



# ACT ECA System™

Part of Premium Purity™



**ACT.Global**

# ELECTRO-CHEMICALLY Activated ACT ECA System™

Compared to traditional cleaning with products containing toxic chemicals, the ACT ECA System™ is environmentally friendly. ECA means electro-chemically activated. It is a process in which water and salt are run through a cell and create a mild hypochlorous acid (HOCl) and sodium hydroxide (NaOH), also known as caustic soda and lye.



*Picture: sodium hydroxide*

# ELECTRO-CHEMICALLY Activated ACT ECA System™

The core of the process is a diaphragmatic cell. It has been designed using a unique technology to effectively deliver ECA solutions using salt.

A diaphragm cell separates the water and salt into an **anolyte (HOCl)** and a **catholyte (NaOH)** solution. These are generated at the anode and cathode chambers of the cell, respectively, preventing the two streams from mixing and reacting to form a unique hypochlorous acid solution.

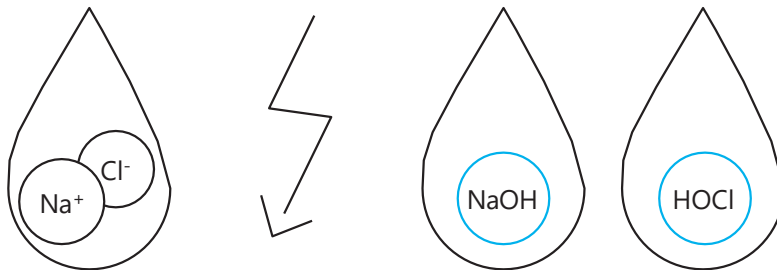


Figure 1: Illustration of the activation process

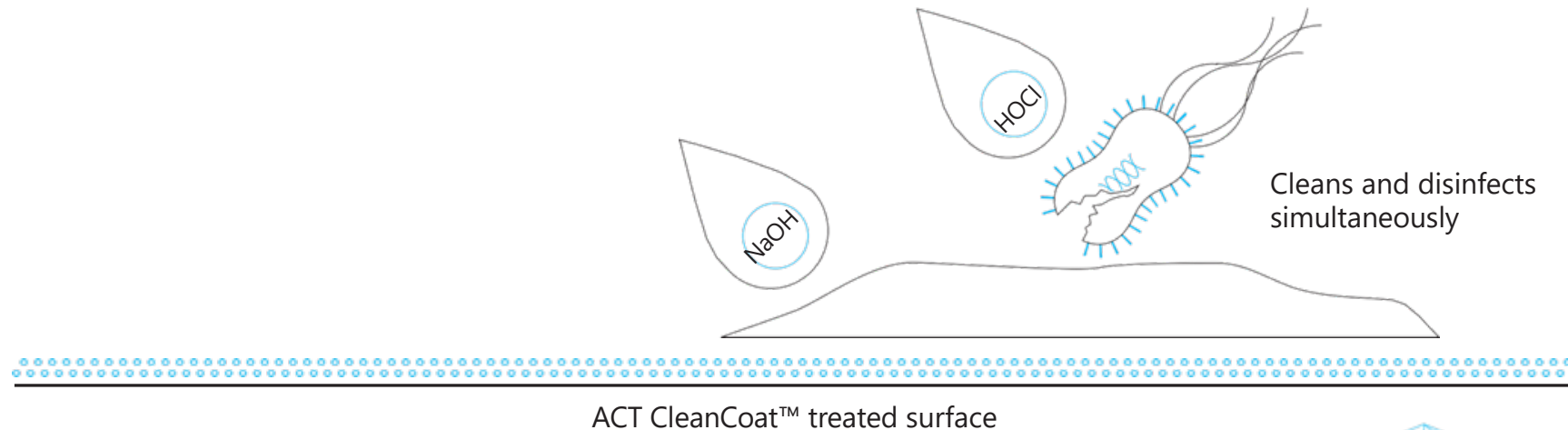
# CLEANING and Microbial Agents

## ACT ECA System™

The active components in ACT ECA Water are:

- **NaOH (Sodium hydroxide):** an alkali compound which easily dissolves in water
- **HOCl (Hypochlorous acid):** a weak acid

NaOH acts as a detergent, and HOCl acts as a disinfectant.



# HOCl – the Anti-Microbial Agent

## ACT ECA System™

**Hypochlorous acid (HOCl)** is a weak acid with a high oxidative potential. HOCl does not have any charge and is thereby able to penetrate microbial cell walls – making it an effective disinfectant against bacteria, viruses, algae, yeasts, and airborne mold spores.

HOCl decomposes and inhibits growth of microorganisms by oxidative stress of cell walls and other vital organelles. HOCl inactivates key enzymes in the cells, alters cellular metabolism, and degrades nucleic acids.

*These processes will decompose microbial cells – **without the risk of microbes becoming resistant.***

# NaOH - the Cleaning Agent

## ACT ECA System™

**Sodium hydroxide (NaOH)** is a alkaline base, also called lye or caustic soda. It is an excellent floor, surface, and carpet cleaner without any need for additional detergents. Sodium hydroxide is effective in removing proteins and nucleic acids. In the ACT ECA System™, it is used in a mild concentration.

**As a cleaning agent, sodium hydroxide saponifies\* fats and dissolves proteins.**

Due to the chemically activated NaOH, the ACT ECA Water has a very low surface tension. This means that ACT ECA Water can get closer to the top of the surface that needs cleaning – improving the cleaning result.

*\*Saponification is the process in which fats and oils are converted into soap and alcohols, which can easily be removed by water.*



# HOCl – Mimicking the Human Immune System

## ACT ECA System™

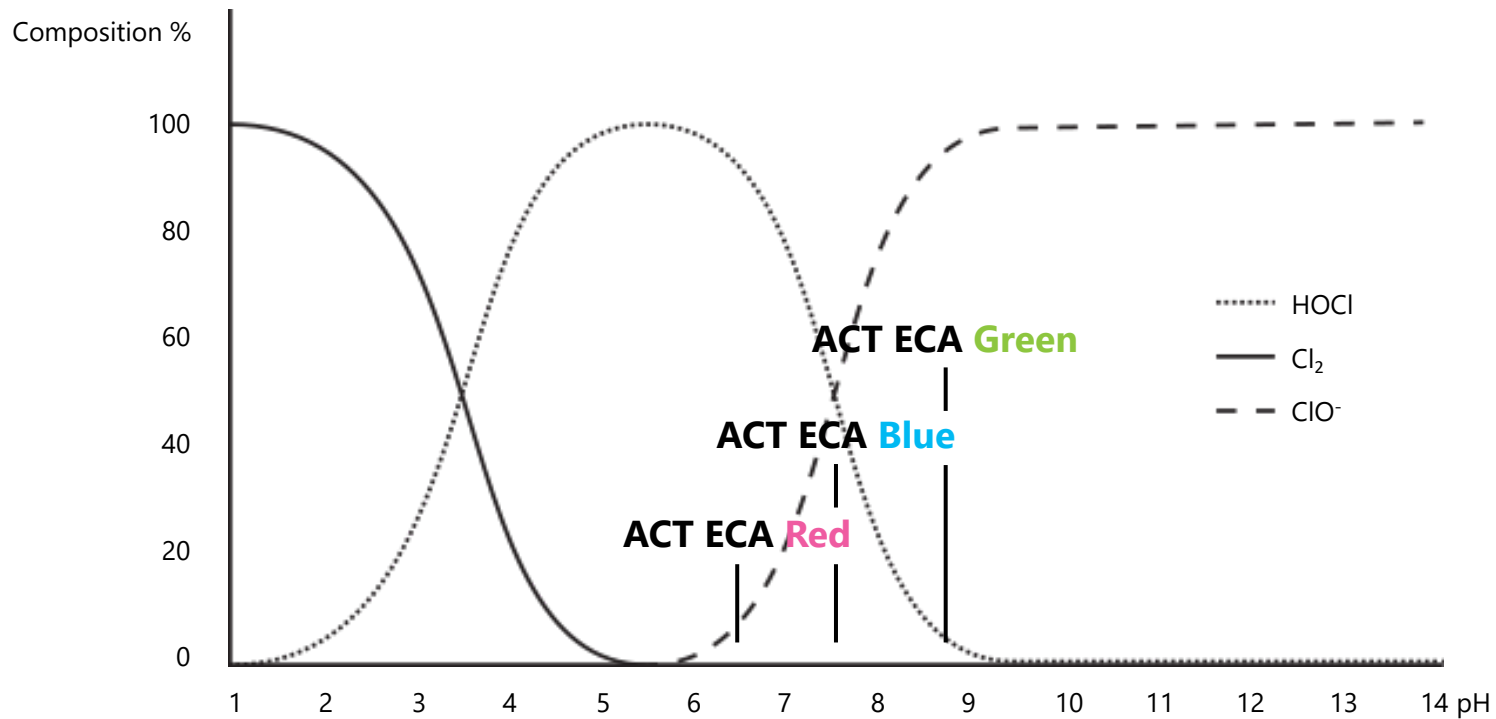
When the body is under attack from microorganisms, e.g. bacteria and viruses, the immune system responds immediately

- The body sends an increased number of **neutrophils**, a type of white blood cells, straight to the invasion site. When activated, these cells produce large amounts of a mixed oxidant solution, which is effective in decomposing invading microbes and pathogens
- The oxidant produced by neutrophils, **Hypochlorous acid (HOCl)**, is one of the most efficient natural disinfectants. It is non-toxic to humans and highly effective as an anti-microbial agent



# HOCl Concentration

## ACT ECA System™



The HOCl concentration is highly dependent on the pH value of the salt mixture. Thus, it is possible to adjust the product to fulfil different cleaning needs by slightly changing the salt formula.



# EASY and Fast to Produce

## ACT ECA System™

Water and ACT ECA Salt are mixed and entered into the ACT ECA Generator



After the electrolyzing process, ACT ECA Water exits the ACT ECA Generator





# ONE PRODUCT for Each Purpose

## ACT ECA System™

ACT.Global supplies three different salt mixtures, which produce three different types of ACT ECA Water:

### **ACT ECA Blue**

Cleans and disinfects, pH 7,5

### **ACT ECA Green**

Degreases and disinfects, pH 9

### **ACT ECA Red**

Used for limescale control, pH 5

# ECO-FRIENDLY

## ACT ECA System™

**Reduced use of toxic chemicals.** The ACT ECA System™ replaces toxic cleaning detergents and disinfectants. The surplus will decompose, and only water and salt remain – without leaving any negative effect on the environment.

**Less plastic.** With the ACT ECA System™, the need for plastic containers for conventional cleaning detergents is reduced.

**Lower water consumption.** The ACT ECA Water reduces the conventional cleaning process with several steps, including rinsing after application on a surface.

**Provides better working environment.** As ACT ECA Water is close to pH-neutral there is not any need for gloves or masks when handling the fluid.

