

Water processing

Mineral water & Bottled water





Your partner for water processing

Bottled or packed water is the most common way of distributing water in most parts of the world. MachinePoint Food Technologies sets up complete water plants, from the process of purifying water for human consumption, to its packaging for easy distribution. We can help you transforming water from different sources into water suitable for human consumption: mineral, purified, and spring water.

MachinePoint Food Technologies also manages all different types of water packaging process, from PET bottles, glass bottles, to carton packaging and many more.

Most beverages and food factories have to develop a parallel water processing plant so that water can be used for the production of beverages and food. Water quality is a high priority in the production of beverages and packaged food as it makes a big difference to the end product.

MachinePoint Food Technologies takes care of the whole project, from the civil engineering and plant design, supplying all the required equipment lines for processing and packaging, to the final commissioning, training and maintaining services.

Sometimes the locations that need to be reached in order to access mineral water can have a complicated access. Our experience in building mineral water processing plants in the most remote locations is of great value for our clients. Thanks to our solid infrastructure, we have made these types of challenging projects possible.

We can distinguish two types of water sources, one, almost pure, coming from a natural spring, and the other, from an external source, needing a deeper and more complex refining. The treatment method will be chosen depending on the type and quality of water that wants to be achieved.

Amongst other technologies, MachinePoint Food Technologies applies the following processes to water treatment:

- Sand filtration
- Micro filtration

- Nano filtration
- Active carbon filtration
- Reverse osmosis
- De-ionisation
- Ultraviolet sterilization
- Distillation
- Ozonation
- Chlorination

International standards for design and quality

Our equipment designs and construction follow the best manufacturing practices and hygienic design principles, achieving strict standards, following EU and international regulations for equipment design and fabrication, including CE-approval and 3-A SSI Certification.

Also our equipment and process design comply with production and energy efficient requirements.

Great quality / price relationship

We have a unique business model where our clients can get a complete production solution with a great price/quality relationship, thanks to our capacity to integrate used machinery into our projects. Supported by our sister company MachinePoint Used Machinery, we can include in our projects reliable and affordable top brand and high quality second hand machinery.

Leadership in innovation

We are aware that keeping ahead with technological innovations is key to being competitive; in order to satisfy our customers' requirements MachinePoint Food Technologies R&D department is always looking for new technologies, developing processes and equipment alternatives.

Our range of brand new equipment includes water filtration system, water storage and reception units.



Defining the right manufacturing process

“A correct definition of the manufacturing process will lead to a competitive advantage. Choose well not only the equipment but the process too.”

Water processing

MachinePoint Food Technologies supplies equipment and process engineering for the processing of natural spring water or an external source such as a river or a lake into a healthy, suitable to human consumption bottled water.

Water demand increases as world population grows bigger. Water is not only a good necessary to human life, it is also used as a basis for many beverage and food manufactured product, and thus has to comply with very high quality standards.

Mineral water

Mineral water usually comes from a natural spring, where it gets naturally drained and charged with minerals salts and oligo elements. Those components allow water to be thirst-quenching for human being, because they comply with organism requirement to retain water. Once it has been filtered to remove the impurities such as algae or small sand grains, our system improves its colour, smell and flavour.

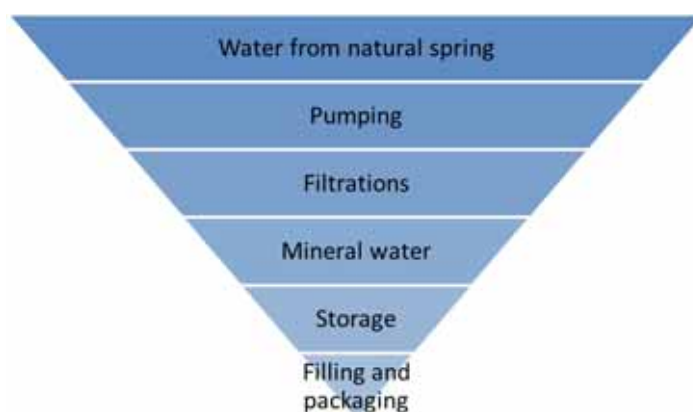
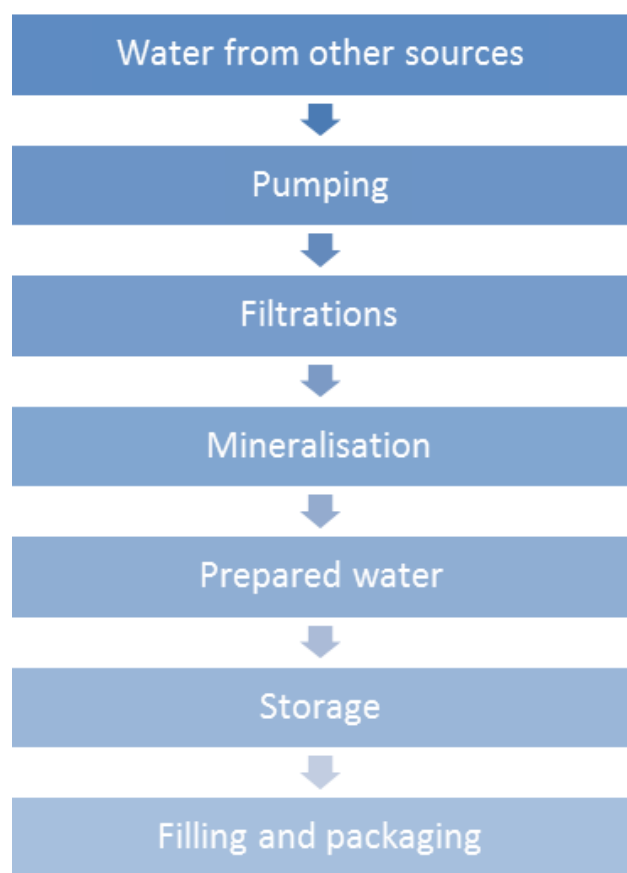
We put the spring water through a micro and nano filtration process to eliminate impurities, and then through an active carbon filtration process to improve its taste, smell and colour.

Following, the water is filled and bottled in the filling and packaging line.

Bottled water (with or without gas)

When there is no natural spring near, water has to be obtained from sources such as lakes, rivers, swamps, etc. An artificial pool has to be created near the spot to allow water to be pumped.

As it comes from a place that can have been soiled by foreign components, this type of water has to get filtered much more thoroughly than the spring water, to remove potential pathogens bacteria and germs. Even if this water has been purified and standardized for human consumption, it would be necessary to add minerals to the water batch after the filtration and chemical treatment in order to fulfil human being requirements.





Water pumping unit



Water flow system

Selecting the right equipment for each process

Depending on the water source and quality, the water treatment process varies. Whether it comes from a natural spring or from a river for instance, it will have to undergo various processes. All our equipment respect very strict hygienic standards and are built with the appropriate materials in order to preserve water purity and quality.

Water reception unit

In a first step, water arrives to the pump station or tanks, where it is pumped up to reception pools before it enters the water process circuit. As this water is not refined at all, it is pre-filtered before pump suction to remove foreign components and ease water transfer.

Our equipment consists of centrifugal pumps with integrated pre-filters to retain and discard the impurities, pipes, speed variators, manometers, electrical and control components.

Water storage tanks

After its reception, water is stored in tanks. MachinePoint Food Technologies supplies water storage systems that can vary from a very basic system that is manually handled, to another completely automatic and combined with the plant CIP system and other production components.

We design and supply a range of storage tanks and silos according with the product characteristics and requirements. Our systems include a wide range of automation levels for the interconnection and management of the tanks, including mix proof valves, PLC controls, weight, temperature, pressure and level controls.

Water filtration

In order to warranty that the water will be free of foreign material and components, it has to be filtrated in several steps to set the required values.

In order to achieve excellent filtration efficiency, MachinePoint Food Technologies is constantly looking for the best process for our clients' plant, customizing our solutions to their requirements. Our treatment units include a wide range of filters types, whether chemical or physical.

Microfiltration

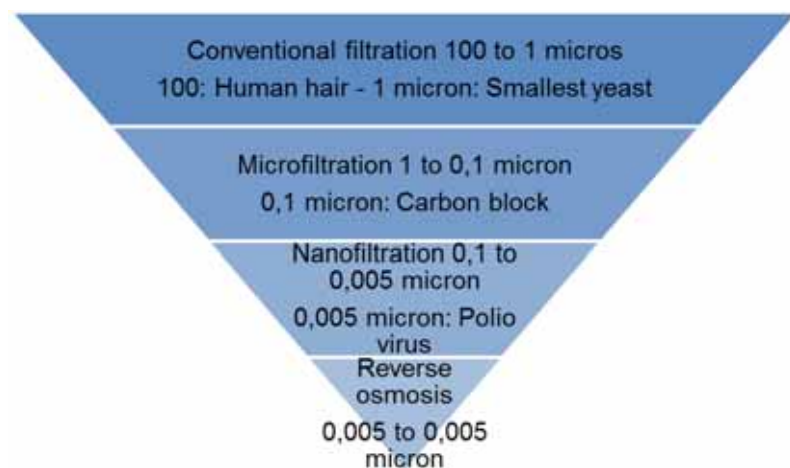
Microfiltration consists in removing water contaminants by filtrating it and passing it through a microporous membrane. Our systems are designed to remove suspended solids down to 0.1 micrometres in size.

Our filters, whether hollow fibbers, flat sheet, tubular, spiral wound, hollow fine fiber or track etched can be in a submerged configuration or a pressure vessel configuration.

Nano-filtration

A step further of microfiltration, nano-filtration is a system where water passes through a nano-porous membrane. Our nano-filtration systems are designed to remove suspended solids down to 0.005 micrometres in size.

Filtration system depending on component sizes





Filtration and demineralization unit



Water pump

Reverse osmosis

Reverse osmosis is a technology that consists in purifying water by using a very thin membrane that will drain out harmful water components, such as lead or bacteria. This method is more thorough than the precedents, as the membrane pores are much smaller. A certain pressure is applied to water on one side of the membrane, retaining impurities on the pressurized side and allowing water to pass through.

Our equipments include a polyester food-use certified water tank, conductivity control, flow meters of raw and treated water, a wide range of membranes, like CTA or TFC, depending on the wanted porosity, morphology, surface properties, mechanical strength and chemical resistance.

Demineralization

Demineralization, also known as water softening, consists in lowering the content of water mineral ions to make it better for human consumption. In order to do so, water passes through a tank that contains a special ion exchanging resin, which retains all the dissolved salts containing impurities.

Two main deionization systems are used, the two-bed deionizer where water is drained of its positive charge in a column and of its negative one in the other, and the mixed-bed deionization that happens in a single vessel.

Our deionizers could be fully or partly automated, including pipes, a microprocessor based control system with conductivity monitor and flow control, pressure regulators, resin vessel and air operating valves.

Ultraviolet treatment

Ultraviolet treatment is a process by which harmful micro-organism like bacteria, viruses, algae and protozoa are neutralized or eliminated. UV is produced artificially by the conversion of electrical energy in a low pressure mercury vapor lamp. UV light penetrates the cell wall of the microorganism, inhibiting further reproduction, thereby rendering them harmless.

Our ultraviolet treatment unit consists of a food-use certified water tank, high voltage electricity source, corrosion resistant chamber, easy to use ultraviolet lamp, quartz sleeves and mechanical wipers.

Ozonation

The ozonation process consists in injecting ozone in tanked water through a pipe, creating insoluble metal oxides. Water therefore needs to be filtered to remove them. Ozone is created by using energy on oxygen whether an electric discharge field or ultraviolet radiation. Drinking water ozonation plants generally consist of a basin for pre-treatment and another one for the main reaction stage. In the first one, water reacts with the gas from the second one. Our ozonation units consist of an ozonator, ozone injector, air dryer, contact tank, automatic-actuation switch.





Water tanks



Water intermediate tank

Remineralization

Once water from an external source has been treated, filtered and demineralized, it lacks the minerals component necessary to human organism, and they are therefore added to water to bring a chemical balance and a nice taste and smell.

Our remineralization units consist of food-quality tanks with pressure gauge, exhaust valve and interior PVC arms.

CIP Systems

CIP (Clean in Place) units come in a wide range of capacities and automation level according with the system design and process requirements.

Our units could include from 3 to 7 tanks depending on whether a recovery cleaning solution is necessary or not, or whether an additional disinfection solution is needed.

They will be designed and customized according to the production line, since the CIP must fit perfectly the line configuration, its production capacity, product characteristics and requirements.

Our CIP system could include a full automated system, that provides continuous monitoring and control of cleaning parameters, including flow rates, chemical concentration, temperatures, cleaning time, and all the variables required for full process validation.

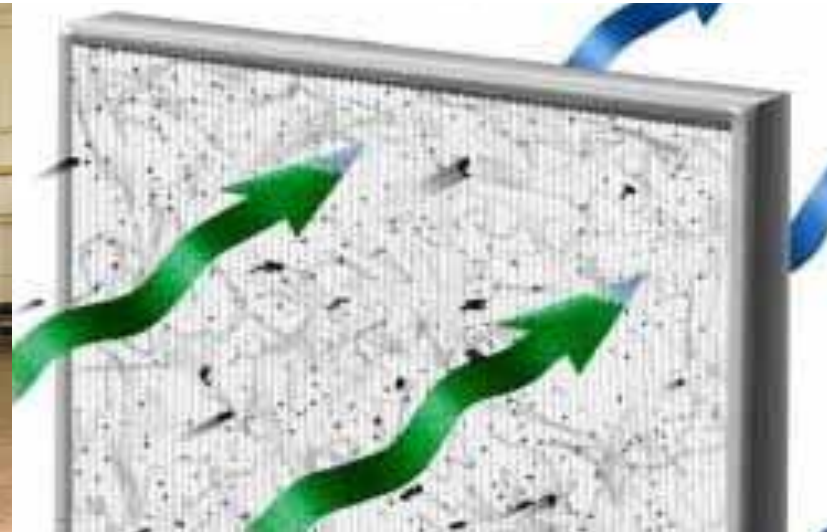
Filling & packaging

MachinePoint Food Technologies has a great knowledge of different package technologies and brands, being able to assess our clients on the best options available on the market upon their needs. We can also supply second hand packaging equipment through our sister company, MachinePoint Used Machinery and integrate them into an existing or new production line. This offer is unique in the market, as it makes top brand packaging and filling equipment available for lower budgets. Also it means, that for urgent projects the waiting time is shorter.

Palletization

According on the client's type and size of packaging, we design safe and reliable integrated solutions for palletization. We dispose of a wide range of automated fixed or mobile palletizers, for packs or boxes, updated with the latest technologies for the good handling, easy to use and safe storage of the final product.





Filtration system



PET filling line

Technology

MachinePoint Food Technologies is constantly looking for new alternatives and developing proposals to bring to our clients the best manufacturing practices and equipment with high efficiency and performance standards.

Our Gemina branded equipment complies with all European standards and the highest quality requirements on the industry. All matters relating to your project will be taken into consideration to ensure to tailor-made solution exactly suited to your needs.

As part of the engineering and automation system configuration we supply:

Project design and layout, equipment selection, drawings and list of material, maintenance and operation manuals.

Installation, configuration and PLC logic programming of the global automated system, touch screens Siemens, electrical panels and cabinets, control wiring, main computer (PC) and control software license.

After-sales services

It is our aim to achieve our customers' satisfaction. For this reason we get involved along every single steps of your project, from the product design till production start, including the after-sales services. We aim at being your technical and support partner for a long time, building a strong business relationship. Our services involve project concept development, production start-up and all required technical support to guaranty the continuation of production. We hope to help you improve your products characteristics by improving your production capacity over the following years.

Our After-sales program includes a permanent service and maintenance and it starts straight after your plant has been set. Our after-sales services include pre-defined maintenance and follow up inspections to ensure a fault-free system, reliable operations, and to help keeping your plant running efficiently for years. A wide range of services are available throughout the entire service life of your plants, all designed to achieve maximum productivity and economic efficiency. We will also sell you spare parts and provide you with future upgrades and requests for your production line.

We organize staff training and coaching.

Easy to use operation and control system

One of the driving forces of our designers is to make the operation and control of our equipment simple and reliable. For this purpose, we follow in our designs ergonomic and functional standards and our equipment are being continuously updated with the last manufacturing developments.

We use high-quality components and equipment from the market top brands, contributing to reach high reliability, high performance and low maintenance in our systems.

In order to bring additional confidence or guaranty, our units are designed, manufactured and pre-tested in our facilities in Spain before being shipped to our clients. We offer on-the-job training for our clients' personnel during the installation, set-up and commissioning.

24/7 Technical assistance to our clients

Our 24/7 technical assistance team is focused on helping our clients when it is most important, when it is needed! Our systems include an automated control system with the possibility to be connected to internet at your request, allowing our technical team to have access to the system via internet, directly from our technical service office and helping to solve the situation. This way most problems can be solved immediately, reducing shutdown time and trouble-solving costs.

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