

# Thermohydraulic Applications



Water Treatment  
Division

**Heating Circuits**  
**Air Conditioning Systems**  
**Domestic Hot Water**



## Introduction

All thermohydraulic installations (heating systems, plumbing, air conditioning, solar heating and sanitary water systems) for domestic and industrial uses or for large users such as hotels and hospitals, consist of circuits in which, the heating or cooling fluid is the water.

The water, for its chemical and physical characteristics (dissolved solids, hardness, pH, dissolved oxygen, etc.) and the effect of the temperature reached inside the heating systems, can cause, along the circuit, the formation of calcareous deposits and incrustations, corrosion phenomena and, sometimes, also the formation of silt and biofilm.

The effects that may ensue ranging from drastic reduction in the energy efficiency of the systems to drilling pipe in heat exchangers and radiators, to more severe phenomena such as the development of pathogenic bacterial flora (**Legionella Pneumophila**).

It should also be emphasized that the energy efficiency of thermohydraulic systems plays a key role in environmental protection both in terms of quantity and quality of emissions that of energy consumption, aspect also contemplated by the specific rules of the sector and by current legislation (**DPR 59/2009**) which requires **the use of chemical products for the conditioning treatment** of the feed water of heating systems and domestic hot water plants for which refer to the **technical standards UNI-CTI 8065**.

The standard UNI-CTI 8065 establishes that the feed waters of heating systems for civil uses should be treated with conditioning chemicals by equipment and systems managed and monitored by qualified personnel; more precisely, the rule states that the maintenance should be carried out in accordance with the instructions given in the use and maintenance manual of the system and that, for all installations, should be provided for a chemical treatment.

From the abovementioned technical standards and laws result, therefore, of the obligations for installers and maintainers of the plants which must provide, respectively, to install and maintain appropriate water treatment systems aimed at preventing scaling, corrosion and eventual formation of biofilm; therefore **AQUOS**, based on its experience in the field of water treatment, has created a complete line of products, described below, for the chemical conditioning of water in the thermohydraulic systems in order to optimize the performance, ensure the safety and service life, protect the health and safety of users and help protect the environment.

## Washing, descaling and protection of the heating circuits



### SANITIZER DETERGENT

#### Thermo LC

Liquid product, slightly alkaline, with detergent and sanitizing action, specifically for the removal of oxides, silt and sediment from the circuits of heating systems for civil use; in addition to, since it contains effective biocidal agents, allows the sanitizing of circuit freeing them from algae and bacteria. Due to its chemical composition, the product is compatible with all types of metals, including copper, iron, aluminum and its alloys.



### FAST DESCALING

#### Aquasol Red

Acid descaler inhibited specific for the rapid removal of residues and limestone and ferrous deposits from internal and external surfaces of pipes, boilers, heat exchangers, coils, tubs, pumps, domestic heating circuits, and so on. Its triple chemical action of disaggregating, solvent and sequestering nature allows you to restore the heat exchange. It is applicable in the circuits of stainless steel for contact times of no more than 1 hour. Avoid contact with mild metals.



### DESCALING FOR MILD METALS

#### Hydrosafe HP 600

Liquid acid descaling for the removal of limestone and inorganic deposits from boilers, heat exchangers and circuits of domestic heating systems in general. For its chemical characteristics the use of the product requires contact times greater than the descaler AQUASOL RED, but **has a high safety of use**, since it is also compatible with soft metals such as aluminum, zinc and their alloys for maximum recirculation times of one hour.

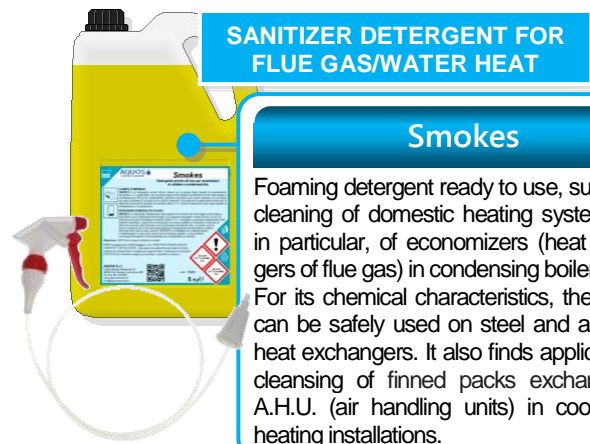




### ANTICORROSION PROTECTIVE

#### Thermo LP

Antiscaling, dispersant and anticorrosive liquid product for the prevention of fouling and corrosion in the heating circuits. Contains a complete system of corrosion inhibitors that allows its use in all types of thermal circuits for temperatures ranging from 0 to 100 °C. The product is also suitable for the conditioning of the cooling circuits of industrial type.



### SANITIZER DETERGENT FOR FLUE GAS/WATER HEAT

#### Smokes

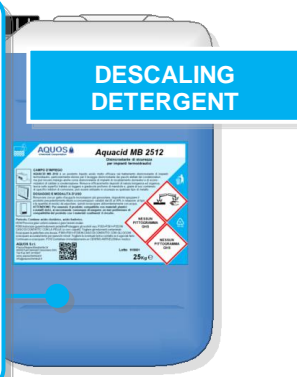
Foaming detergent ready to use, suitable for cleaning of domestic heating systems and, in particular, of economizers (heat exchangers of flue gas) in condensing boilers. For its chemical characteristics, the product can be safely used on steel and aluminum heat exchangers. It also finds application for cleansing of finned packs exchangers of A.H.U. (air handling units) in cooling and heating installations.

## Cleaning, descaling and sanitizing of air conditioning systems

#### Aquacid MB 2512

Descaling product particularly suitable for the cleaning of the finned packs of air conditioners, but also suitable for descaling of domestic heating systems and economizers of condensing boilers.

**Thanks to its content of specific corrosion inhibitors, it can be used safely on any type of metal.**



### DESCALING DETERGENT

#### Saniclean AC 300

Sanitizing detergent for cleaning and sanitizing of the finned packs and filters present in air conditioning and cooling systems. Sanitizes and deodorizes the air and can be used as an effective adjuvant in the hygienic treatment against Legionella Pneumophila. **For its chemical-physical characteristics it is compatible well with steel and plastic materials, but even with light metals such as aluminum and copper.**



### SANITIZER DETERGENT

## Antiscalant, anticorrosive and sanitizing treatment of domestic hot waters



### DESCALING ANTICORROSIVE / SANITIZERS

#### Aquosil 5325 – Aquosil 5325/C

Liquid product for the antiscaling and anti-corrosive treatment of circuits for water intended for domestic and/or industrial uses. It effectively prevents fouling and corrosion in the circuits and in sanitary water systems (pipes, steam generators, heat exchangers, etc.) increasing their performance and service life. The 5325/C version of the product also acts as a sanitizer due to the presence of active chlorine-based sanitizing agents.

**The product is compliant with Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption.**



### DESCALING ANTICORROSIVE

#### Aquotreat 2881

Mixture of polyphosphates for food use with antiscaling and anticorrosive action for drinking waters circuits and hot water generators for sanitary uses.

It prevents the formation and growth of calcium carbonate crystals which tend to form due to the temperature and determines a filtering action on the internal surfaces of the circuit which prevents corrosion. The components of the product are compliant with Reg. No. 21 FDA CFR par. 182.6760 "SUBSTANCES GENERALLY RECOGNIZED AS SAFE", therefore the product is suitable for use in the food or pharmaceutical industries.



### CHLOROACTIVE SANITIZER

#### Biosan 500 SW

Solution based on 5% stabilized electrolytic chlorine which is used for sanitizing treatment of water intended for human consumption (drinking water and domestic hot water).

**Its active ingredients are effective against Legionella Pneumophila and are included among those approved by the FDA for sanitizing treatment of drinking water.**

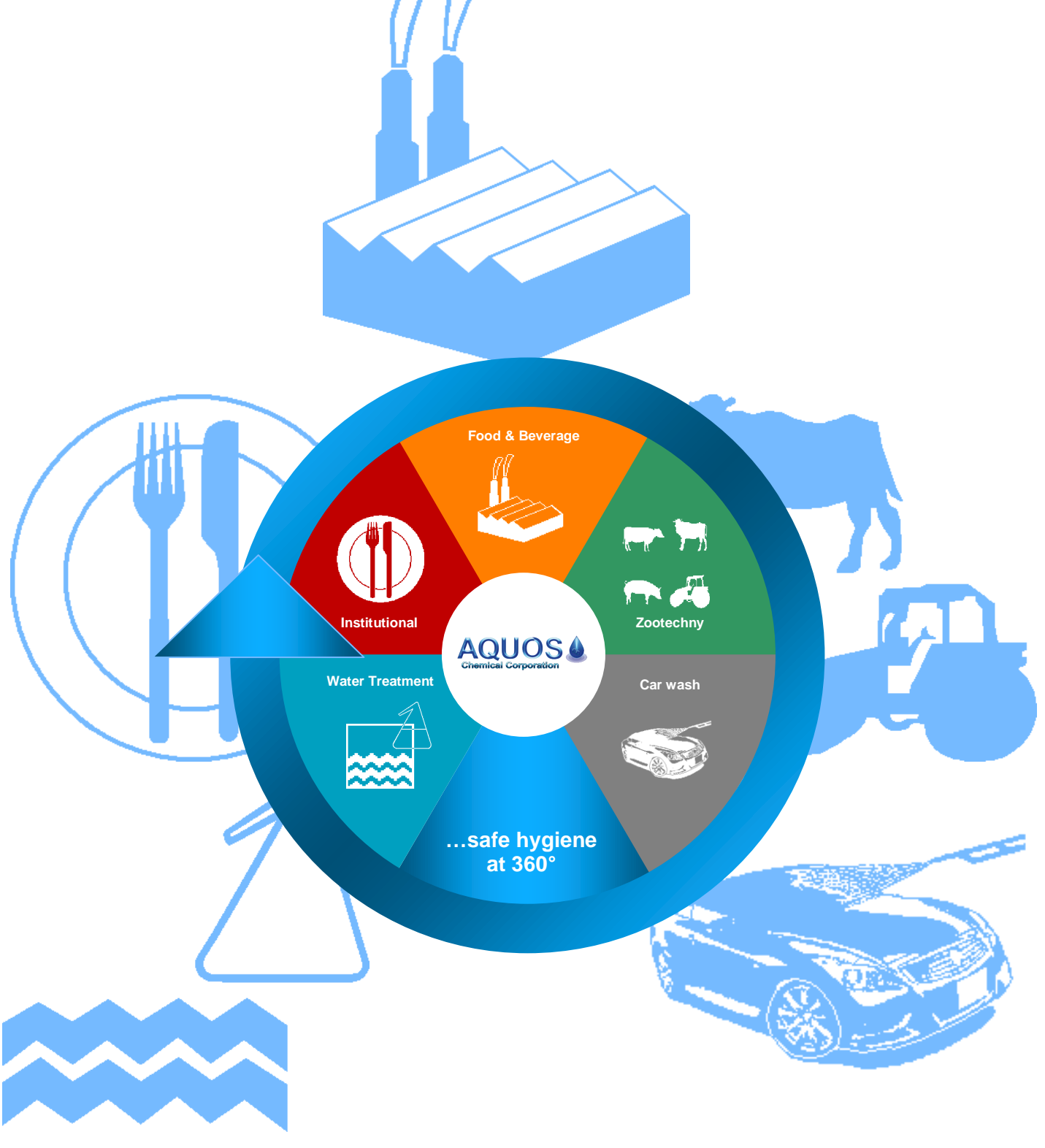


### CHLOROACTIVE SANITIZER

#### Biosan 1500 SW

Solution of 15% electrolytic chlorine that is used for sanitizing treatment of water intended for human consumption (drinking water and domestic hot water).

The product is **formulated in accordance with the UNI EN 901** (chemicals used for treatment of water intended for human consumption) and is **active against Legionella Pneumophila.**



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