

REPLACE TRADITIONAL
CAUSTIC CHEMICALS

IMPROVE EMPLOYEE
SAFETY & PRODUCTIVITY

RETHINK HOW YOU CLEAN

THE KLARION™ SYSTEM FROM SPRAYING SYSTEMS CO.

SAVE TIME
& MONEY

IMPROVE
SUSTAINABILITY



Klarion™
THE SAFER CLEANING SOLUTION

From *Spraying Systems Co.*

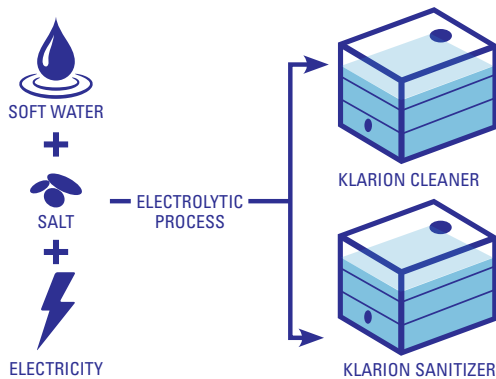
THE KLARION™ SYSTEM

RETHINK HOW YOU CLEAN & SANITIZE



PRODUCE POWERFUL CLEANING & SANITIZING SOLUTIONS IN READY-TO-USE CONCENTRATIONS ON-DEMAND IN YOUR FACILITY

The Klarion system's exclusive electro-chemical activation (ECA) technology uses only high purity salt, water and electricity. An electrical current separates the positive- and negative-charged ions out of a sodium chloride salt solution. The ions are pulled through proprietary ion exchange membranes to produce two powerful solutions: a sodium hydroxide cleaner and a hypochlorous acid sanitizer.



KLARION SOLUTIONS REPLACE TRADITIONAL CAUSTIC CHEMICALS WITHOUT SACRIFICING CLEANING EFFECTIVENESS

- **The Klarion cleaner** replaces concentrated chemical caustics in your facility
- **The Klarion sanitizer** is as effective as twice the concentration of bleach
- Both solutions have a 30-day shelf life
- The solutions contain no salt, making them safe for use on stainless steel surfaces without the risk of corrosion
- Switching to Klarion cleaner and sanitizer requires no changes to your current Sanitation Standard Operating Procedure (SSOP)
- Solutions can be used with portable tanks or in clean-in-place (CIP) systems

For additional information on efficacy see klarion.com/certifications

SIMPLE SYSTEM OPERATION

1. Just salt, water, electricity and access to a drain are required

2. Quick daily check of cleaner and sanitizer pH levels and the salt level in the brine tank

3. In the unlikely event of a problem, integrated error monitoring and telematics ensure quick, 24/7 resolution

SAVE TIME & MONEY

- **Pay only for what you produce** – no capital equipment expenditure required
- **Improve productivity** – workers can spend more time cleaning and less time suiting up in safety gear and mixing chemicals
- **Reduce waste water costs** and eliminate disposal fines
- **Simple operation** – cleaning with Klarion solutions is straight forward, enabling more workers to be trained quickly and efficiently

IMPROVE WORKER SAFETY

- **Healthier workplace** – solutions are fragrance-free and non-irritating to eyes and skin
- **No safety gear** – Klarion solutions eliminate risk of chemical burns and the need for protective gear when cleaning
- **Reduce worker's comp claims** – reduce absences due to health issues related to chemical exposure
- **Improve employee satisfaction and tenure** – changing to the non-toxic Klarion solution conveys your commitment to improving the work environment

IMPROVE SUSTAINABILITY

- **The solutions are drain and disposal safe**
- **Reduce water and energy use** – Klarion solutions are compatible with each other, eliminating the rinsing step between cleaning and sanitizing
- **On-site and on-demand generation** eliminates the pollution associated with the delivery of chemicals, mixing of chemicals and disposal of chemical containers



KLARION: BETTER FOR THE ENVIRONMENT, WORKERS & THE BOTTOM LINE

BAKERY ADAPTS KLARION™ CLEANING & SANITIZING SYSTEM TO ENSURE FOOD SAFETY AND IMPROVE WORKER SAFETY

PROBLEM:

A 40-year-old, employee-owned bakery was using chemicals with high chlorine concentrations to ensure the desired cleaning results were achieved. The bakery was having difficulty finding test equipment to validate the effectiveness of chemicals due to the high chlorine level. Another concern was the risk to worker safety due to the use of toxic chemistry.

SOLUTION:

The Klarion system fit nicely in the bakery's chemical cage without any rework of floor space or existing equipment. The bakery started producing the Klarion cleaner and sanitizer on-demand. Its first use of the solutions was on food contact surfaces that were part of its ATP swabbing program. The test results revealed a slight reduction in "warn" and "fail" numbers and a reduction in cleaning time of 15 minutes per day. The next step was a side-by-side drain test. Using the current SSOP, the bakery tested for pathogens in drains containing the current chemistry and drains containing Klarion solutions. Both drains passed the tests.

Worker response to the Klarion system was extremely positive. Learning to use the system and the solutions was easy and the safety of the solutions enabled dramatic changes in PPE requirements. Additional benefits included easier removal of lecithin and built-up residue. Testing pH and ppm of free available chlorine was much easier with Klarion solutions compared to the chemicals previously used.

Today, the Klarion sodium hydroxide cleaner and hypochlorous acid sanitizer are produced daily, on-demand and used to clean nearly everything in the bakery. The transition to the system was painless – not a single SSOP required modification. The Klarion system helped the bakery meet its high cleaning standards, improve worker safety, productivity and happiness, and is a perfect complement to the company's commitment to the environment.

RESULT:

When compared, the cost of Klarion system was about \$200 USD more a month than the traditional chemicals previously used. However, when the reduction in cleaning time and savings on PPE was factored in, the cost was even. The bakery decided the safety and satisfaction of their employees was more important than any additional slight increase in cost.

KLARION™ ECA SOLUTIONS ARE IDEAL FOR CLEANING:



HATCHERY SAVES MORE THAN \$1,300 USD A MONTH WITH THE KLARION SYSTEM

PROBLEM:

A large chicken hatchery was using traditional chemicals to clean and sanitize egg trays and other equipment. Concentrated chemicals in 55-gallon (208-liter) drums required special storage space and dilution prior to use. Costly personal protective equipment (PPE) was required for workers diluting and using chemicals. Worker morale was low due to the chemical exposure, and discomfort caused by wearing PPE. In addition, the chemicals required extra handling for disposal to prevent ground and waste water plant contamination.

SOLUTION:

A Klarion™ EGS 6020 system now produces safer cleaning chemicals on-site, and on-demand and is achieving the hatcheries high standards for cleanliness. The solutions are as effective as the harsh chemicals used previously, but are fragrance-free and non-irritating to eyes and skin. PPE is no longer required and the solutions are drain and disposal safe.

Producing the solutions on-demand in ready-to-use concentrations has eliminated the need for special handling, storage and disposal of chemicals. Worker safety and morale has improved since personal protective equipment (PPE) is no longer required and the risk of chemical burns has been eliminated.

RESULT:

The hatchery is saving more than \$1,300 USD per month on chemical costs, waste water disposal, PPE and worker health issues.



Klarion™
THE SAFER CLEANING SOLUTION

From *Spraying Systems Co.*

LEARN MORE ABOUT THE
KLARION SYSTEM & OUR
TRIAL PROGRAM FOR
QUALIFIED FACILITIES:
KLARION.COM OR 630-517-1010



**TANKER TRUCK
CLEANING FACILITIES**



**FOOD AND BEVERAGE
PROCESSING FACILITIES**



KLARION SANITIZER EFFICACY

Sanitizer Effectiveness: Time Kill Assay for Antimicrobial Agents, 10 to 30 Second Contact Time

TARGET ORGANISMS	CONTACT TIME	FREE AVAILABLE CHLORINE CONCENTRATION	SURFACE
Pseudomonas aeruginosa	10 seconds	200 PPM	Pre-cleaned, hard, non-porous
Campylobacter jejuni			
Listeria monocytogenes			
Methicillin resistant staphylococcus aureus (MRSA)			
Salmonella enterica			
Feline calicivirus (norovirus surrogate)	30 seconds		

Sanitizer Effectiveness: Time Kill Assay for Antimicrobial Agents, Contact Time Based on EPA Standards

TARGET ORGANISMS	SIGNIFICANCE OF TEST	METHOD	CONTACT TIME	FREE AVAILABLE CHLORINE CONCENTRATION	SURFACE
Campylobacter jejuni	This organism is second to salmonella in terms of food spoilage.	AOAC use – dilution method	10 minutes	200 PPM	Pre-cleaned, hard, non-porous
Salmonella enterica	Efficacy against these organisms are required by the EPA for food contact surface sanitizers.	AOAC available chlorine in disinfectants	1 minute		
Staphylococcus aureus					
Salmonella enterica	Efficacy against these organisms are required by the EPA for broad spectrum hospital disinfectants.	AOAC use – dilution method 961.02			Pre-cleaned, hard, nonporous
Staphylococcus aureus					
Pseudomonas aeruginosa					
Listeria monocytogenes					
Burkholderia cepacia					
Methicillin resistant staphylococcus aureus - MRSA	Efficacy demonstrated against additional organisms. Many organisms are antibiotic resistant and known to cause different kinds of infections.	AOAC use – dilution method with 5% soil load	10 minutes	165 PPM	Hard, non-porous
Vancomycin resistant enterococcus faecalis - VRE					
New Delhi metallo-beta-lactamase 1 (NDM-1) producing klebsiella pneumoniae					
Legionella pneumophila					
Escherichia coli					
Trichophyton mentagrophytes	Efficacy is required by the EPA against this fungus for claims against pathogenic fungi.	AOAC fungicidal use – dilution method with 5% soil load	10 minutes	165 PPM	Hard, non-porous
Non-enveloped	EPA recognized efficacy claims against various viruses.	AOAC use – dilution method with 5% soil load		165 PPM	Hard, non-porous
Poliovirus type 1					
Feline calicivirus (norovirus surrogate)					
Enveloped		AOAC use – dilution method	10 minutes	200 PPM	Pre-cleaned, hard, non-porous
Bovine viral diarrhea virus (Hepatitis C surrogate)					
Human immunodeficiency virus type 1 (HIV-1)		AOAC use – dilution method with 5% soil load		165 PPM	Hard, non-porous
Influenza A (H1N1) virus					
2009-H1N1 Influenza A virus (Novel H1N1)					
Herpes simplex virus type 2					
Avian influenza A (H7N9) virus					

Method requirements from Environmental Protection Agency (EPA) Product Performance Test Guidelines OSCPP 810.2200.

The Klarion Cleaning and Sanitizing System is regulated as a pesticide device manufactured at EPA establishment number 88161-IN-001.



From **Spraying Systems Co.**

CONTACT US FOR MORE INFORMATION

North Avenue and Schmale Road, P.O. Box 7900, Wheaton, IL 60187-7901 USA

Tel: 1-630-517-1010 | info@klarion.com

www.klarion.com