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pH³ Ocean Mist IS NOT A PESTICIDE!
Bonded single neutral ion
Highly charged with 6.45 IP (*Ionic Product*)
Neutral pH typically 7.5 (+1/-1)
Neutral ORP (*Oxidation Reduction Potential*)
Neutral NaCl (*table salt*) less than 5000 ppm
Neutral NaCl naturally accruing nontoxic bio-selective organo *Chlorine* species

pH3 Ocean Mist is an alternative to using EPA registered pesticides!
Homes – Offices – Schools – Restaurants – Manufacturing – Storage – Anywhere with Air!

I get asked all the time “what is the difference between Hypochlorous Acid (*HOCl*) Available Free Chlorine (*AFC*) and pH3 Ocean Mist (*FEW*) Available Free Neutral organo *Chlorine* (*AFOC*)?”

This is not an easy question to answer, you must have some sort of an understanding of chlorine species, chlorine products and chlorine levels. This is a very large subject.

Most people typically know chlorine by pH range and typical products available:

OCl ⁻ hypochlorite chlorine bleach	10.5 pH and higher	EPA registered pesticide - corrosive
Advanced HADP Electrochemistry for Aquarius Solutions	10.5 ~ 6.5	NON PESTICIDE-NON CORROSIVE-NON OXIDIZING
HOCl Hypochlorous Acid	6.5 ~ 5.5 pH	EPA registered pesticide - oxidizing
H ₂ O ₂ Hydrogen Peroxide	4.5 ~ 3.5 pH	EPA registered pesticide - oxidizing
HCl Hydrochloric Acid	3.0 pH and less	EPA registered pesticide - oxidizing

Notice the mysterious range of 6.5 ~ 10.5 pH is blank? In Advanced High Amp Dual Polarity (HADP) Electrochemistry for Aquarius Solutions, this is a very special range, the range of Neutral Ionics. The total range for HADP neutral Ionics is 5.5 ~ 10.5 depending on the specific electrolyte used. When using Sodium Chloride (NaCl) “Table Salt” as an electrolyte and staying within the range of 7.0 ~ 9.5 pH, the finished solution is not recognized by the EPA as a pesticide despite the measurable presence of Available Free organo *Chlorine* (AFOC). Unlike EPA registered pesticides, pH3 Ocean Mist uses Ionic Product for the power to deliver its nontoxic bio-selective organo *Chlorine* species through a membrane wall without destroying the membrane, EPA registered pesticides use oxidation and/or corrosion to destroy a membrane wall and deliver their toxic chlorine species by way of destruction and why they are dangerous registered EPA Pesticides.

The thing is most people only use these chemical descriptions in general conversation. These products can be made in different ways and with different components as their measure is mostly by pH range. The EPA has specific language and definitions when it comes to these products.

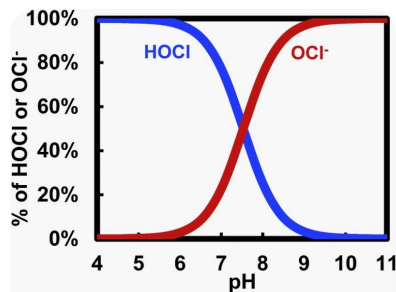
Today in the marketing of HOCl sanitizers, they take some information out of context for their clever marketing. An example is “*Hypochlorous acid is naturally produced by white blood cells of all mammals. It plays an important role in the immune system killing pathogens through oxidation and chlorination.*”

As in most marketing there is some truth to the statement, but it is distorted. The hypochlorous acid produced by these companies is not the same as what is produced by our bodies, they are using the language in a general statement, it is misleading. If our body was to be at a pH range of 5.0 ~ 6.5 with an ORP of 950 or greater and a high concentration of available free chlorine of 200~500 ppm or more we would be in big trouble. HOCl from a HOCl manufactured product recognized by the EPA as a HOCl product and registered as a pesticide is not the same as using the term to describe natural reactions within the human body, but it does make for clever marketing.

The natural accruing organochlorine produced in our organic generators (bodies) is by dual polarity. It is affected by both positive and negative charges and therefore affects both the acidic and base (alkaline) side of NaCl which is a 50% basic/50% acidic or a neutral salt.

Our bodies use NaCl and water to balance around 7.4 pH. At 7.4 pH using NaCl balanced with dual polarity you get in comparison a solution if combined would be considered 50% HOCl/50% OCl- at 7.4 pH, not 100% HOCl at 5.5~6.5 pH. Keep in mind the terms HOCl & OCl- do not apply here as to the official definitions by the EPA of what those two solutions are, they are merely used as comparisons for illustration.

Some like to say HOCl is a neutral charged ion, this is incorrect, HOCl is a positive charged ion, HOCl is created acidic using a single polarity positive generator (*acidic 0~7.4 pH on a weak acid scale, 7.5 is true neutral, 7.6 begins alkaline or basic*), acidic holds a positive charge by nature's rule. pH3 Ocean Mist is created by bonding 1 positively highly charged acidic ion with 1 negatively highly charged alkaline or basic ion to form 1 neutral ion. A perfect pK_w matched 1 ~ 1 bonded ion solution can only be 7.5 pH (+1/-1) as the pK_a / pK_b weak acid scale is 0~15.



This simple chart represents the neutrality of NaCl salt and chlorine in comparison concerning HOCl & OCl- by pH. Everything in nature is balanced, our human organics are balanced by NaCl and H₂O with the assistance of electrical reactions both positive and negative. The basics or alkaline get their power from the negative and the acids get their power from the positive. Nature always brings them back to neutral and is why our bodies are 7.4 pH. In nature, for everything there must be an opposite equal, keeping neutral or equal balance. In our body our chlorine species is by pH, 7.4 pH from NaCl and water only, in chemistry this range would be a combination of 50% HOCl & 50% OCl- if reproduced by mixing those 2 components, this is not the same as what our bodies produce, and it would be toxic of course.

HOCl generators do not build a neutral solution as they only supply a positive charge and do not have any control over OCl- alkaline/basics. They do not have the ability to create neutral, they play with marketing words on neutral as a "neutral pH range" for water is 5.5~9.5 (*true neutral pK_w for natural water is 7.0 pH +7 -7*) but that is in a different context, not as chlorine or a weak acid solution. In chlorine, below 7.4 pH is acidic, 6.5~5.5 is HOCl range, 4.5~3.5 pH is hydrogen peroxide range, and below 3 pH is hydrochloric acid range. pH3 Ocean Mist is 7.4 pH for a reason, to create a true neutral solution.

To properly compare products, one must know the manufacturing method and components/ingredients used in each solution compared.

I can only speak for my methods and components used: Water-NaCl-High amp dual polarity electrochemistry. My NaCl electrolyte is prepared using high amp dual polarity for balance and compatibility creating a stronger and pure electrolyte. My base water for manufacturing is also pretreated with high amp dual polarity for ionic neutral balance and compatibility.

pH3 Ocean Mist does not fit any of the above EPA registered chemical compound descriptions. All the compounds are either strong acidic or strong alkaline products, pH3 Ocean Mist is neither, pH3 Ocean Mist is Neutral.

Acidulous Technologies used to manufacture pH3 Ocean Mist is a single neutral ion, bonded together from 1 acidic and 1 alkaline or basic ion, in a high amp dual polarity electrochemistry chamber. The NaCl Acidulous pH range used is from 7.0 ~ 9.5 but with pH3 Ocean Mist as a specific finished product, we are between 7.4 ~ 7.6 pH, a neutral ORP, a TDS of less than 5000ppm from NaCl only, and an AFOC of less than 200 ppm but greater than 100 ppm stabilized for local food service compliance and does not require any registrations by the EPA.

HOCl assuming it is made in a typical HOCl generator would use water, a combination of NaCl & HCl, will have an acidic pH, will have an oxidizing ORP of greater than 950mV, will have an available free chlorine (AFC) of 200~500 ppm unstable, and will require an EPA registration as a pesticide.

There is not much in common between these 2 solutions, but everyone seems to think they are similar, here are some additional differences to note.

HOCl is acidic with a pH of 6.5 ~ 5.0 weak acid – acidic and unstable
pH3 Ocean Mist is true weak acid neutral 7.5 (+1/-1) pH and stable

HOCl generally has an ORP of 950mV or greater using oxidation for power to deliver its HOCl chlorine species
pH3 Ocean Mist has a neutral ORP using Ionic Product (IP) for its power to deliver its organo *Chlorine* species

HOCl is an unstable Nano cluster at best 4 acidic~1 basic, acidic pH, unstable, and charged with maximum 100mA single polarity electrochemistry nano technologies
pH3 Ocean Mist is balanced 1 acidic ~ 1 basic, bonded to neutral, and stabilized with 10,000mA dual polarity electrochemistry ionic technologies

HOCl has Available Free Chlorine (AFC) present measurable and adjustable by increasing/decreasing pH range
pH3 Ocean Mist has Available Free organo *Chlorine* (AFOC) present measurable and adjustable at same stabilized pH, AFOC is adjusted by applied electrical charge not pH

HOCl has respiratory hazards and cannot be ultrasonically fogged with people present inhaling the solution due to its high Cl₂ profile, HCl presence, high ORP, acidic pH, and unbalanced salt that can cause acidosis from prolonged exposure
pH3 Ocean mist has no respiratory hazards, can be ultrasonically fogged with people present, has no inhalation hazards rather has inhalation benefits and is pH balanced with no risk of acidosis nor alkalosis

HOCl is oxidizing and/or corrosive to everything it comes into contact with
pH3 Ocean Mist is non-oxidizing, noncorrosive, and safe for all surfaces

HOCl has a high concentration of chlorine gas giving it a strong Cl₂ profile and serious respiratory hazards
pH3 Ocean Mist has virtually no chlorine gas giving it a diminished Cl₂ profile and no respiratory hazards

HOCl must be EPA registered as a pesticide for “safe to use as directed” consumer guidelines
pH3 Ocean Mist is classified as Functional Electrolyzed Water, the EPA does not recognize pH3 Ocean Mist as a pesticide and requires no registration or special instructions for use

HOCl is antiquated technology from decades ago
pH3 Ocean Mist is the most advanced solution from the most advanced generator available today

HOCl is acidic with pH of 5.5 ~ 6.5 100% HOCl chlorine positively charged
pH3 Ocean Mist is 7.4 pH bonded neutral NaCl organo *Chlorine*

HOCl is a “surface sanitizer” only, must clean organics from surfaces prior to use
pH3 Ocean Mist is an ionic cleaning solution for all surfaces, porous & nonporous, food and nonfood contact, and even an ultrasonic aerosol air cleaner

HOCl pH is lower than typical human pH and too acidic for long term exposure human compatibility
pH3 Ocean Mist is human pH matched for long term compatibility and safety

I hope this information help to clarify facts from marketing language.

Paul E. Seaver
President - Palm Beach Springs Water Company Inc
& pH3 Ocean Mist creator