HISTORY OF OUR RESEARCH

Výzkumný Technologický Institut s.r.o
(Research Technology Institute) continues with the work of the Research Institute of Nanotechnology, which was established in 1997 as a research / commercial company active in the protection and regeneration of contaminated water.

Mr. Petr Carvan, the founder and head of research and development has been working on water treatment systems more than 25 years. He started his research on principle of reverse osmosis, but after years there was a demand on lowering the extreme power consumption of RO and rising the quality of water. Next problems were service costs (using chemicals and often membrane changes after clogging) and extreme high volume of retenate (waste water) as a secondary product from filtration.

The main focus of this company is a new method of physical water treatment without chemicals, using Technology of Hybrid Asymmetric Selective Membrane Separation - THASMS. This provides the basis for our wide use of applications - from complete optimization of the commercial processes based on the reuse of water (recycling) through to producing drinking and industrial water. This completely unique process is based on reverse TMC mineralization.

VTI continues in R&D, engineering and manufacturing. For our customers we keep after sales service and we still work on a new projects.

HOW AQ3 MAKES PURE WATER

Purified water is water that is mechanically filtered or processed to be cleaned for consumption.

Distilled water and deionized (DI) water have been the most common forms of purified water, but water can also be purified by other processes including reverse osmosis, carbon filtration, microfiltration, ultrafiltration, ultraviolet oxidation, or electrodialysis.

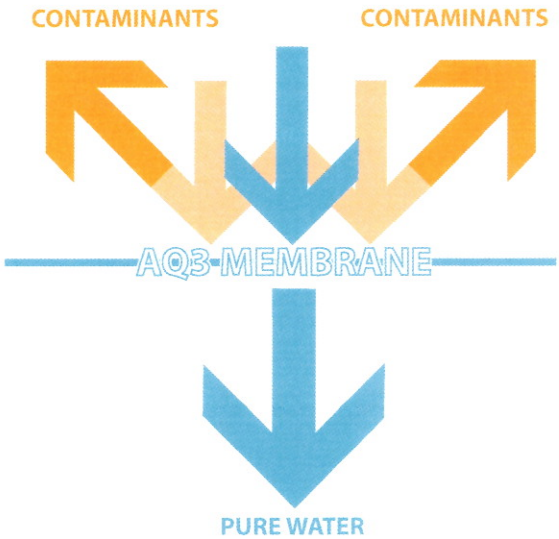
Purified water has many uses, largely in science and engineering laboratories and industries, and is produced in a range of purities. Purified water in colloquial English can also refer to water which has been treated ("rendered potable") to neutralize, but not necessarily remove contaminants considered harmful to humans or animals.

THASMS - AQ3 Technology is able to treat any type of input water. It removes any kind of biological, bacteriological, mineral, gas or toxic contamination. It is able to purify any contaminated water and turn it into clear spring, healthy and healing water. All this happens strictly only by physical processes without any chemicals.

The nanoparticles are designed to attract water and are highly porous, soaking up water like a sponge, while repelling dissolved salts and other impurities.

Impurities including bacteria, organics, parasites, viruses, inorganics and minerals are all larger that the nano tunnels and so these materials are rejected. In previous technologies rejected particulate would stick to the membrane, however with AQ3 the membrane is reluctant to clog.

Since the spirale module is reluctant to clogging, it needs less back flushing, and hence less water is required in the process, so more pure water is produced.



AQ3 TECHNOLOGIES

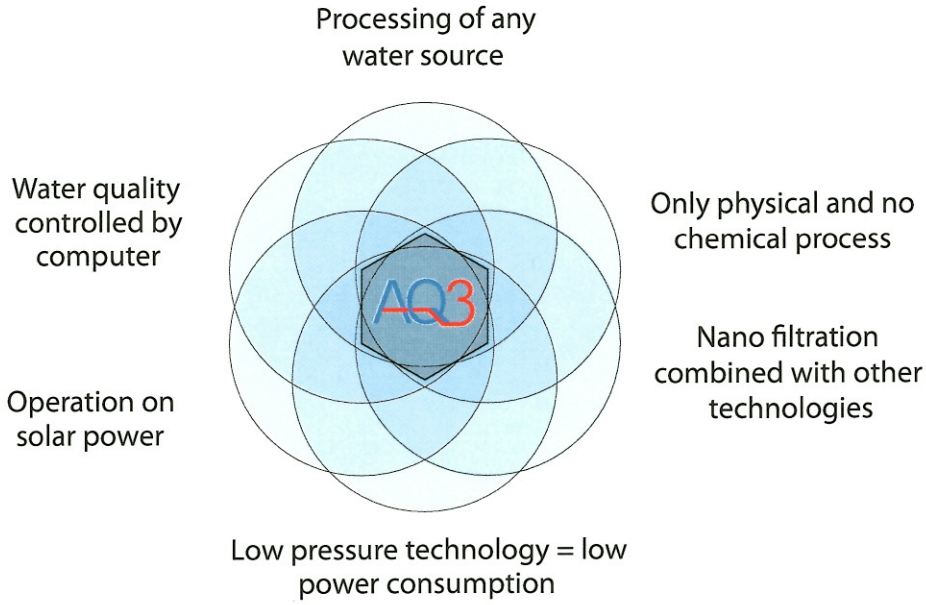
LOW Energy Consumption
The AQ3 Technology is based on nano filtration combined with other technologies. It consumes extremely low amount of energy (0,06 to 0,14 kW per 1000 liters of water).

Electric Grid – NOT NECESSARY ANY MORE
AQ3 Technology devices can be operated anywhere and connected to any source of electrical energy. Solar panels are enough for any kind of device in remote places. Surplus energy is stored in bateries for night operation.

Amazing Purity
Regardless of the source of water hundred percent sterility of water is guaranteed and monitored. The water is sterilized more than ten times by combination of several technologies. They destroy any bacteriological and biological contamination. Ozone is used for final sterilization.

We create water that contains no bacteria (living or dead), undesirable metals, and toxins, biological, gaseous or other pollutants. The devices can also produces a high quality, minerals balanced, vital and healing drinking water of unbeatable quality. AQ3 makes several kinds of perfectly pure, fresh water, which remains fresh in storage tanks at least 120 days without any other treatment.

Low Maintenance Cost
AQ3 Technology has extremely low maintenance cost. Thanks to its unique self-cleaning system (no chemical used!) there is no need to exchange membranes. The device operational and water quality data can be continuously evaluated remotely from anywhere in the planet.



IMPURITIES AQ3 REMOVES

Community waste water :
- Pathogens: giardia lamblia, salmonella, shigella, typhoid, yersinin enterocolitica, viral hepatitis and others
- Non-metallic contaminants: phosphates, nitrogen and others
- Synthetic organic contaminants: pharmaceutical drugs, chlorinated solvents, contraception, hormones, antibiotics hydrocarbons and others

Industrial waste water :
- Metallic contaminants: aluminum, arsenic, barium, cadmium, copper, chromium, iron, lead, lithium, manganese, mercury, molybdenum nickel, silver, uranium, and zinc
- Non-metallic contaminants: acids, ammonia, nitrate, phosphates, boron, chloride, cyanide, fluoride, radium, selenium, sulfates and various radioactive isotopes
- Synthetic organic contaminants: pesticides, chlorinated solvents, hydrocarbons and polychlorinated bi-phenols (PCBs) and others

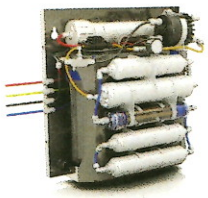
Filthy river :
- Combination of all contaminants: pathogens, metallic contaminants, non-metallic contaminants, synthetic organic contaminants from community, industrial and agricultural waste water

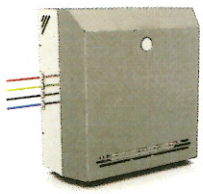
AQ3's TYPES

Residential use:

AQ3 mini Aqua Pure

It can be easily installed in your kitchen. It turns your tap water to high quality water excellent for drinking and cooking. Maximum daily production is 100 liters. No electricity required.



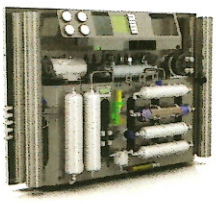


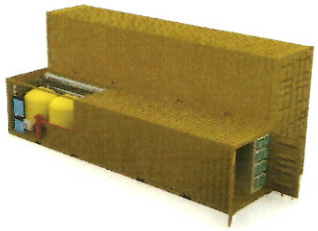
AQ3 midi

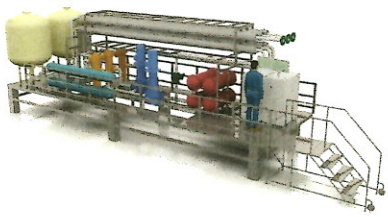
This model is only slightly larger than the smallest AQ3 Mini, but it has considerably higher performance and product quality. AQ3 Midi produces AQ3 Drinking Water and AQ3 Pure Water, which is the best for washing, dishwashers, washing machines, etc. Daily output is about 300 liters. AQ3 Midi is suitable for apartments or small houses.

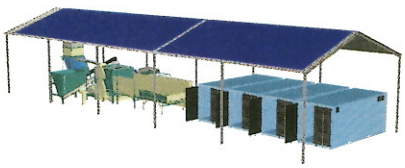
AQ3 home

AQ3 Home is ideal for larger apartments or houses. Sized of small refrigerator it produces AQ3 Drinking Water and AQ3 Pure Water in an amount up to 3,000 liters per day. This device is equipped with the RCS system and all other special features supplied as the standard in this class.









Special applications:

AQ3 mobile

Next version of humanitarian container is trailer which can be towed by car. This type is totally independent to external sources. Solar panels and gas or petrol generator guarantees use anytime and anywhere. It is used in areas affected by environmental disasters and disrupion of infrastructure.

AQ3 Humanitarian is transported to an affected area and connected to a local water source, from where pure and high quality water is produced. Solar panels for independent operation are standard equipment. Daily capacity (20 to 50 cubic meters) depends on the local conditions. AQ3 Humanitarian is designed in 20 feet or 40 feet container.

Industrial:

AQ3 City & AQ3 Village

AQ3 version used for production of AQ3 Pure Water for small agglomerations. There is an option of sewage purification & recycling. High quality of AQ3 Pure Water in the distribution system and significant reduction of total water consumption is achieved. AQ3 Village fits in a 20 feet container. AQ3 City fits in 40 feet containers.

AQ3 Industry

The device produces AQ3 Pure water, which is physically treated and enriched by minerals required by a particular plant. It can significantly reduce the usage of chemical fertilizers. This AQ3 Industry is individually designed for every factory or company purpose.

AQ3 Agricultural

This type was developed for farms to reduce usage of public water and solve the problem with slurry. Our concept is designed to separate sludge to pure sterilized water and solid particles. Pellets for burning and clear water for drinking or rinsing are two products made from sludge. We've created green circle which saves costs at all time.

UNRIVALLED BENEFITS OF AQ3

- High-efficiency water purifying technology
- High capacity can meet global, municipal and industrial recycling needs
- Produces water for any use: demineralized, drinking, or STRUCTURED water with health qualities
- Easy control to increase the mineral contents and oxygen to specially adjusted waters for the pharmacy, food business and industry
- Super-affordable in comparison with traditional solutions because the membrane is less likely to clog, so it needs less pressure to pump the water through the system
- Long life-20 years with regular maintenance
- Electronic monitoring & control
- Works with any power source including solar
- Totally automatic regulation

CERTIFICATES

TÜV certificate

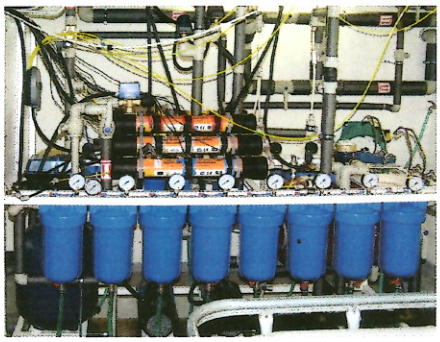
INSPECTION CERTIFICATE

File number 08.807.749

CE certificate

ES Prohlášení o shodě

AQ3 INSTALLATION



CONTACT

Výzkumný Technologický Institut s.r.o
(Research Technology Institute)

Registered office
Na Stahlavce 1555/2
160 00 Prague
Czech Republic
Reg. ID 25456962
VAT ID CZ25456962

Manufacture and research
IMPERA PARK, hall C
Hlavni 828
250 64 Hovorcovice
Prague
Czech Republic

gsm: +420 775 581 655

web: www.vti-cz.com

e-mail: info@vti-cz.com