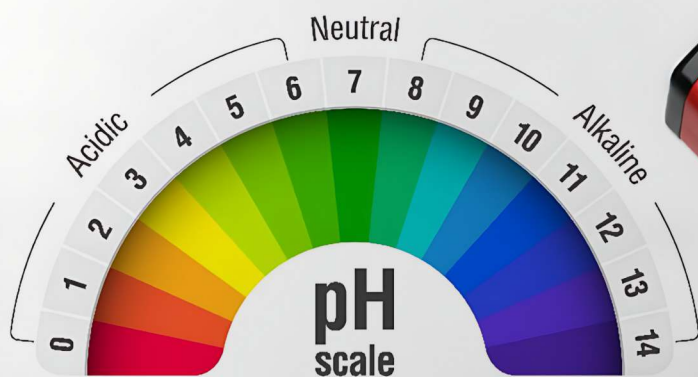




What is pH?

ECA Technology - pH

pH in HOCl technology refers to the acidity/alkalinity level of hypochlorous acid solutions, which directly controls its form and disinfection power. pH is a critical factor in HOCl (hypochlorous acid) technology, determining its form and disinfection effectiveness. HOCl—the active, powerful disinfectant—exists primarily at pH 5.0-6.5 (80-100% undissociated HOCl), where it penetrates microbial cells rapidly.

The pH Sweet Spot

Simply put, the pH of a solution tells us how acidic or alkaline it is, on a scale from 0 (very acidic) to 14 (very alkaline).

A manufactured hypochlorous acid solution is **most stable and effective** in a slightly acidic environment; specifically between pH 4.5 and 5.5.

Within this range:

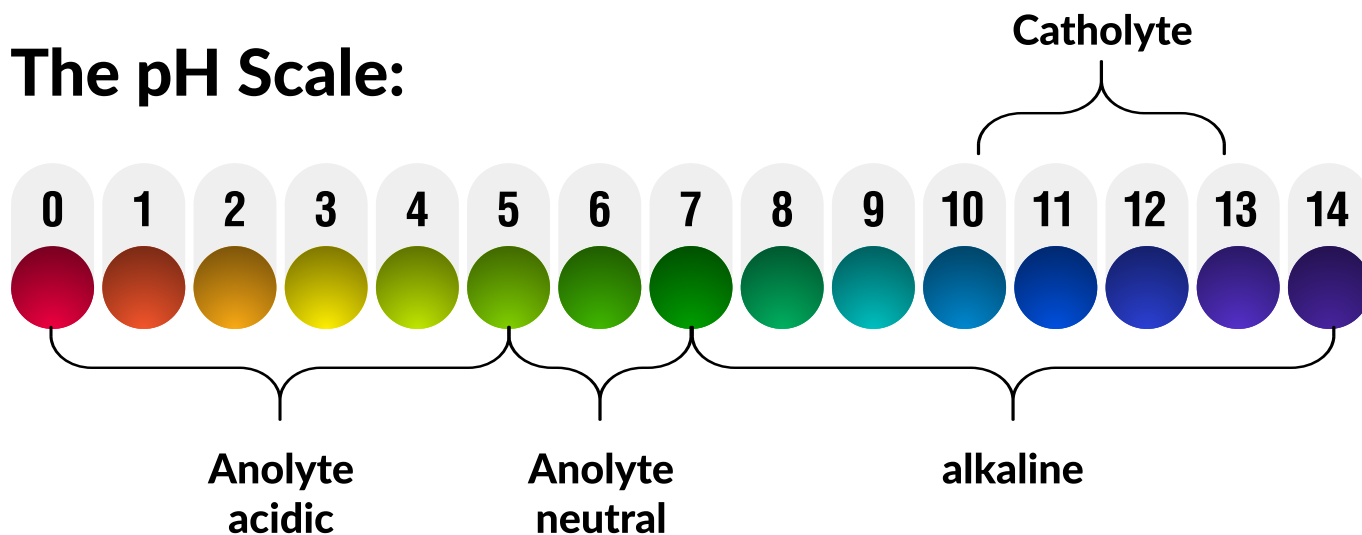
- HOCl remains the dominant chlorine species, meaning it's in its most potent antimicrobial form.
- The solution is non-toxic to healthy tissue (i.e. non-cytotoxic). This is unlike high-pH (>5.5) solutions that can cause irritation or cytotoxicity due to the presence of increasing amounts of hypochlorite (bleach) molecules in the resulting solution.
- Stability is maintained, allowing the product to retain its effectiveness over time.

Why pH Controls HOCl Power

$\text{HOCl} \rightleftharpoons \text{H}^+ + \text{OCl}^-$ (hypochlorite ion). At higher pH, equilibrium shifts right—less active HOCl, lower ORP, slower kill. Acidic pH keeps HOCl intact for maximum oxidation potential.

Practical target: pH 5.5-6.5 for disinfection, food processing, and skin applications.

The pH Scale:



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pH	HOCl %	ORP Range (mV)	Kill Time*	Application
5.0	100%	950 - 1100	<30 sec	Pure HOCl, medical grade
5.5	95%	900 - 1000	<1 min	Optimal disinfection/skin
6.0	85%	850 - 950	1-2 min	Peak performance window
6.5	75%	800 - 900	2-5 min	Food processing standard
7.0	50%	750 - 850	5-10 min	General surface cleaning
7.5	20%	700 - 800	10 - 30 min	Pool/spa minimum
8.0	10%	650 - 750	>30 min	Poor - mostly OCl^-
8.5+	<5%	<650	Hours	Bleach-like, ineffective

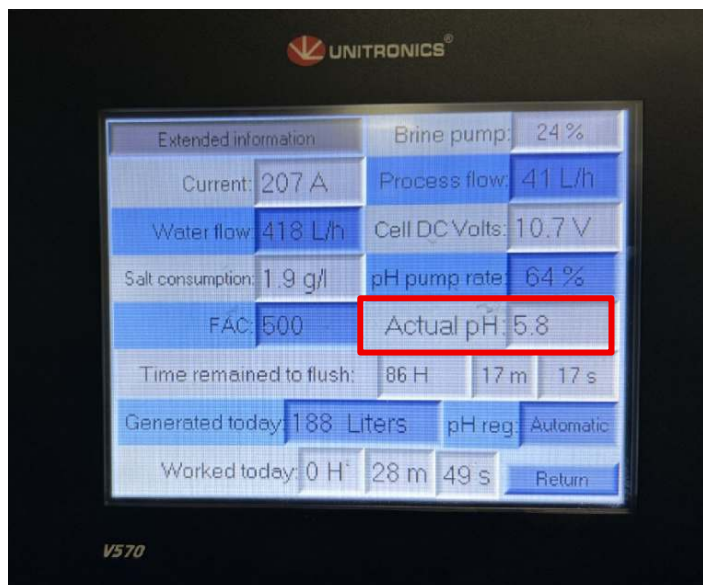
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Where to Read pH on a Kirkmayer HOCl Generator

(The pH Sensor is an option)



Ready to Upgrade Your Disinfection?

SYSTEM
GENERATORS

SYSTEM
CAPACITIES

SYSTEM DATA
SHEETS

BROCHURE

GENERAL
INQUIRY



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Your Leader in On-Site HOCl Hypochlorous Acid Generators

KIRKMAYER is a leading global provider of electrochemically activated solution (ECA) generators, delivering first-rate HOCl systems. Our mission is to design and build electrolytic cells that are more reliable, efficient, and durable than conventional ECA and HOCl generators available on the market today.



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