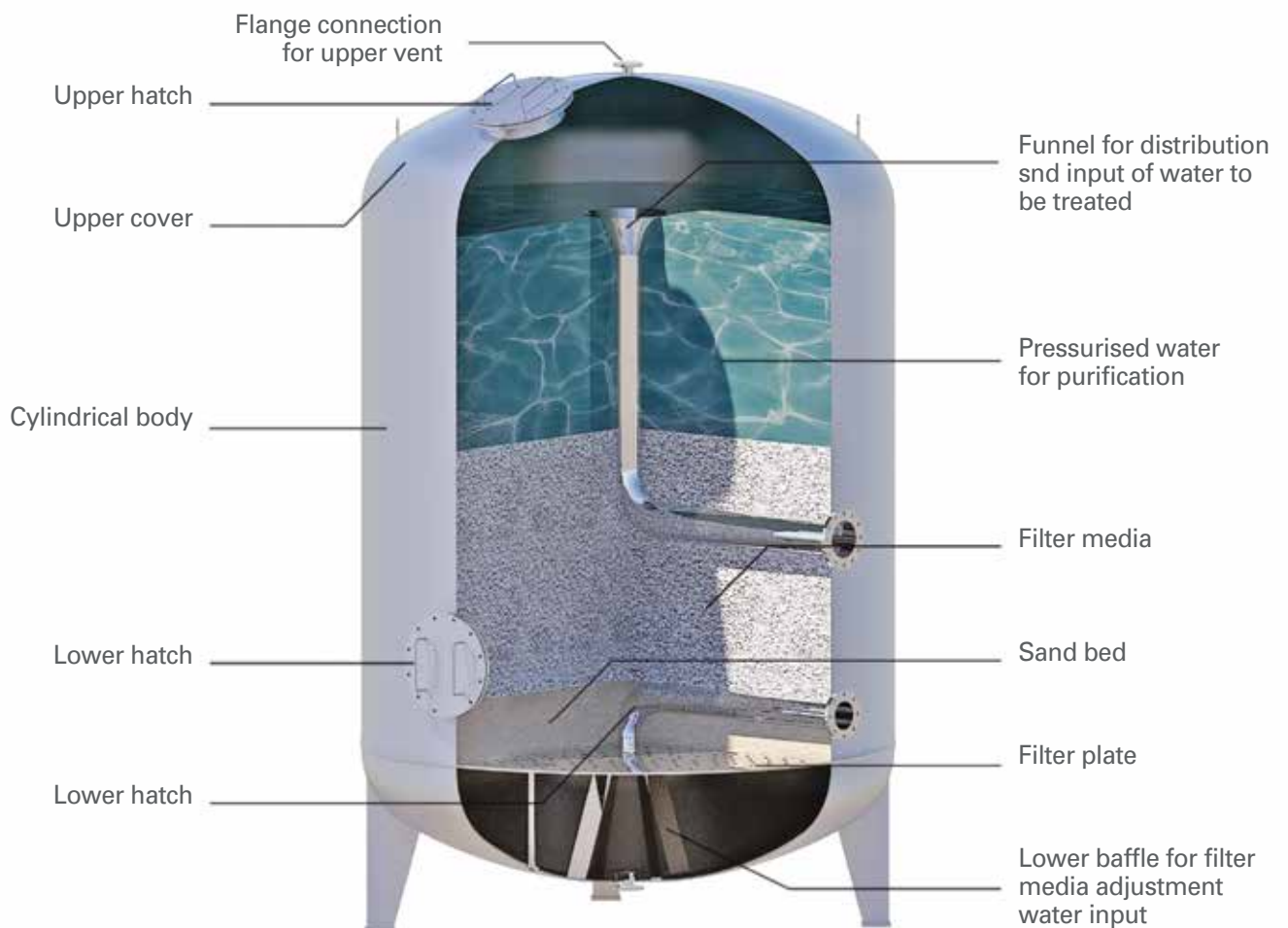




2.3 FILTER DESIGN

In order to obtain the best results from the use of **ONYA** filter media, they are used within pressurised filters crossed by the flow of water to be treated (plug flow). The pressurised flow produces a larger supply of contaminant elements (such as arsenic) on the top layers of the filter bed, leading to the optimal saturation of the filter media. The concentration falls progressively in the lower layers of the filter, thereby guaranteeing an adequate level of removal for longer.

The filter plumbing circuit permits the water to be treated to flow in and the treated water to flow out by passing through the filter material contained in the filter itself. The filtration process takes place from top to bottom. The water to be treated is channelled into the filter by a funnel near the top cover. The water is then distributed evenly over the entire surface. Once it has passed through the filter bed, the water emerges through a system of nozzles on the lower plate, which feed the purified water outlet pipe. Given the characteristics of the APTH08 filter material it does not require backwashing. Instead, the filter bed simply needs to be adjusted, leading to a drastic reduction in the quantities required and the almost total elimination of the reddish colour of the resulting water. During the adjustment of the filter bed, the water needed for the process is taken from storage tanks, where it returns at the end of the procedure, almost free from waste, as part of a closed cycle.





Sustainable **PROGRESS**
for the benefit of **EVERYBODY**

3.1 THE ONYA LABORATORY

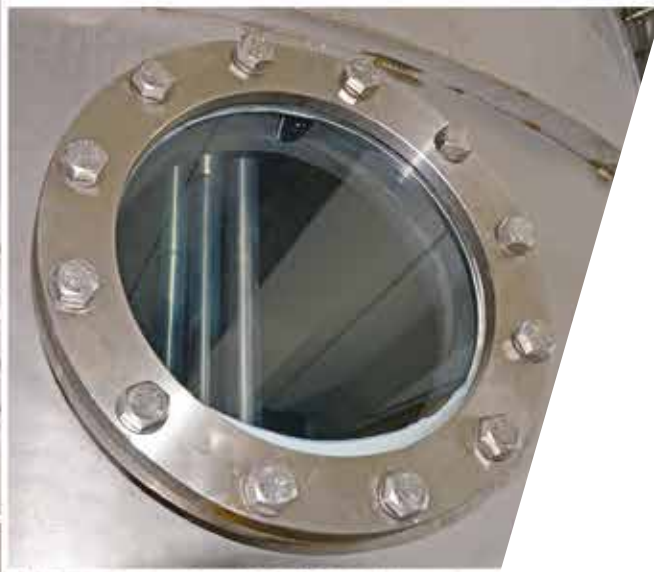
ONYA, the new Gruppo Zilio laboratory dedicated to filter media, has recently begun operations.

The structure is housed in a newly built industrial building, which is brightly lit, practical and pleasing to the eye. Inside, a research & development laboratory is dedicated to the study, characterisation and engineering of new filter media, as well as to the validation of existing processes. The laboratory is equipped with the necessary tools for performing the main water analyses, essential in order to offer clients targeted filtration solutions: each water type requires its own treatment process.

Naturally, arsenic and fluorines are our real forte, because these are the contaminants that have traditionally been treated by the company with procedures that are always in line with technical and scientific developments in the sector. However, these technologies are accompanied by many more, taking on the most demanding challenges set by growing environmental awareness, which we see as being socially beneficial both for the present and the future. This has led to the development of many new processes, such as those for the removal of boron and sulphates, to cite just some of the recent developments. A new line dedicated to the production of hydroxyapatite, an extremely selective material for fluorine absorption, has recently been installed and commissioned.

The philosophy behind the process is one of using inorganic media which are chemically indistinguishable from substances commonly found in nature. Because of this, we can really talk about natural filtration, even if it is achieved using the most advanced technological resources.





3.2 THE PRODUCTION PROCESS

Over the years, the **ONYA** division of Gruppo Zilio S.p.A. has developed a series of patented processes for the production of cutting edge filter media.

Key decisions were made to use food grade quality raw materials and processes that are as ecofriendly as possible, alongside the most up-to-date techniques and sophisticated electronic controls.

Upon arrival at the plant, the raw materials are checked by the suitably equipped laboratories of the **ONYA** Research & Development division. Once they have passed the initial checks, they enter a work cycle supervised by a series of dedicated processors. This means that each subsequent step in the production process is controlled by sensors. In the event of deviations from the standard values, the sensors act quickly to provide the data needed to make the necessary changes to restore the process back to within the established standards.

At the end of the cycle, the product once again returns to the **ONYA** laboratories to undergo strict quality tests and obtain the necessary certificates. Only after having passed this final step can the filter media become a “Zilio material”.



**TECHNOLOGICALLY
ECOLOGICAL SINCE 1959**



4.1 FILTER MEDIA PRODUCT LINE

ANDEL POLARY TH08®

ONYA® FLUOR PLUS 1000

ONYA® BOR Sst 100

ONYA® VAN X56

ONYA® SULPHATES BIG 300

ONYA® ANTIMONY PAS T18

ONYA® NITRA Se 500

ONYA® SELEN G33

ONYA® URAN B60

ONYA® MISAs

ONYA® - VIEW AND REMOTE



ANDEL POLARY TH08®



ANDEL POLARY TH08® is an absorbent material with an iron oxyhydroxide base for treating drinking water or industrial waters. It enables **arsenic** levels to be reduced to well below 10 µg/l without significantly altering the taste and smell of the water. It is generally used inside pressure filters.

PROPERTIES

Chemical composition	FeO(OH) and Fe(OH) ₃
Dry residue	47-57 %
Diameter of particles	0.2-2 mm
Apparent density (after backflushing)	1.15 kg/dm ³
Specific surface area (BET)	approx. 300 m ² /g

USE

Height of bed	80-160 cm
Free height	50% of height of bed
Filtration speed	≤20 m/h
Contact time (EBCT)	≥3 min
Loss of charge	0.5 bar max (at 6 bar)
Backflushing flow rate	26 m/h
Duration of backflushing:	until effluent is clarified

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

The material must never be allowed to dry out completely (for example, it must not be exposed to sunlight)

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® FLUOR PLUS 1000



ONYA® FLUOR PLUS 1000 is a material in pellet form, which is white in colour and practically insoluble in water or in an alkaline environment but soluble in diluted acids. It is formulated to eliminate **fluorines** from drinking water or industrial waters. It can be regenerated for an indefinite number of cycles.

PROPERTIES

Composition (main components)	CaO, P ₂ O ₅ , H ₂ O
Mineral phase	Hydroxylapatite (>95%)
Diameter of pellets	1.5-2.5 mm
Actual density	3100-3200 g/dm ³
Pellet density	1500-1600 g/dm ³
Apparent density	650-850 g/dm ³

USE

Filtration speed	3-6 m/h
Contact time (EBCT)	10-20 min
Regenerating solution	NaOH 1-4%
Regeneration capacity	2-4 BV/h
Regeneration time	2-3 h
Water for regeneration	The use of water with a low hardness level is recommended
Neutralisation	With CO ₂ until reaching a neutral pH
Preconditioning	Before initial use it is recommended that a regeneration cycle is performed

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.



ONYA® BOR Sst 100



ONYA® BOR Sst 100 is a highly selective ionic exchange resin that removes **boron** compounds from water.

Thanks to its exceptional selectivity, which is due to the formation of a very stable complex of the functional group with the borate ion, it can even be used for water with high saline levels.

PROPERTIES

Structure of the polymer matrix	Macroporous polystyrene
Functional group	N-Methylglucamine
Ionic form	Free base
Particle size	0.5-0.7 mm
Fraction with diameter <0.3 mm	<1%
Water retention (free base)	48-54%
Apparent density	700 g/l
Total exchange capacity	0.7 eq/l
Maximum working temperature	75°C

USE

Working flow rate	4-30 BV/h
Regenerating agent type and concentration	H ₂ SO ₄ (10%), followed by NaOH (4%)
Amount of regenerating agent	48 g H ₂ SO ₄ /l of resin; 64 g NaOH/l of resin
Regenerating agent flow rate	2-4 m/h

TRANSPORT AND STORAGE

The product is supplied in waterproof bags.

The product is not subject to degradation and can be stored for at least one year.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® VAN X56



ONYA® VAN X56 is an absorbent material with an iron oxyhydroxide base for treating drinking water or industrial waters. It enables **vanadium** levels to be reduced to well below 50 µg/l without significantly altering the taste and smell of the water. It is generally used inside pressure filters.

PROPERTIES

Chemical composition	FeO(OH) and Fe(OH) ₃
Dry residue	47-57 %
Diameter of particles	0.2-2 mm
Apparent density (after backflushing)	1.15 kg/dm ³
Specific surface area (BET)	approx. 300 m ² /g

USE

Height of bed	80-160 cm
Free height	50% of height of bed
Filtration speed	≤20 m/h
Contact time (EBCT)	≥3 min
Loss of charge	0.5 bar max (at 6 bar)
Backflushing flow rate	26 m/h
Duration of backflushing:	until effluent is clarified

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

The material must never completely lose its moisture, so it must be stored in a cool place that is well away from sunlight.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® SULPHATES BIG 300



ONYA® SULPHATES BIG 300 is an ionic exchange resin with a strong anionic base, specially formulated to reduce **sulphates** even in water with high percentages of acids. It has very good regeneration features.

PROPERTIES

Structure of the polymer matrix	Polystyrene with DVB
Functional group	$R-N(CH_3)_2(C_2O_4H)^+$
Ionic form	OH-
Granulometry	16-50 mesh (damp)
Fraction with diameter >1.2 mm	<5%
Fraction with diameter <0.3 mm	<1%
Water retention (OH-)	45-51%
Apparent density	680-760 g/l
Total exchange capacity	1.3 m ³ /l
Maximum working temperature	40°C
Allowable pH interval	0-14 pH

USE

Minimum height of resin bed	0.6 m
Working capacity	10-50 BV/h
Regenerating agent type and concentration	NaOH, 2-6%
Regenerating agent capacity	2-4 BV/h
Regenerating agent contact time (EBCT)	60 min (minimum)
Rinsing capacity	Same as the working capacity
Rinse volume	4-8 BV

TRANSPORT AND STORAGE

The product is supplied in waterproof bags.

The product is not subject to degradation and can be stored for at least one year.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® ANTIMONY PAS T18



ONYA® ANTIMONY PAS T18 is an absorbent material with an iron oxyhydroxide base for treating drinking water or industrial waters. It enables **antimonium** levels to be reduced to well below 50 µg/l without significantly altering the taste and smell of the water. It is generally used inside pressure filters.

PROPERTIES

Chemical composition	FeO(OH) e Fe(OH) ₃
Dry residue	47-57 %
Diameter of particles	0.2-2 mm
Apparent density (after backflushing)	1.15 kg/dm ³
Specific surface area (BET)	approx. 300 m ² /g

USE

Height of bed	80-160 cm
Free height	50% of height of bed
Filtration speed	≤20 m/h
Contact time (EBCT)	≥3 min
Loss of charge	0.5 bar max (at 6 bar)
Backflushing flow rate	26 m/h
Duration of backflushing:	until effluent is clarified

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

The material must never completely lose its moisture, so it must be stored in a cool place that is well away from sunlight.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® NITRA Se 500



ONYA® NITRA Se 500 is a selective ionic exchange resin for nitrates, specially formulated for use in water purification processes. It is effective in removing **nitrates** even when non-negligible concentrations of sulphates are present.

PROPERTIES

Structure of the polymer matrix	Styrene macropore with DVB
Functional group	R-N-R ₃ +Cl-
Ionic form	Cl-
Granulometry	16-50 mesh (damp)
Fraction with diameter >1.2 mm	<5%
Fraction with diameter <0.3 mm	<1%
Water retention (Cl-)	52-56%
Apparent density	680-730 g/l
Total exchange capacity	1 m ³ /l
Maximum working temperature	100°C
Allowable pH interval	0-14 pH

USE

Exchange capacity at 25°C	>0.3 m ³ /l
Working flow rate	15-25 m/h
Regenerating agent type and concentration	NaCl, 8-10%
Quantity of regenerating agent	2-3 volumes of bed
Regenerating agent flow rate	4-6 m/h
Regenerating agent contact time (EBCT)	30-60 min
Rinsing flow rate	15-25 m/h
Rinsing time	25-30 min

TRANSPORT AND STORAGE

The product is supplied in waterproof bags.

The product is not subject to degradation and can be stored for at least one year.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® SELEN G33 is an absorbent material with an iron oxyhydroxide base for treating drinking water or industrial waters. It enables **selenium** levels to be reduced to well below 10 µg/l without significantly altering the taste and smell of the water. It is generally used in pressure filters.

PROPERTIES

Chemical composition	FeO(OH) and Fe(OH) ₃
Dry residue	47-57 %
Diameter of particles	0.2-2 mm
Apparent density (after backflushing)	1.15 kg/dm ³
Specific surface area (BET)	approx. 300 m ² /g

USE

Height of bed	80-160 cm
Free height	50% of height of bed
Filtration speed	≤20 m/h
Contact time (EBCT)	≥3 min
Loss of charge	0.5 bar max (at 6 bar)
Backflushing flow rate	26 m/h
Duration of backflushing:	until effluent is clarified

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

The material must never completely lose its moisture, so it must be stored in a cool place that is well away from sunlight.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA® URAN B60



ONYA® URAN B60 is an absorbent material with an iron oxyhydroxide base for treating drinking water or industrial waters. It enables **uranium** levels to be reduced to almost zero without significantly altering the taste and smell of the water. It is generally used inside pressure filters.

PROPERTIES

Chemical composition	FeO(OH) and Fe(OH) ₃
Dry residue	47-57 %
Diameter of particles	0.2-2 mm
Apparent density (after backflushing)	1.15 kg/dm ³
Specific surface area (BET)	approx. 300 m ² /g

USE

Height of bed	80-160 cm
Free height	50% of height of bed
Filtration speed	≤20 m/h
Contact time (EBCT)	≥3 min
Loss of charge	0.5 bar max (at 6 bar)
Backflushing flow rate	26 m/h
Duration of backflushing:	until effluent is clarified

TRANSPORT AND STORAGE

The product is supplied in big bags.

The product is not subject to degradation and can be stored for at least one year.

The material must never completely lose its moisture, so it must be stored in a cool place that is well away from sunlight.

NOTES

The information provided above may be subject to slight variations according to the specific application, as the absorption power depends on conditions such as the chemical composition and pH of the water that is being treated.

Through its customer service department, Gruppo Zilio is able to provide the necessary support to ensure optimum sizing of the plant.

ONYA[®] MISAs

Analyser for continuous on-site measurement of parameters



Another result achieved by the Gruppo Zilio Research & Development Division is the testing and consequent application at industrial level of the first continuous online analyser of the concentration of a given parameter in both untreated and treated water.

APPLICATIONS

With the introduction of ONYA[®] MISAs a level of sampling phase automation has been reached that totally eliminates the need for any intervention by technicians, allowing the results of the various analyses performed to be remotely controlled.

OPERATIONAL PRINCIPLE

ONYA[®] MISAs makes use of the electrochemical determination of metal species either after their preliminary enrichment on a long-living non-mercury electrode or through their direct electrochemical conversion.

WORKING PLACE REQUIREMENTS

The ONYA[®] MISAs operates under the following conditions:

- Temperature: 15 to 35 °C
- Relative humidity: up to 90 % (not condensating)

OPERATION DURATION AND MAINTENANCE

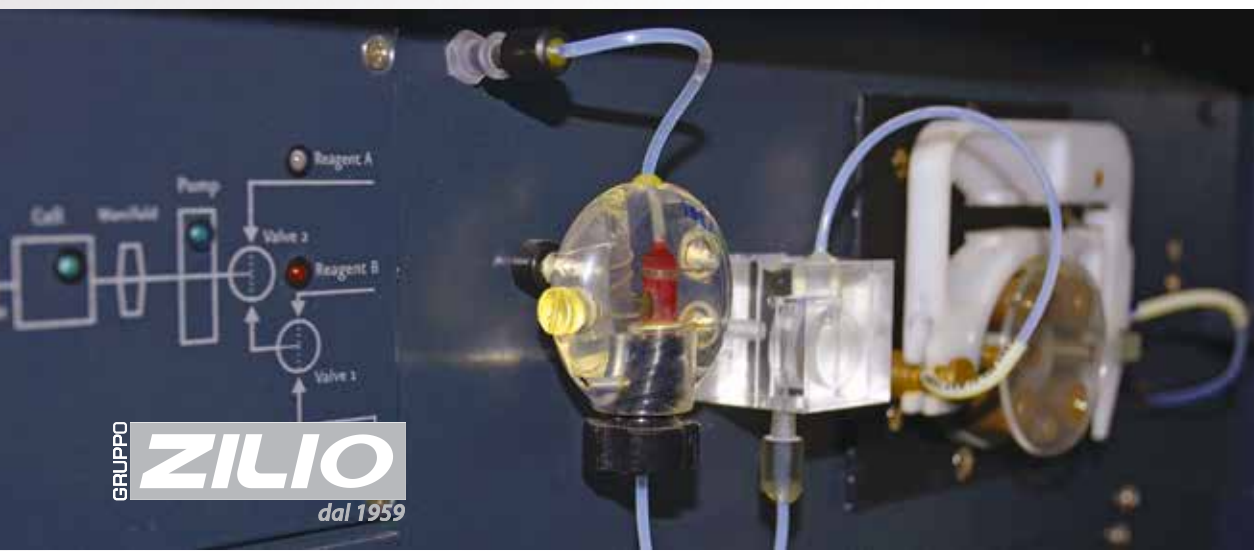
The system operates unattendedly and automatically for at least one week not demanding any service. After this period, the working electrode, fine filter and reagent solutions should be replaced.

METROLOGICAL DATA

Detection limits are in the µg/l range. The precision of the results is usually about 2-5 %.

TECHNICAL PARAMETERS

- Cell with three electrodes
- Software: Programmable starting and finishing dates, measuring and validation frequencies, automatic evaluation and archivation.
- Digital IN/OUT interface
- Modem connection
- Weight: 50 – 80 kg, configuration dependent
- Dimensions: 50x45x110 cm.



ONYA[®] VIEW AND REMOTE



Created entirely using web technology, ONYA[®]-View can be used via an Internet browser. By using ONYA[®]-View, it is possible to access the system's reporting services.

The pre-set reports available include the following: progress of measurements (graphs) - operator actions (who has done what) - alarms triggered and their assessment - plant configuration (components and parameters).

By using ONYA[®]-Remote, it is possible to access peripheral systems from your internet browser, in complete safety and according to your access level rights.

The graphic pages of the plant SCADA are reproduced in the browser, allowing the user to carry out remote supervision and control, and to view in real time the values measured in the plant, the status of users, to modify working parameters and to enter set-points. ONYA[®]-Remote is currently able to connect to the peripheral stations of Gruppo Zilio S.p.A. (Zilio-SPC 2.5) and to various third party systems.

Connect DISCONNECTED
Disconnect

Plant Status
0.0 ByPass Measurer
0.0 Water to be treated
0.00 °C Temperature measurer
0.00 m ³ /h Flow Rate measurer

Plant not connected

A B

Q Q

Emergencies Tools Controls Telecameras

GRUPPO ZILIO
dal 1959

THE **SCIENCE** OF TODAY

THE **TECHNOLOGY** OF TOMORROW





**UAMI – UFFICIO PER L'ARMONIZZAZIONE NEL
MERCATO INTERNO
MARCHI, DISEGNI E MODELLI**

CERTIFICATO DI REGISTRAZIONE

Si rilascia il presente certificato di registrazione per il marchio comunitario identificato in appresso. I dati ad esso relativi sono stati iscritti nel Registro dei Marchi Comunitari.

**OHIM – OFFICE FOR HARMONIZATION IN THE
INTERNAL MARKET
TRADE MARKS AND DESIGNS**

CERTIFICATE OF REGISTRATION

This Certificate of Registration is hereby issued for the Community Trade Mark identified below. The corresponding entries have been recorded in the Register of Community Trade Marks.

Registrato / Registered 01/07/2011

No 009721796

ANDEL POLARY TH08

Il Presidente / The President

António Campinos



210	009721796	Filtermateriaal; Filterkool; Keramische materialen, in de vorm van deeltjes, voor gebruik als filtermateriaal.
220	09/02/2011	PL - 1
400	24/03/2011	Materiały filtracyjne; Węgiel do filtrów; Materiały ceramiczne zwłaszcza do filtrów.
151	01/07/2011	PT - 1
450	05/07/2011	Matérias filtrantes; Carvão para filtros; Materiais cerâmicos em partículas para utilizar como produtos de filtragem.
186	09/02/2021	RO - 1
541	ANDEL POLARY TH08	Materiale de filtrare; Carbon pentru filtre; Materiale din ceramica sub forma de particule, folosite ca mijloace de filtrare.
521	0	SK - 1
732	GRUPPO ZILIO S.P.A. Via Santa Maria in Colle, 13 31044 MONTEBELLUNA (TV) IT	Filtračné materiály; Uhlík do filtrov; Keramické materiály vo forme častíc, na použitie ako prostriedky na filtrovanie.
740	Piovesana, Paolo Via F. Baracca, 5/A 30173 Venezia-Mestre IT	SL - 1
270	IT EN	Filtrirni materiali; Oglje za filtre; Keramični materiali v obliki delcev, za uporabo kot filterni medij.
511	BG - 1	FI - 1
	Материали за филтриране; Въглен за филтри; Керамични материали в определена форма за употреба като филтриращи средства.	Suodatusaineet; Hiili suodattimiin; Keraaminen aines hiukkassuodatukseen.
	ES - 1	SV - 1
	Materiales filtrantes; Carbón para filtros; Materiales cerámicos en partículas para su uso como productos de filtrado.	Filtrerande material; Filterkol; Keramiska material i kornform för användning som filterpreparat.
	CS - 1	
	Filtrační materiály; Filtry (uhlík do-); Filtrační keramické materiály ve formě částic.	
	DA - 1	
	Filtreringsmaterialer; Kul til filtre; Keramiske materialer i partikelform til brug som filtreringsmateriale.	
	DE - 1	
	Filtermaterial; Filterkohle; Keramikpartikel als Filtermaterial.	
	ET - 1	
	Filtermaterjalid; Aktiivsüsi (filtrite); Purustatud keraamilisest materialist filtermaterjal.	
	EL - 1	
	Υλικά διήθησης: Ήνθρακας για φίλτρα· Κεραμικά σωματίδια ως υλικό για φίλτρα.	
	EN - 1	
	Filter material; Carbon for filters; Ceramic materials in particulate form for use as filtering preparations.	
	FR - 1	
	Matières filtrantes; Charbon pour filtres; Matériaux céramiques en particules utilisés dans des préparations de filtrage.	
	IT - 1	
	Materiali filtranti, carbone per filtri, materiali ceramici in particelle per filtri.	
	LV - 1	
	Filtrēšanas materiāli; Oglekļa filtri; Kramikas materiāli, kas galvenokārt, paredzēti filtriem.	
	LT - 1	
	Filtruojančios medžiagos; Anglis (filtrų); Filtravimo terpės (susmulkintos keraminės medžiagos -ėms).	
	HU - 1	
	Szűrő anyagok; Szén szűrőként; Kerámiai anyagok szemcsés formában, szűrőkhöz.	
	MT - 1	
	Materjali għall-użu bħala filtri; Karbonju għall-filtri; Materjali taċ-ċeramika forma ta' frak għall-filtri.	
	NL - 1	



Registrato / Registered 01/07/2011

No 009721846

**UAMI – UFFICIO PER L'ARMONIZZAZIONE NEL
MERCATO INTERNO
MARCHI, DISEGNI E MODELLI**

CERTIFICATO DI REGISTRAZIONE

Si rilascia il presente certificato di registrazione per il marchio comunitario identificato in appresso. I dati ad esso relativi sono stati iscritti nel Registro dei Marchi Comunitari.

**OHIM – OFFICE FOR HARMONIZATION IN THE
INTERNAL MARKET
TRADE MARKS AND DESIGNS**

CERTIFICATE OF REGISTRATION

This Certificate of Registration is hereby issued for the Community Trade Mark identified below. The corresponding entries have been recorded in the Register of Community Trade Marks.

TRIMEX

Il Presidente / The President

António Campinos



210	009721846		
220	09/02/2011		
400	24/03/2011		
151	01/07/2011		
450	05/07/2011		
186	09/02/2021		
541	TRIMEX		
521	0		
732	GRUPPO ZILIO S.P.A. Via Santa Maria in Colle, 13 31044 MONTEBELLUNA (TV) IT		Matières filtrantes; Charbon pour filtres; Matériaux céramiques en particules utilisés dans des préparations de filtrage. FR - 40 Services de régénération de filtres et de matériaux filtrants. IT - 1 Materiali filtranti, carbone per filtri, materiali ceramici in particelle per filtri. IT - 40 Servizi di rigenerazione di filtri e materiali filtranti. LV - 1 Filtrēšanas materiāli; Oglekļa filtri; Kramikas materiāli, kas galvenokārt, paredzēti filtriem. LV - 40 Filtru un filtrējošo materiālu atjaunošanas (reģenerēšanas) pakalpojumi. LT - 1 Filtruojančios medžiagos; Anglis (filtrų); Filtravimo terpės (susmulkintos keraminės medžiagos -ėms). LT - 40 Filtrų ir filtravimo medžiagų atnaujinimo paslaugos. HU - 1 Szűrő anyagok; Szén szűrőként; Kerámiai anyagok szemcsés formában, szűrőkhöz. HU - 40 Szűrők és szűrőanyagok regenerációs szolgáltatásai. MT - 1 Materjali għall-użu bħala filtri; Karbonju għall-filtri; Materjali taċ-ċeramika forma ta' frak għall-filtri. MT - 40 Servizzi ta' rigenerazzjoni ta' filtri u materjali filtranti. NL - 1 Filtermateriaal; Filterkool; Keramische materialen, in de vorm van deeltjes, voor gebruik als filtermateriaal. NL - 40 Regeneratie van filters en filtermateriaal. PL - 1 Materiały filtracyjne; Węgiel do filtrów; Materiały ceramiczne zwłaszcza do filtrów. PL - 40 Usługi regeneracji filtrów i materiałów filtracyjnych. PT - 1 Matérias filtrantes; Carvão para filtros; Materiais cerâmicos em partículas para utilizar como produtos de filtragem. PT - 40 Serviços de regeneração de filtros e matérias filtrantes. RO - 1 Materiale de filtrare; Carbon pentru filtre; Materiale din ceramica sub forma de particule, folosite ca mijloace de filtrare. RO - 40 Servicii de regenerare a filtrelor și materiale de filtrare. SK - 1 Filtráčné materiály; Uhlík do filtrov; Keramické materiály vo forme častic, na použitie ako prostriedky na filtrovanie. SK - 40 Služby spojené s regeneráciou filtrov a filtračných materiálov. SL - 1 Filtrirni materiali; Oglje za filtre; Keramični materiali v obliki delcev, za uporabo kot filterni medij. SL - 40 Storitve regeneriranja filtrov in filtrirnih materialov. FI - 1 Suodatusaineet; Hiili suodattimiin; Keraaminen aines hiukkassuodatukseen.
740	Piovesana, Paolo Via F. Baracca, 5/A 30173 Venezia-Mestre IT		
270	IT EN		
511	BG - 1 Материали за филтриране; Въглен за филтри; Керамични материали в определена форма за употреба като филтриращи средства. BG - 40 Услуги за възстановяване на филтри и филтриращи материали. ES - 1 Materiales filtrantes; Carbón para filtros; Materiales cerámicos en partículas para su uso como productos de filtrado. ES - 40 Servicios de regeneración de filtros y materias filtrantes. CS - 1 Filtráční materiály; Filtry (uhlík do-); Filtrační keramické materiály ve formě částic. CS - 40 Regenerace filtrů a filtračních materiálů. DA - 1 Filtreringsmaterialer; Kul til filtre; Keramiske materialer i partikelform til brug som filtreringsmateriale. DA - 40 Regenerering af filtre og filtreringsmateriale. DE - 1 Filtermaterial; Filterkohle; Keramikpartikel als Filtermaterial. DE - 40 Regeneration von Filtern und Filtermaterial. ET - 1 Filtermaterjalid; Aktiivsüsi (filtrite); Purustatud keraamilisest materialist filtermaterjal. ET - 40 Filtrite ja filtermaterjalide regeneerimise teenused. EL - 1 Υλικά διήθησης; Ψνθρακας για φίλτρα; Κεραμικά σωματίδια ως υλικό για φίλτρα. EL - 40 Υπηρεσίες αποκατάστασης φίλτρων και διηθητικών υλικών. EN - 1 Filter material; Carbon for filters; Ceramic materials in particulate form for use as filtering preparations. EN - 40 Regeneration of filters and filter materials. FR - 1		



FI - 40

Suodattimien ja suodatinaineiden kunnostuspalvelut.

SV - 1

Filtrerande material; Filterkol; Keramiska material i kornform för användning som filterpreparat.

SV - 40

Tjänster för regenerering av filter och filtermaterial.

From **TECHNOLOGY**
to the **FACTS**



water treatment plant ARSENIC and VANADIUM

flow rate 260 l/s



water treatment plant

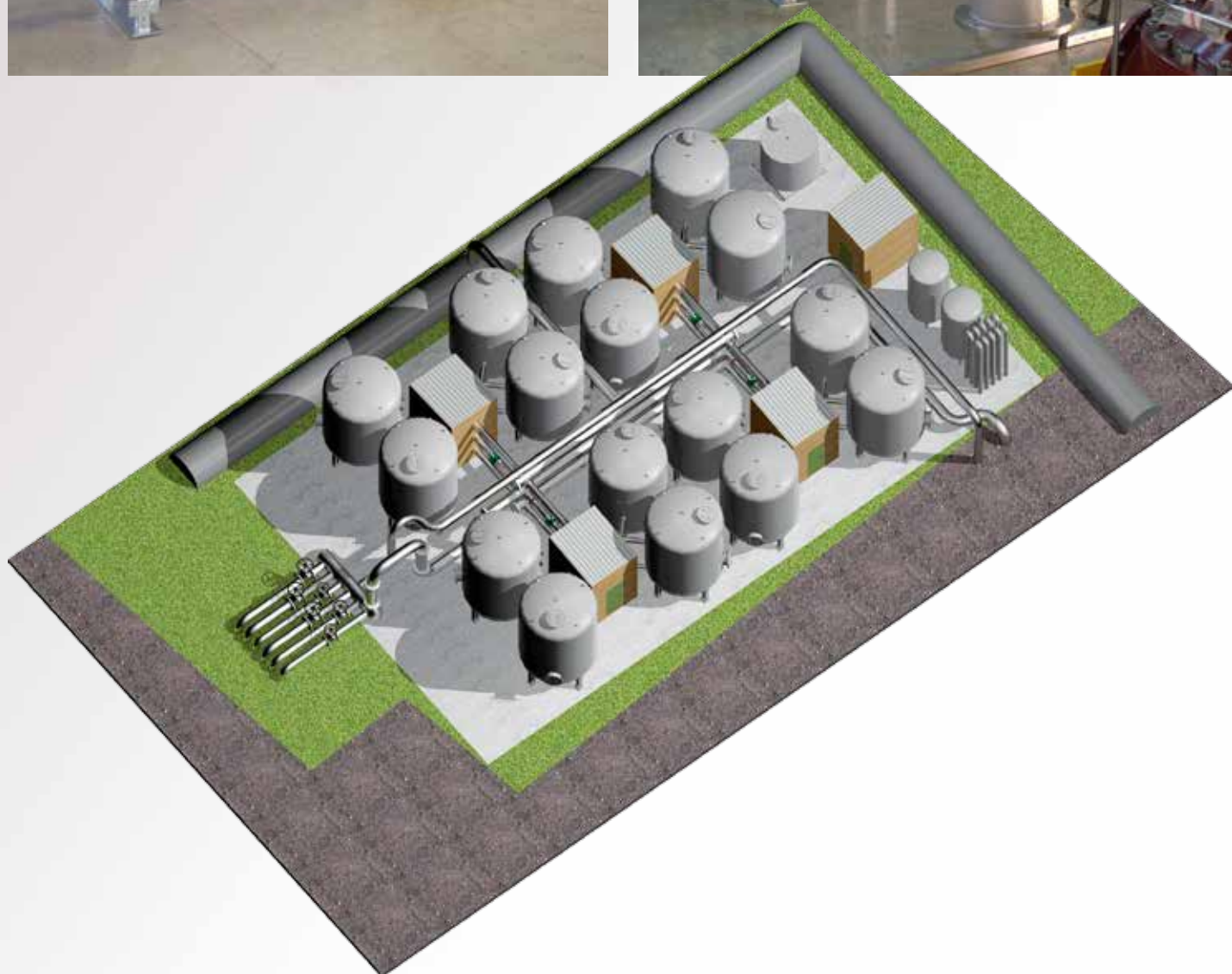
ARSENIC, IRON, MANGANESE, BACTERIA, ALGAE and TURBIDITY

flow rate 10 l/s



water treatment plant ARSENIC and VANADIUM

flow rate 450 l/s



water treatment plant

BORON

flow rate 420 l/s



water treatment plant

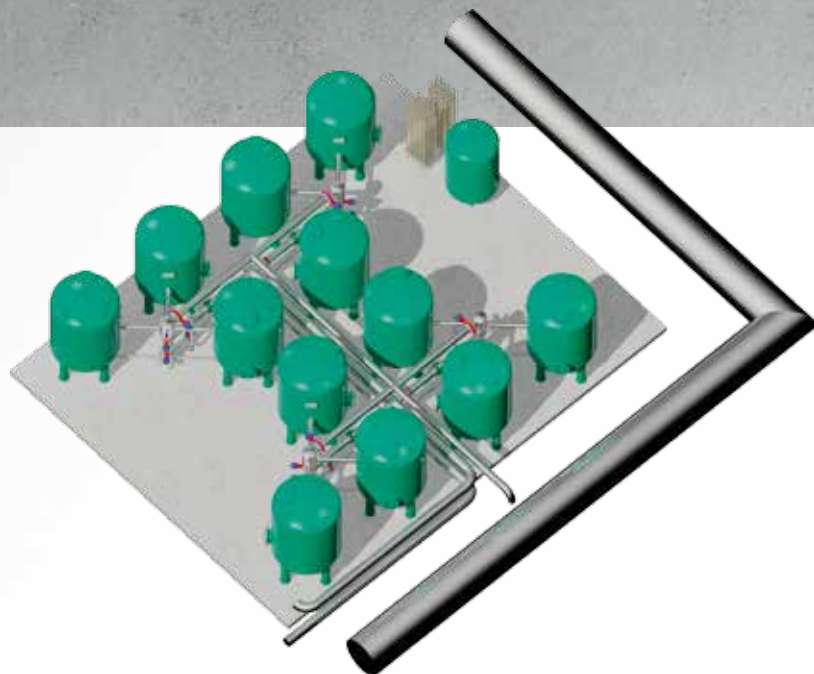
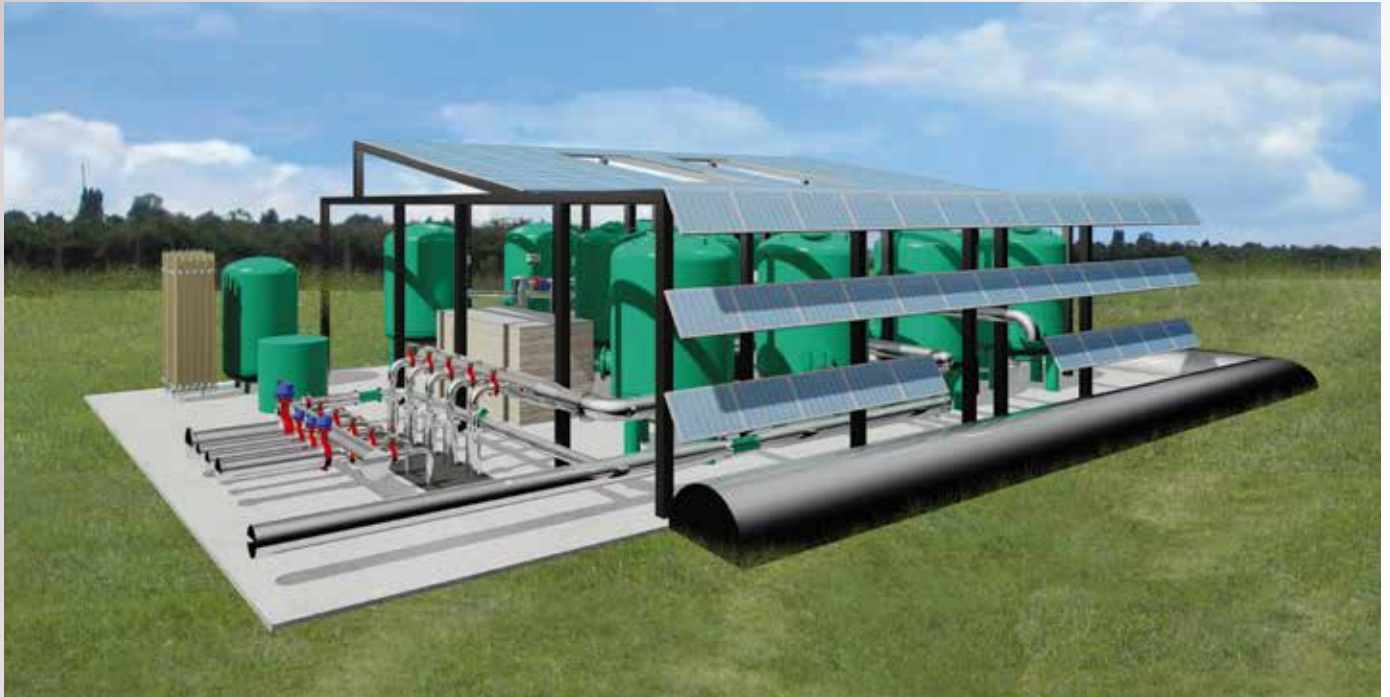
BORON

flow rate 90 l/s



water treatment plant ARSENIC and VANADIUM

flow rate 180 l/s



drinking water treatment plant in Abbadia San Salvatore (Grosseto - Italy)

flow rate 22 l/s



ARSENIC, FLUORIDE, VANADIUM, IRON and MANGANESE, drinking water treatment plant, Velletri (Rome - Italy)

flow rate 60 l/s



IRON and MANGANESE, thermal drinking water treatment plant Pejo (Trento - Italy)

flow rate 20 l/s







GRUPPO
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dal 1959

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