

WATER MIST FIRE CONTROL AND EXTINGUISHING





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What is water mist?

Water mist is a fire control and extinguishing system. It uses water divided into droplets smaller than 1000 microns, thus cooling the fire, displacing oxygen by the generated steam and attenuating radiant heat.

Both the NFPA 750 and EN14972 standards establish the minimum criteria for the use of water mist and its installation. The designs and installations must be made in accordance with it, taking into account the guidelines and design of the manufacturers, who must have the documents, tests, assembly manuals, use and location of their equipment according to the risks tested.

The effectiveness of water is based on the joint action of 3 different actions:
Cooling by heat absorption, evaporation.
Attenuation of heat transmission, radiation.
Desplazamiento del oxígeno en el foco del fuego, dilución.



CONVENTIONAL SPRINKLER DROP



NEBULIZED WATER DROP A LOW PRESSURE



MICRO DROPLET OF MIST WATER A HIGH PRESSURE **microaqua**



microaqua



Water drop

Traditionally in low pressure systems, sprinklers work in such a way that they soak the burning surfaces.

They discharge a large amount of water that gradually puts out the fire by soaking the burning materials and surroundings of the fire.

Unfortunately, these systems can cause significant collateral damage, even greater than the damage that the fire itself may have caused.

microaqua microdroplet



The microaqua mist water system produces micro drops that represent the most efficient way to fight fires.

When the microaqua system is activated, it instantly attacks the fire with high pressure water mist that penetrates the flame.

The enclosure cools quickly without damaging the materials to be protected.

With a small amount of water the fire is smothered before it spreads and causes major damage.

What is microaqua ?

The high pressure **microaqua** system has been developed according to the NFPA 750 standard.

It comprises a set of equipment that provide complete solutions to the needs of the market.

The **microaqua** system is made up of:

- Extinguishing detection and control control unit certified EN12094-1.

- Different open and closed diffusers that provide solutions to the different risks and classes of fire.

- Nozzles that are mounted on the heads, with a variety of flow rates and drop sizes.

- Pumping equipment, equipped for different flows.

- Deposits for water reserve.

- High pressure cylinders.

- Directional valves.

- Accessories.

Security

The Aguilera Group **microaqua** system offers security in three fundamental aspects:

Safety for personnel: In the event that an accidental discharge occurs for any reason, **microaqua** offers total safety. In addition to being harmless, its ability to decant fumes drastically eliminates the possibility of poisoning people and contamination of equipment.

Safety for equipment: **microaqua** uses a very small amount of water, so it does not cause any damage to electronic equipment.

Safety for the environment: The **microaqua** system only uses water and nitrogen, two components that pose no risk to the environment.

Advantages

- Economics of the extinguishing agent.

- Cause minimal damage to the protected risk.

- 100% ecological.

- Safety for exposed personnel and protected equipment.

- Drastic reduction of the temperature of the protected risk.

- Effective for liquid, flammable and deep fires.

- Control of fumes and toxic gases.

- It does not need 100% sealing of the enclosure.

- Ease of recharging and maintenance.



personal protection



environmental protection



asset protection

microaqua

Closed diffusers



Made of AISI 304 stainless steel, they are equipped with a fuse bulb, which breaks at a preset temperature and opens the diffuser automatically. This diffuser is suitable for wet or preaction systems.

The flow rate of the diffusers is set according to the nozzle model and their number, being able to select the flow rate from 0.060 L/min to 36 L/min with a pressure of 120 bars.

Open diffusers



Manufactured in AISI 304 stainless steel. They are installed in dry pipes, where it is necessary to install a system that detects the fire and controls the start-up of the electric pumps or the firing of the bottles, depending on whether one or the other system is installed.

In open diffusers, discharge occurs directly when the water reaches them. The flow rate of the diffusers depends on the nozzle model and their number, being able to select the flow rate from 0.060 L/min to 36 L/min with a pressure of 120 bars.

Battery of bottles



Coils made up of bottles made of AISI 316 stainless steel with welding, for a working pressure of 40 bars.

Composed of bottles filled with water at atmospheric pressure, equipped with a valve for nitrogen inlet and water outlet, and bottles charged with nitrogen (N₂) at 200 bar. The system is equipped with a main valve equipped with an electric solenoid for automatic triggering, a lever for manual triggering, a pressure gauge, a transducer, a hose and other accessories.

Assembled in a metal frame with double hardware for fixing the bottles, discharge manifold with connection thread to the installation and discharge hoses.

at a glance

Pumping groups

Equipment designed to satisfy a wide range of possibilities, from a flow rate of 11 liters per minute to any other required by the risk to be protected. Assembled in a modular way, with one or several pumps, on a universal baseplate, they can be used both in wet pipe installations and in dry pipe installations.

They are made up of: volumetric piston electric pumps with a flow rate of 11, 25 or 40 litres/minute, an electrical control and maneuvering panel, a flow regulating valve, a safety valve, a non-return valve, an impulsion cut-off valve, a tests, hoses, manifold and instrumentation.

The control and maneuver panel has a programmable automaton and pressure measurement instruments, which allow the pumps to start progressively, adjusting the demand for each risk, thus avoiding unnecessary water and energy consumption. The system is fed by direct suction in groups of up to 3 pumps and by means of an auxiliary overpressure pump, mounted on the same baseplate, for larger groups.

The wet pipe equipment is complemented by a jockey pump with a flow rate of 2.6 L/min, regulated at a pressure of 40 bars.



Storage tanks

Water storage and supply tanks for the pumping groups, made up of: tank, mechanical float valve to control tank filling, impurity filter, minimum level switch, ball valve with connector, drain valve installed in the lower part of the tank for maintenance, closing cover with breather and connection hose to the pump.

Available in several versions: polyethylene from 500 to 1,000 L, fiberglass reinforced polyester (FRP) from 300 to 15,000 L and stainless steel from 200 to 2,000 L.



Directional valves

Normally closed high pressure directional valves, made up of: PN400 stainless steel ball valve, pneumatic piston, manual opening lever, electric release solenoid for automatic opening.



Applications



Museums

Museums safeguard, preserve and disseminate cultural heritage. When a loss or destruction of any object occurs within a museum, it is not only a loss for the museum, but also for the community.

The **microaqua** water mist system is the safest option for fire protection in museums. **microaqua** does not cause damage to exposed materials or to personnel inside the enclosure.



Hotels

A hotel has many peculiarities, not only due to the number of personnel that converge in it during the 24 hours (guests, staff, conference and symposium guests, etc.), but also due to the number of rooms, stairs, corridors, parking, kitchens and warehouses.

microaqua is the best option to control and extinguish a fire in a hotel since neither the staff, nor the clients nor the goods that are there will be in any danger.



microaqua

The possibilities of applying water mist in the control or extinction of fires are very wide, being able to recommend its use in practically all possible risks.

The design and calculation of the system entails a detailed study of the risk and all its variables: type of risk, fire load, compartmentalization, ventilation, fuel situation, total application, local application, etc.

The result of the study will determine the types and location of the diffusers, flow of each diffuser, total flow, water reserve, etc.



Tunnels

The first few minutes of a tunnel fire are decisive. Controlling and extinguishing the fire is essential, but it is a priority that the emergency teams can access to save the lives that are in danger.

Thanks to the **microaqua** system, the fire in a tunnel is controlled, the temperature is lowered and the emergency teams can carry out their work to avoid major catastrophes.

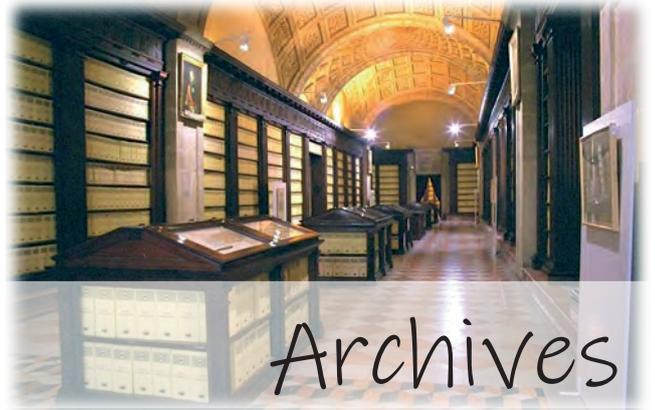
True security for



CPD

Today, Cloud Computing is the trend to follow, Data Processing Centers are of vital importance for companies and organizations to achieve their business goals. The security of the data is important, but the security of where the data is stored is even greater.

The **microaqua** water mist system does not damage the hardware where valuable data is stored, making it the best alternative for fire protection.



Archives

Archives are a very important risk to protect, because if the stored documents are affected by a fire, its consequences are very important in the short, medium and long term. For example, the loss of hospital files translates into consequences such as the cancellation and delays of surgical interventions, repetition of medical tests (some of high economic value), loss of information, etc.

The **microaqua** system prevents all documents from being lost, as we must remember that the system's microdroplets do not get wet.



Kitchens

Industrial kitchens have a high risk when it comes to a fire. The presence of flammable oils and fats with fire and heat make them the perfect place to start a fire.

The **microaqua** system does not leave any type of residue when it comes to extinguishing the fire, so the kitchen can continue working normally.



Hospitals

Hospitals are a risk to which greater attention must be paid. Its main component is made up of human beings, most of whom cannot be evacuated or moved as quickly as it takes to get them away from the danger of a fire.

The use of extinguishing elements that are difficult to manipulate for a patient, or extinction by gaseous agents, most of which are dangerous to health, make **microaqua** the best option for fire control, due to its safety and rapid extinction.

property and people

Our commitment: services and guarantees



Projects

The Aguilera Group offers its collaboration to engineering companies in fire detection, control and extinction projects, advising on the systems and coverage for each building. The projects department carries out the design and dimensioning of the system, the hydraulic calculations, the calibration of the diffusers and the installation isometric, advising on the effectiveness of the equipment in each risk and considering the operability in the maneuvers.



Training

Aware that we all want to know and control what we do, regardless of the technical support we provide to the installations that run with our products, the Aguilera Group offers training courses on the operation of our equipment, its installation and programming.



Personal attention

At the Aguilera Group, each client is important. We are aware that not all of us have the same needs. For this reason, our team of professionals provides personal attention tailored to your requirements.



Maintenance

The Aguilera Group is committed to guaranteeing repair services, reprogramming and supply of original spare parts after the warranty period.



Technical service

With the aim of guaranteeing the proper functioning of the facilities, the Aguilera Group's technical department carries out the operation tests and commissioning of the equipment, in addition to collaborating with the installer in all phases of the work. Once the system is installed with the adequate water and electricity supply and the hydraulic test having been previously carried out, the Aguilera Group's technical personnel carry out the operation test and start-up of the equipment.



Equipment Warranty

The Aguilera Group guarantees the proper functioning of its equipment for 2 years from the date of delivery; We are responsible for the replacement or repair of those in which anomalies or manufacturing defects are observed and are delivered to our factory in Madrid.



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