

# aquagroup

Aktiengesellschaft

## FOOD PROCESSING INDUSTRY



*“ECA Solutions combats innovatively and efficiently.”*  
We are providing the best quality products and technical solutions.

[www.aquagroup.com](http://www.aquagroup.com)



# To Make Meat Processing Company, Seafood Processing Company, Fruit & Vegetable Processing Company, Ice Making Company ,Bakery, Slaughterhouse, Sausages Processing Company and Meat Packing Plants A Safer Place.

## Applications of ECA System and ECA Solutions:

- Drinking Water Treatment & Sanitation.
- Portable and Process Water Treatment & Sanitation.
- Surface Cleaning & Disinfection.
  - Food Microbial Decontamination.
    - Seafood
    - Fruit And Vegetables
    - Carcass
- Tank Cleaning & Disinfection.
- Pipeline and Water System Flushing.
- Fogging to improve Air Quality.
- Odor Removing Application.
- Waste Water Sanitation.
- Boiler Water Treatment.
- Overall Environment Improvement of the Area.
- Overall Hygiene Improvement of the Area.

## The Company

'Aquagroup Swiss GmbH Dubai Branch' is a branch of German Company 'Aquagroup AG'. It is a technology based company established with the aim to significantly improve general hygiene conditions. We are specialized in potable water treatment, surface cleaning and disinfection and general hygiene improvement. We have clients of poultry industry, food processing industries, hotel, resort, hospital, school, other organizations . Our concepts can save water and time, reduce energy costs and use of chemicals. Our main goal is to show the customers as many fields of application and potentials Savings as possible while offering customized solutions to tackle wide variety of germ issues. With the Our competent team, With our competent team, a staff of highly trained persons provide the customers with just the right expert for any task throughout the entire process of water treatment, surface disinfection, microbial decontamination, environment improvement & farm biosecurity.

**The aim:** To retain our common goal in making water, food, surface and environment safer.



## Vision:

- We are preferred partner of Food Processing Industry, Poultry industry, Livestock industry, Hotel industry, Hospital, Clinic, School, Mall, Tower, Cooling tower industry, Cruise ship industry and other organizations.
- We aim to be No. 1 in the fight against germs.

## Mission:

- We improve hygiene where water is used.
- Our solutions can save water and time, reduce energy costs and the use of hazardous chemicals in certain applications.
- We improve environment and Life.

Neglecting the issue of water risk management can have a severe impact on the health and well-being of personnel. Our company guarantees reliable standards of your water.

In recent years the general public has become increasingly aware of the water contamination, water quality, water safety and potential risk of biofilm harbouring pathogenic microbes. Management of food processing industries dedicated to upholding the highest quality standards cannot afford the massive media exposure, subsequent image loss and drastic financial repercussions that occur after an outbreak of legionella and other microorganisms.

Our company supports you in the creation of your unique experience for you and your end products. This starts with intensive pre-surveys identifying areas of weakness in the current system, covering not only the technical engineering aspects but also the analysis of the source of potential risks. The provision of a concept integrates the our solution into an existing functional system to increase safety. We always guarantee risk mitigation through the permanent elimination of biofilm ensuring high water quality, according to WHO, GSO and other International Drinking Water Standards both globally and locally.

## What is ECA?

ECA Technology means Electro Chemical Activation Technology. Our disinfectant product NADES or NADES 2.0 are Electrochemically Activated (ECA) solutions which are produced through our specially designed devices. A saturated brine solution is passed through a cell and the NaCl is split into chemical streams via electrolysis.

The active agents in our products are electrolyzed water with high ORP value (Oxidation Reduction Potential) and chemically active agent NaOCl.

## One device – Numerous applications

### Drinking and Process Water Treatment & Sanitation

- Clear germ free water.
- Risk mitigation.
- Proven biofilm elimination.
- Fully automatic system.
- Symbiosis of technology and hygiene.
- Post-Installation support.

### Surface Cleaning & Disinfection

- To reduce microbiological load of surfaces.
- To make the surface safe for use.
- To avoid cross contamination.
- Save time, water, human resources and money.
- Work process can be optimized.

### Food Microbial Decontamination

- To reduce microbiological contamination on carcass and egg during washing.
- To increase shelf life of the product.
- To comply with standards, guidelines and legislations.

### Fogging in Processing Areas

- To obliterate airborne spores and bacteria.
- To create cleaner environment of processing areas.
- To neutralize odor and reduce risk of disease.

### Tank Cleaning and Disinfection

- To make tank inside surface safe for use
- To avoid cross contamination to water from tank.
- To reduce microbial load.

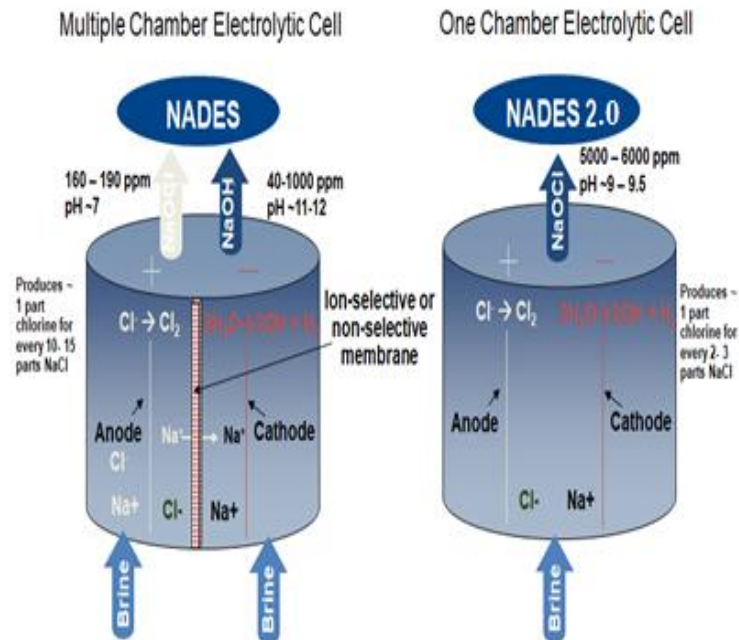
### Pipeline Flushing Application

- To disinfect the pipelines from inside.
- To avoid microbial cross contamination through to the water.

## ECA advantages

The ECA Generator offers the advantages of producing active chlorine out of a harmless Sodium Chloride salt solution and electricity. Both are **easy to handle** and **available worldwide**. This process substantially reduces the risks involved in the distribution, transport, storage and handling of the hazardous active chlorine treatment of process water. Conventionally manufactured NaOCl can produce harmful chlorates during storage.

The **just-in-time** concept of NADES or NADES 2.0 production leaves no time for chlorates building. There is less handling of hazardous goods through the automated processes; this also results in simple operation of the generator's components. The ECA solution NADES or NADES 2.0 are effective against Biofilm and has a high anti-microbiological and anti-viral efficacy.



### Waste Water Treatment & Sanitation

- To make waste water safe and to avoid microbial decontamination.
- To make waste water reusable.

### Odor Removing Application

- To remove odor from organic waste area.
- To improve indoor air quality.

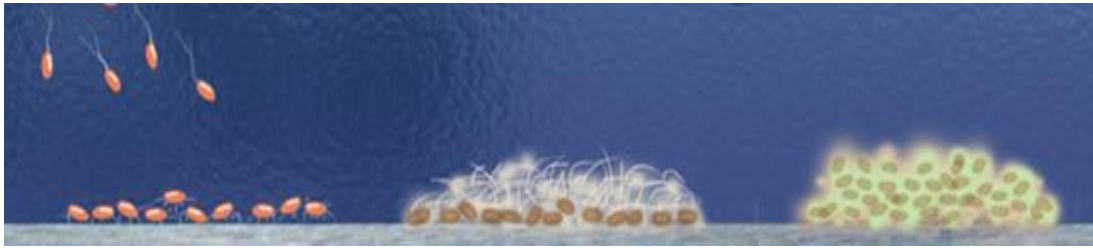
### Boiler Water Treatment

- To maintain boiler water parameters as per international standards and guide lines.



## Health & Safety for the Birds and Personnel

The health and safety for birds, animals and people is of paramount importance. Continuous investments in the design and security of water treatment are made to ensure optimal results. One of the highest risks in water management is that of biofilm.



Free swimming cells alight on a surface and attach

New genes are expressed to synthesize matrix polymers

Cells coordinate by exchanging molecules

## Biofilm Formation

Many different microbes have demonstrated the ability to survive in water distribution systems with some possessing the ability to grow and/or produce biofilm. Primary pathogens survive and protect themselves in it, ultimately becoming part of this biofilm and often displaying more resistance against conventional approaches for example thermal disinfection or traditional chemical solutions. The presence of biofilms plays a significant role in harboring and providing favorable conditions in which *Legionella pneumophila* and *Pseudomonas aeruginosa* may grow and posing a serious health risk. Factors contributing to waterborne outbreaks include; contaminated bunkered water, dead legs and stagnation, cross connections between potable and non-potable water, improper loading procedures, poor design and construction of potable water storage tanks and inadequate disinfection.

## Fighting the biofilm — a hopeless battle?

In cold water < 20 °C *Legionella pneumophila* does not multiply but remains dormant. In countries with hot climates the cold water inlet temperature often exceeds 25 °C, ideal for microbiological growth and biofilm formation. It is a widely known fact that conventional free active chlorine solutions are relatively ineffective in eliminating biofilm.

## Solution — fight the cause not the symptoms

NADES and NADES 2.0, however, is an electrochemically activated NaOCl (ECA) and when used just-in-time does not lose any efficacy. It prevents and/or hinders the growth of microbiological activity in water. A continuous inoculation with NADES and NADES 2.0 disinfects through the chlorination oxidation reaction of RNA/DNA destroying the Extracellular Polymeric Substance's (EPS) of a biofilm. This EPS layer protects the microorganisms present in the biofilm and facilitates the transport of nutrients. Biofilm control is one of the important objectives for ensuring for ensuring that water delivered to the guests is of the highest quality.

## Expertise

LAGOTEC was instructed to cultivate biofilm under real conditions with the objective of achieving a representative prediction regarding the efficacy of NADES and NADES 2.0 in the reduction of thereof.



Before Treatment

After Treatment



Before Treatment

After Treatment

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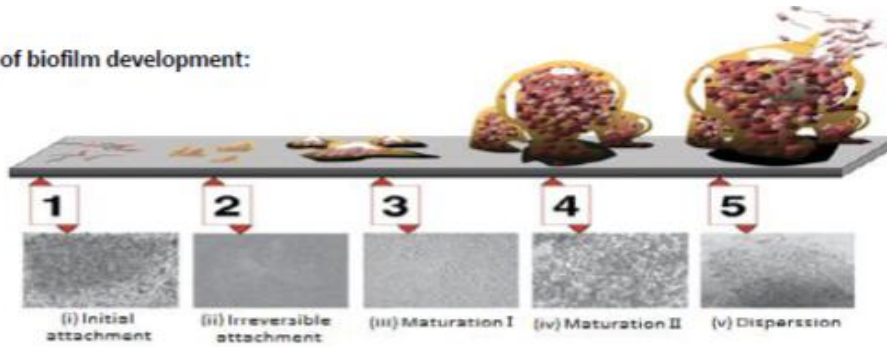
Our ECA Solutions NADES and NADES 2.0 are;

- Environmentally Friendly
- Non- Irritating
- Germ Free
- Quick Acting
- Non-Hazardous
- Non-Toxic

Why to Choose Aquagroup;

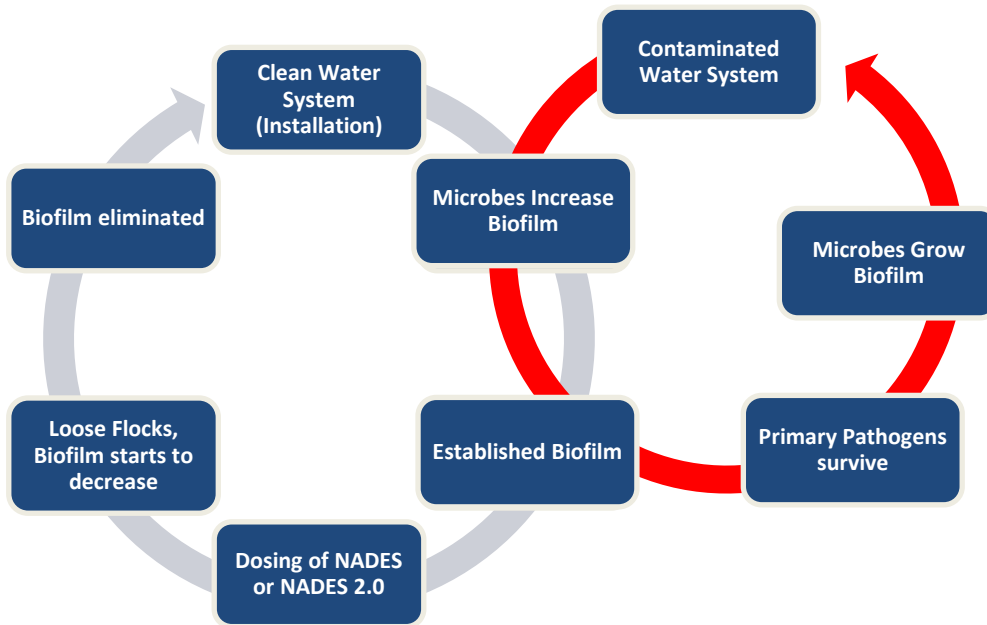
- Flexible Financing
- Pre- Survey
- Installation
- Training
- Commissioning
- Service and Maintenance
- 24/7 Hotline
- Application Consultancy

Five stages of biofilm development:



**Factors Influencing Biofilm Formation:**

- Bio available nutrients.
- Temperature – higher temperature leads to increase biofilm formation and growth.
- Water hardness.
- Applied materials.
- Processing of the material used.



**The ECA Disinfectant effect**

- Germ free and Safe water
- Eliminating Biofilm
- Just-in-time production
- Guaranteed high water quality at all time
- No storage, no transportation nor handling of dangerous chemicals
- Simple operation of component
- Automatic process, reduction of human error

**Our Device:**

- Risk management tool: all parameters are continuously monitored before, during and after the production process.
- User-friendly Touch Screen. (Optional)
- Integrated data longer for recording all parameters.
- Solenoid valve with time control for water and product.
- Service-friendly.
- Economical and environmentally friendly.

**Expert Competency:**

- Interface between hardware provider and Expert knowledge.
- Highly qualified team of chemists, microbiologists and food scientists. Field experience. Support through validation.
- Fully equipped laboratory for internal analysis.





### NON-IRRITATING

#### **ECA Solution is non-irritating**

ECA Solution is non-irritating and is authorized for use as a disinfectant for drinking water or water carrying systems; and at the same time it is completely safe to use and compatible with all materials and its corrosion level in the application concentrations is as low as that of drinking water.

### GERM-FREE

#### **ECA Solution frees from germs**

ECA solution reliably destroys any microorganism and its spores even in the weakest concentration levels. The reason is the unique working mechanism, which takes full effect and does not allow any resistance to build up.

### QUICK-ACTING

#### **ECA Solution is quick acting**

ECA Solution effects in seconds even in the weakest concentration levels and quickly destroys microorganisms.

We remain at your disposal at any time.

Please contact us if you wish to evaluate your specific saving potentials and applications

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