

What is ANOLYTE?



SAFE AROUND[™]
MARINE, PLANT, HUMAN AND ANIMAL LIFE

ECA Technology - ANOLYTE

Anolyte is an electrochemically activated solution produced during the electrolysis of saltwater, primarily used as a powerful, pH-neutral disinfectant. **Anolyte** aka: Super Oxidized Water (SOW) or Neutral Anolyte or ANK-Anolyte. It contains hypochlorous acid (HOCl) and other oxidants that effectively target bacteria, viruses, fungi, and biofilms without harming humans or the environment. **Anolyte** is an all-natural, organic, non-toxic, non-irritant, environmentally and ecologically safe sanitizing and disinfecting solution. Commercially available as Neutral Electrolyzed Water.

Key Properties

Anolyte typically has a neutral pH (around 5.0–7.0) and a high oxidation-reduction potential (ORP >800 mV), making it a stable, broad-spectrum antimicrobial. Unlike bleach, it's non-toxic, biodegradable, and safe for surfaces, skin, water treatment, and fogging in occupied spaces.

Common Uses

Anolyte is an applied disinfection for healthcare, food processing, water systems, and cleaning (e.g., pools, floors, wounds). Most ECA companies that produce **Anolyte** use it for pathogen control, aligning with eco-friendly standards.

How Does Anolyte Compare To Bleach As A Disinfectant

Anolyte outperforms bleach as a disinfectant in efficacy, safety, and environmental impact due to its primary active ingredient, hypochlorous acid (HOCl), which is up to 80-100 times more effective at killing pathogens than bleach's hypochlorite ion (OCl⁻).

Efficacy Comparison

Anolyte achieves rapid microbial kill (often 99.9% in seconds) across bacteria, viruses, and biofilms because HOCl penetrates cell walls easily at neutral pH (5.0-7.0). Bleach requires higher concentrations and longer contact times, as its efficacy drops at higher pH where OCl⁻ dominates.

Safety and Stability

Unlike caustic bleach (pH ~13), anolyte is non-toxic, skin-safe, and non-corrosive to equipment or stainless steel, with no harmful residues or gas emissions. It remains stable longer without losing potency during storage.

Key Differences

Aspect	Anolyte	Bleach (Sodium Hypochlorite)
pH	Neutral (5.0-7.0)	High (~11-13)
Effectiveness	80-100x > OCI- (BLEACH)	Less efficient form
Safety	Human/animal-safe	Caustic, irritating
Corrosion	Minimal	Higher risk
Cost/Use	On-site generation, eco-friendly	Purchased, hazardous waste

Virus Efficacy

Anolyte's hypochlorous acid (HOCl) penetrates viral cell membranes rapidly, inactivating viruses like coronaviruses in under 1 minute at low concentrations (e.g., 200 ppm), meeting EN 14476 standards. Bleach (NaOCl) requires higher doses and longer contact times, as its hypochlorite ion (OCI-) is less efficient at typical pH levels.

Spore Performance

Anolyte eliminates resistant spores, fungi, and biofilms effectively due to its high ORP (>900 mV) and neutral pH, outperforming bleach by up to 100 times in some tests. Bleach handles some spores at 5000 ppm with 10-minute contact but struggles against highly resistant ones without dilution issues.

Comparison Table

Target	Anolyte Advantage	Bleach Limitation
Viruses	>100x faster, broader spectrum	Slower, pH-dependent
Spores	Kills spores/biofilms easily	Needs high concentration/time

Skin Safety

Anolyte, primarily hypochlorous acid (HOCl), is naturally produced by the human immune system and causes only mild, non-harmful irritation at high concentrations, even to sensitive skin or eyes—no gloves needed. It's non-toxic, non-corrosive, and used in medical settings for wound care and eyelid cleaning.

Food Surface

Anolyte is approved as a no-rinse sanitizer at ≤200 ppm, it eliminates pathogens like E. coli and Salmonella on countertops, cutting boards, and utensils without residues or toxicity risks. Unlike bleach, it breaks down into saline, making it ideal for kitchens and food prep.

Safety Comparison

Use Case	Anolyte	Notes
Skin	Gentle, no irritation reported	Body-safe pH ~5.0-7.0
Food Surfaces	No-rinse, residue-free	Rinse required

Anolyte Produced by a Kirkmayer HOCl System Generator



Hard Non-porous Surface Disinfectant
500 ppm

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Hard Non-porous Surface No-rinse Sanitizer
≤200 ppm

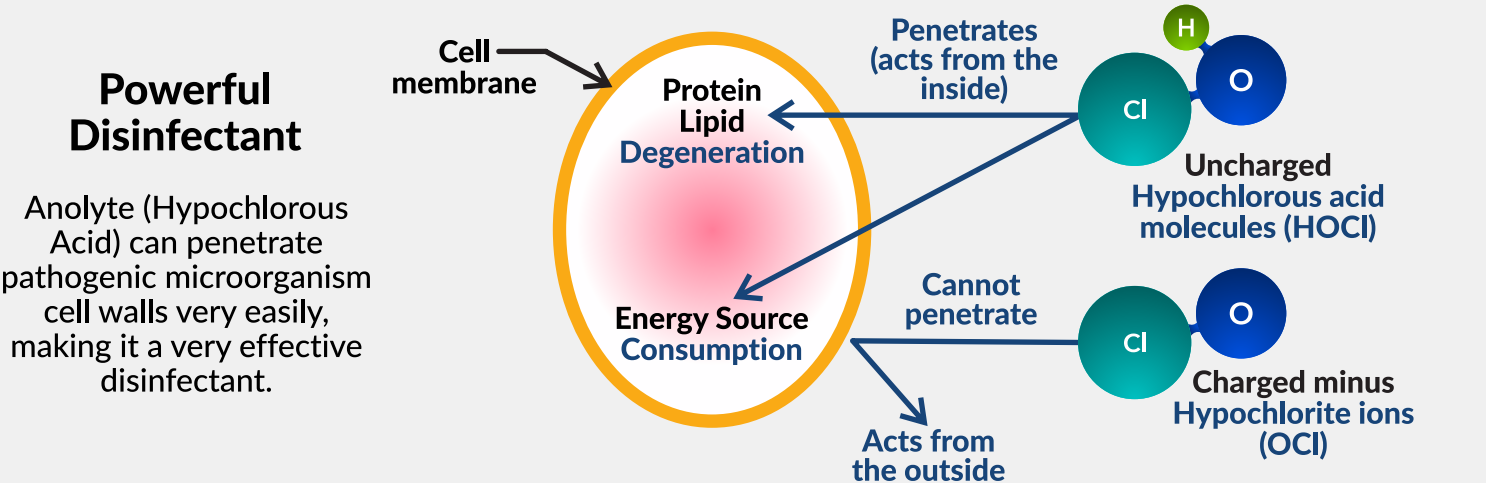
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Water Treatment & Fog Applications

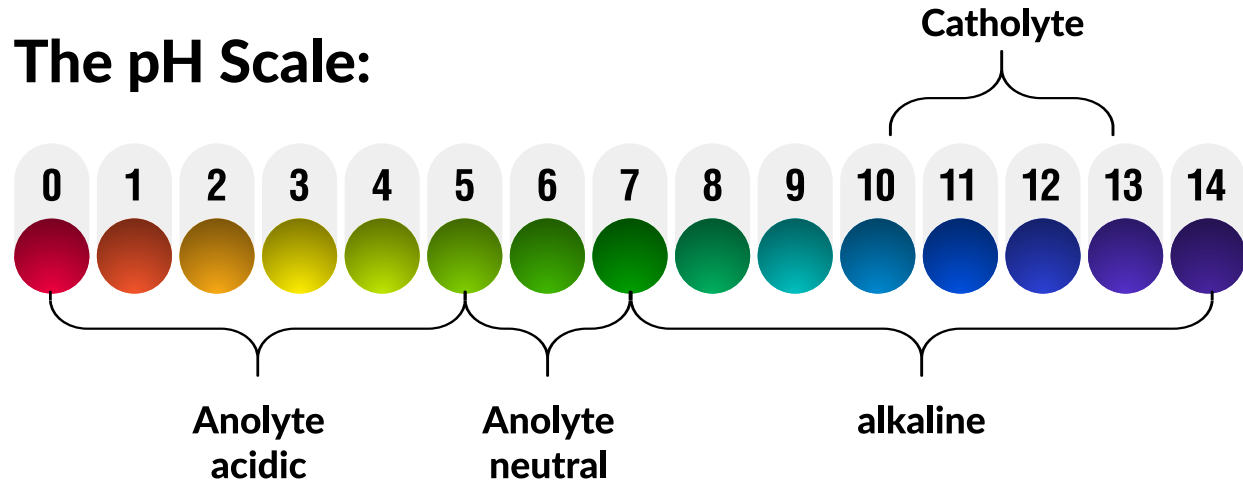
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Common Variants

- **Acidic Anolyte (or A-Anolyte):** Stronger oxidizing version with low pH and chlorine-based biocides for heavy disinfection.
- **Neutral Anolyte (or ANK-Anolyte):** pH-neutral form with hypochlorous acid (HOCl), ideal for corrosion-sensitive uses like skin or food prep.
- **Electrolyzed Oxidizing Water or Anodic Solution:** Descriptive terms for the anode-generated solution in electrolysis.



Key Differences Between Acidic and Neutral Anolyte

- **pH:** Acidic anolyte is typically around pH 2.0–5.0, while neutral anolyte is around pH 6.0.
- **Active chemistry:** Acidic anolyte is described as richer in chlorine gas/strong oxidizing species, while neutral anolyte is mainly hypochlorous acid (HOCl) with some hypochlorite ion OCl^- .
- **Disinfection strength:** Acidic anolyte is usually positioned for rapid microbe kill and sterilizing tasks, while neutral anolyte is still highly effective but tuned for safer everyday disinfection.
- **Corrosion/safety:** Acidic anolyte is better where corrosion is not a concern; neutral anolyte is preferred where pH matters, such as food surfaces, drinking water, tools, and skin-adjacent uses.
- **Applications:** Acidic anolyte is used for heavy-duty disinfection and sterilization, while neutral anolyte is commonly used for general cleaning, food prep areas, water treatment, and sensitive surfaces.



Your Leader in On-Site HOCl Hypochlorous Acid Generators

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