chlorOrgano™

Ready to Use, Concentrates, & On Demand Equipment

Synthetic Non-Regulated Hybrid NaOC-

By Paul E. Seaver

chlor*Organo* TM

a system engineered by Hiroshi Tanaka, Innovative Designs and Technology Japan

innovative Designs & Technology

Japan

Hiroshi Tanaka
President

ID&T is very well known in Japan and the Asian Market overall for a variety of unique electrochemistry generators engineered for industrial operations.

chlor*Organo* is manufactured using one of these systems developed in the 1990's.

This specific range is called Acidulous.

Acidulous is simply a description of the solubility of salts in water.

chlorOrgano is a unique chlorine species manufactured by dissolving NaCl salts in water and applying a high electrical charge in dual polarity restructuring the medium to a Functional Electrolyzed Water NaOC- organochlorine.

What is chlor*Organo* ™ NaOC-

chlor*Organo* is a single salt synthetic organochlorine species in basic range.

Most people only hear about the most popular EPA Regulated Pesticide Products. When it comes to chlorine, there are thousands of organic chlorine species, some toxic and others non-toxic. The difference is, what in total makes up the medium which produced the chlorine species. If it is a toxic medium, you will get a toxic chlorine.

Non-toxic chlorine species created naturally by organics are produced in neutral environments of NaCl salts.

If it is a clean organic environment such as Humans, you will get a non-toxic organo chlorine from the salt we consume.

NaCl salt is non-toxic as NaCl is vital for organic life. With out NaCl we can not balance our pH as well as other vital roles NaCl plays in organics.

The rules to making a safe synthetic chlorine species are clear, but it is a bit more complicated. Organics already structure the delivery; we must also have a delivery compatible with organics to be a bio selective safe chlorine species.

You must deliver the chlorine to the inner cellular space with out damaging the membrane of the cell, this is what separates pesticides as dangerous, and chlor*Organo* as safe.

Typical popular EPA regulated pesticides:

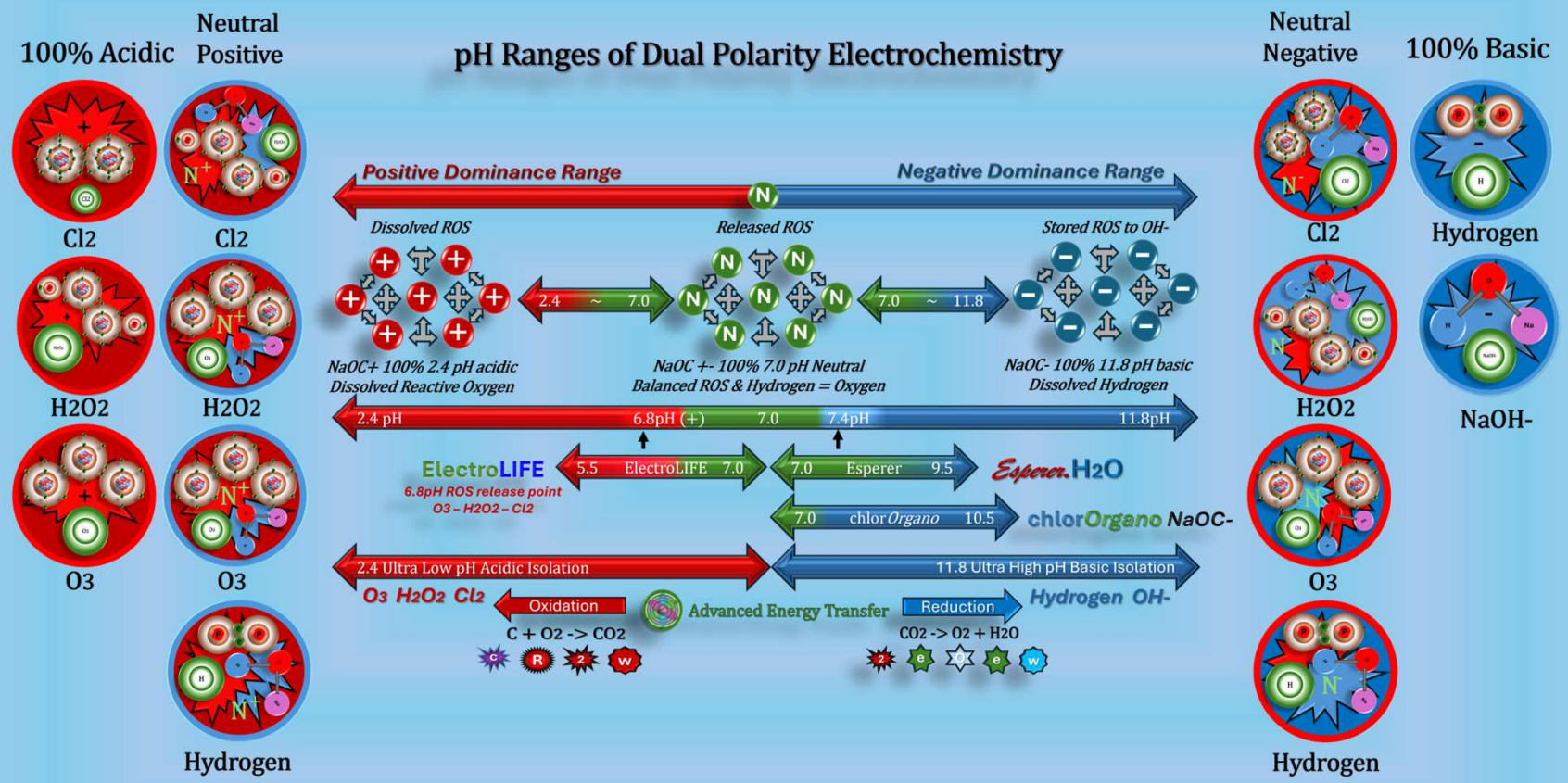
Polarity	*Description*	*pH Range*
(+)	*HCl Hydrochloric Acid*	*3.0 pH*
(+)	*H2O2 Hydrogen Peroxide*	*4.0 pH*
(+)	*HOCl Hypochlorous Acid*	*5.5 pH*
(-)	*ClO2 Chlorine Dioxide*	*7.5 pH*
(-)	*OCl- Hypochlorite*	*10.5 pH*
(-)	*NaClO- Chlorine Bleach*	*12.0 pH*
(-)	*OH- Sodium Hydroxide*	*13.0 pH*
(-)	*OH- Lye*	*14.5 pH*

EPA Regulated chlorines are combinations of salts, these are synthetic chlorine products developed for industrial use. They are produced in dangerous levels for shelf life and or use in treating large volumes.

There use has become common even in environments where they are not compatible although through the regulation process can obtain "safe when used as directed" labeling.

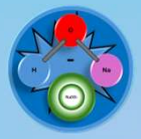
The safety is regulated by the end user, most do not even read the label or have any knowledge of the products, they just use it like an everyday safe solution sold to any one available almost everywhere and under a multitude of brands.

High Amp Dual Polarity Electrochemistry and Making NON-Toxic Safe Chlorines

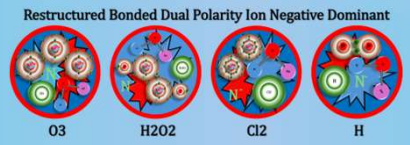


Dual polarity electrochemistry and NaCl salts allow for the production of chlorine products from 2.4 pH all the way to 11.8 pH. chlor*Organo* NaOC- has a total range of 7.0 pH ~ 11.8 pH.

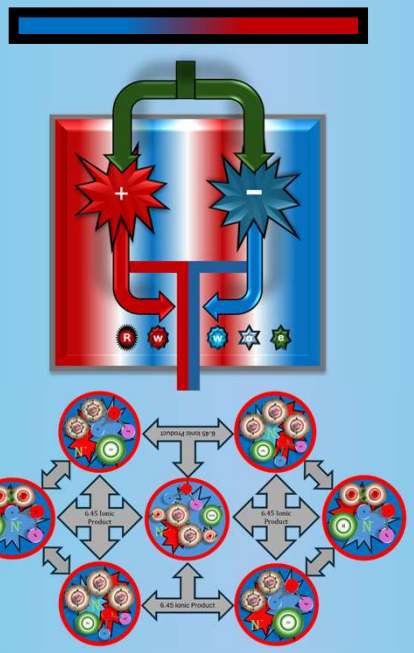
The range in this discussion is 7.4 pH ~10.5 pH *(Neutral Negative Dominant as shown Blue/Red trim molecules).*



Dual polarity allows for the formation of OH- in the same space as Cl_2



2% NaCl only Electrolyte
Proprietary Solutions



chlor*Organo* could be closely compared to OCl-. OCl- uses a combination of salts for strong reactions, must be stored in concentrations of greater than 10.5 pH for an average 2-year shelf life. OCl- is manufactured by infusing industrial concentrated Chlorine Gas (Cl_2) into industrial concentrated Sodium Hydroxide (OH-).

chlor*Organo* is similar although the OH- is produced at the cathode as a single ion molecule dissolved in a single molecule of H_2O from a single NaCl salt. The Cl_2 is being produced at the anode as single bubble gas dissolved in single molecule also produced from splitting H_2O, not concentrated volume of industrial gas for infusion like OCl-.

Most chlorine is manufactured electrolytically by the diaphragm, membrane, or mercury cell process. In each process, a salt solution (sodium or potassium chloride) is electrolyzed by the action of direct electric current which converts chloride ions to elemental chlorine.

This process is taking place in the same space at the same time allowing for not only the Cl_2 to store to the OH-, but it also allows for the other ROS present such as ozone (O_3) and hydrogen peroxide (H_2O_2) to also store to the OH-. These other gases store together insulated by the H_2O they are dissolved in and stabilized by 6.45 Ionic Product separation.

This special and unique method of storing multi gas species together, this not possible with commercial OCl- manufacturing methods as the infused gases are not dissolved and isolated, they would instantaneously and dangerously interact with each other upon contact.

chlorOrgano is balanced during the process by the hydrogen present created at the cathode, the entire process is instantaneous, the out flow is balanced and stabilized with twice the shelf life as OCl-, and unlike OCl- it is stable through out the entire pH range.

chlorOrgano pH is not actually a measure of pH, it is a measure of the storage of Total Chlorine, example: 7.4 pH is typically 150 ppm Total/Free Chlorine, 9.8 pH is typically 1500 ppm Total / Free chlorine. The higher the concentration the longer the shelf life. chlor*Organo* RTU at 200 ppm is stable for over 1.5 years and still 200 ppm, not depleted, from the 1.5 year it will start to decrease although very slowly.

What makes OCl- Dangerous and REGULATED

Without getting too deep into the science, this is all about manufacturing methods and the application of energy.

Typical OCl- is manufactured by infusing a concentrated industrial Cl2 gas into another industrial grade OH- (sodium hydroxide) to store the Cl2 as concentrated OCl- (Hypochlorite) at 10.5pH. In this method only Cl2 can be stored to the OH- as the OCl-.

This is a very corrosive combination and very stable having an average 2-year shelf life *(this is why it leaves a residual).* OCl- is basic range for organic destruction *(dissolving the membranes of cells with its OH- content)* and why it is used for maintaining swimming pools and other general water treatment.

It is a combination of reactionary salts used for their power in the negative range. The power is not stored it is created when diluted into the environment activated by lower pH *(electrical positive range)* and therefore must be maintained with a residual content. This is why in swimming pool maintenance several reading levels are monitored. The most important are the pH and Total Chlorine, the others just tell you the information you need to know how to keep the pH balanced, which in turn regulates the release of total chlorine as HOCl free chlorine.

What makes chlor*Organo*™ NaOC- so SAFE its NON-REGULATED

chlor*Organo* is manufactured much differently. The electrolyte is a single salt NaCl only. The reason for this is NaCl is non-toxic to organics, NaCl is vital to life for all organics. The power is stored in the electrolytes and not a short-lived chemical reaction initiated by dissociation.

The reactions are completed and balanced in the electrolysis process. The energy is stored stable balanced power ready to use with out inhibition, this is much different than similar species of chemical reactions. Neutral is compatible with both basic and acidic and why it has compatibility with both polarity ranges as illustrated earlier. The applied polarity off set is in total control not self ionization or chemical reactions.

Dual Polarity Electrochemistry carries 10,000 times the power of self ionization, 1000 times the power of similar chemical reactions, and 100 times the power of single polarity weak electrolyzed nano mediums. Dual polarity electrochemistry is undisputedly the highest power of water.

Why single salt NaCl sodium chloride electrolyte is an important subject for safety.

chlor*Organo* ™

2% NaCl only Electrolyte
Proprietary Solutions

Sodium chloride (NaCl), also known as salt, is an essential compound our body uses to absorb and transport nutrients. maintain blood pressure. maintain the right balance of fluid. Salt plays a crucial role in maintaining human health. It is the main source of sodium and chloride ions in the human diet. Sodium is essential for nerve and muscle function and is involved in the regulation of fluids in the body. Sodium also plays a role in the body's control of blood pressure and volume.

With this understanding it is impossible for NaCl to be toxic to humans and why chlor*Organo* is non-regulated.

chlor*Organo* Ready To Use (RTU) is approximately 3500 ppm from NaCl. This is about 2% by volume.

The solution is not capable of being toxic to humans from its contents. As we stay neutral at 7.4ish pH we are keeping the NaCl neutral as well. NaCl does not have a pH as it is a salt. NaCl is 50% basic 50% acidic if it had a pH, it would be a perfect 7 *(or some would say 7.5).*

This is why chlor*Organo* RTU is 7.4ish (+-). This is why Humans are 7.4 pH, everything must balance to be compatible. Water, salt, and human compatibility are balanced perfect at 7.4 pH. This is why chlor*Organo* RTU is 7.4 pH, 2% NaCl and less than 200 ppm Free Chlorine.

Less than 200 ppm free chlorine is a USDA NOP standard for synthetic organics max ppm HOCl concentration exempt pesticides. chlor*Organo is exempt from this as* chlor*Organo is not HOCl ,* chlor*Organo is a non-regulated NaOC-.*

This can become confusing in the commercial market; we choose to acknowledge this range so there is no question to safety concerns with typical knowledge of chlorine products and ranges used in food service training and regulation standards.

*Oxidation and/or Corrosion are what **make Chlorines** work but also **Dangerous***

Chlorines are measured by pH, ORP and Total Chlorine readings. It is understood depending on what species or range your using, you must monitor these readings for effectiveness. This is due to the requirements of corrosion in the alkaline/basic range and the oxidation in the acidic range. OCl- works by dissolving the membrane wall of a cell making it possible for the chlorine to pass. HOCl and lower pH ranges use oxidation to destroy the membrane wall allowing the chlorine to pass. The fact that both range species must destroy the membrane wall of the cell to enter is what makes them dangerous to organics and regulated pesticides, they can kill you if you get enough.

OH- lye concentrate only takes 7 drops to kill an average size man!

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chlor*Organo* is neither corrosive nor oxidizing to the membranes of organic cells.

chlorOrgano utilizes Ionic Product for delivery. Ionic Product (IP) is the measurement of energy in water. We all understand using heat to bring water to a boil. This takes enough energy to bring the water to 200 degrees *(6.45 Ionic Product – cluster free)*.

One problem with heat is once you remove the heat, the energy starts to deplete, or the water starts to cool. Hot water is where the energy is the highest *(no clusters of molecules - steam)*, cold water is when energy is the lowest *(strongest cluster of molecules – ice).*

The other problem with heat, it is a pesticide. Heat will kill organics especially at 200 degrees - 6.45 IP. You will not last long, we all understand this, no one will argue this fact. Heat is used as the final preventative control for food, we cook it. To cook food is to kill all the contamination so it is no longer a danger, this is why we cook food to specific temperatures.

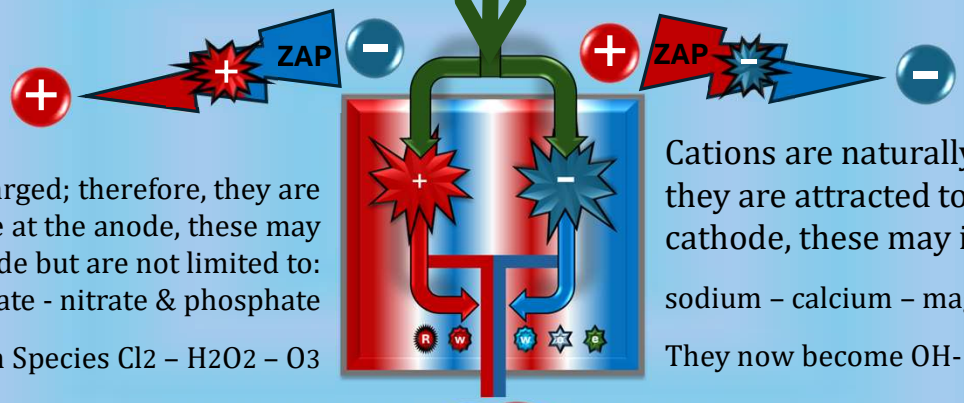
chlorOrgano ™ ~ 6.45 Ionic Product

Balanced & Bonded 1/-1 Neutral

Bonded dual polarity ion, positive dominant, dissolved in single molecule of H2O, with stored single bubble gas to OH-, balanced by hydrogen

Raw Source 7.4 pH
Less than 1 IP -8/+7

Raw Water - 15 unbalanced mixed ion molecule cluster at ambient temperature



Anions are naturally negatively charged; therefore, they are attracted to the strong positive charge at the anode, these may include but are not limited to:

chloride – sulfate – bicarbonate - carbonate - nitrate & phosphate

They now become Reactive Oxygen Species Cl2 – H2O2 – O3

Cations are naturally positively charged; therefore, they are attracted to the strong negative charge at the cathode, these may include but are not limited to:

sodium – calcium – magnesium – potassium & ammonium

They now become OH- and Hydrogen Gas

6.45 Ionic Product is structure or cluster free. Each molecule carries the same dominant charge. As we all understand with magnets, 2 like polarity objects can not stick together, they repel each other.

This same action in water with ions is the measure of IP, the stronger the repelling, the higher the IP.

Finished Neutral NaOC-
6.45 IP bonded -1/1 pKw
Negative Dominant
Dissolved Cl2 – H2O2 – O3 - H

Absorption through the membrane of an organic cell has specific requirements. A single molecule of water with a single component. This is described as -1/1, the requirement of aquaporin transport.

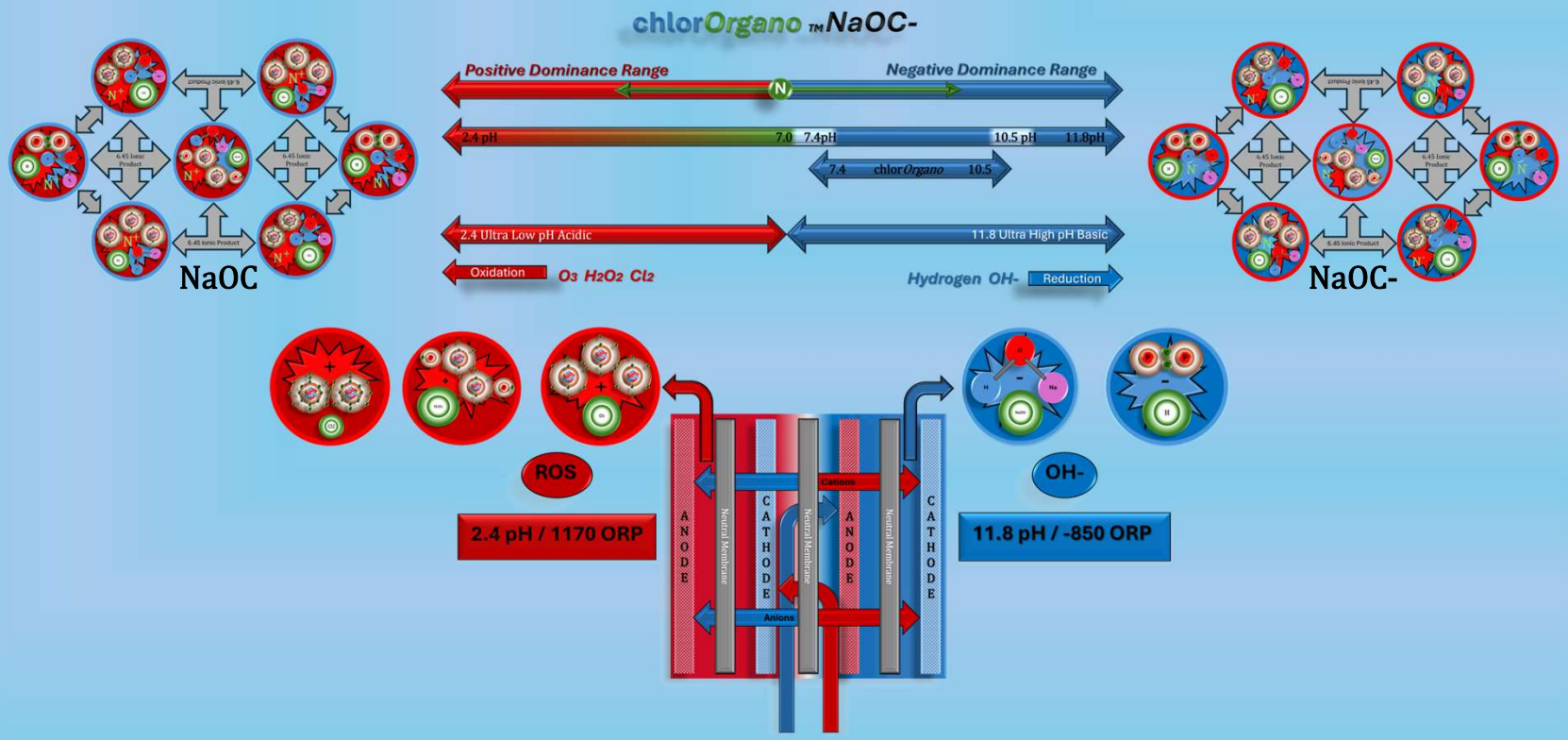
Some aquaporins accept negative charges, some positive charges.

chlor*Organo* ~ NaOC / NaOC- Manufacturing

Custom built neutral chambers for producing strong oxidation in tandem with strong reduction stores ROS to OH-.
Control over negative and positive dominance sets the strength and range.

The higher or Lower respective dominance, the stronger the medium concentration.

chlor*Organo* NaOC- is in the high range from 7.4 pH RTU to 10.5 pH Stored Concentrate



chlor*Organo* *6.45 Ionic Product Delivery – Bio Selective & SAFE for Organics*

chlor*Organo* manufactured as a bonded dual polarity ion dissolved in a single molecule of water and charged to 6.45 IP is not only compatible with specific aquaporins, chlor*Organo* as -1/1 neutral and is compatible with all aquaporins and why it is 100% absorbable to all cells.

As chlor*Organo* utilizes 6.45 IP for delivery through the water channel of an aquaporin it is not relying on oxidative or corrosive environments for delivery. The pH and ORP have no responsibility to the delivery. As the pH and ORP have no responsibility they can be in a neutral range, in neutral range the EPA does not recognize chlorine as a hazard or risk to organics and for this reason it is not regulated as dangerous and does not fall under the EPS jurisdiction for compliance.

chlor*Organo* is manufactured using electrolysis and NaCl as an electrolyte. Unlike HOCl products manufactured by electrochemistry single polarity, chlor*Organo* does not use HCl as a pH reducer *(5.0-6.5 HOCl range)* and ORP enhancer *(800 and above typically 950 as HOCl).* chlorOrgano uses only pure NaCl electrolytes.

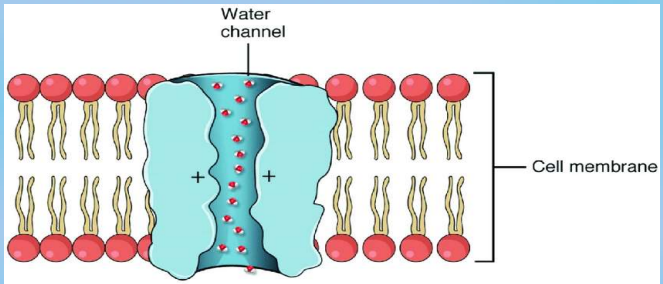
chlorOrgano using only NaCl electrolytes, electrolyzed in dual polarity for balance in neutral are naturally bio selective in action. Organics use NaCl for balance and manufacturing of our own organic gases at 7.4 pH. chlor*Organo* is matching this range and manufacturing method although using a programed electrolysis process for instantaneously producing organochlorine as an alternative to the slow natural organic process.

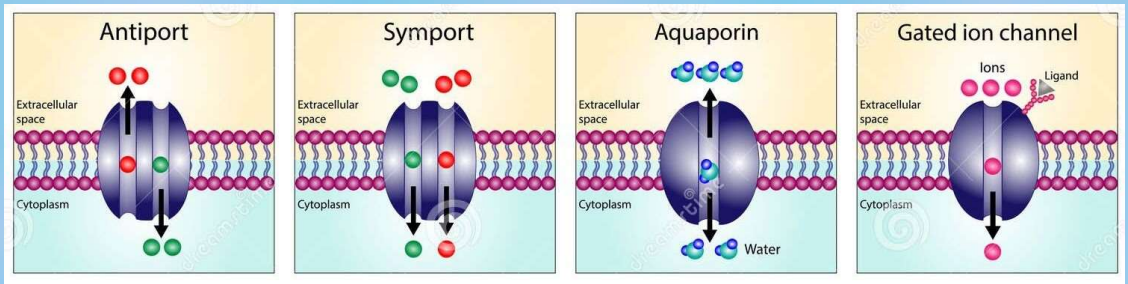
With control over power applied, polarity offsets, and electrolytes, with out the worry of life in an organic generator *(living organics),* we can produce very quickly using a high electrical application, producing mediums from ready to use, to stored concentrates just by increasing the TDS concentration of NaCl and power applied.

The Oceans are 35,000 ppm 9% NaCl *(3,150 ppm NaCl)* chlor*Organo* is 2% NaCl at about 3500 ppm TDS from NaCl. This is in part of what keeps chlor*Organo* safe and compatible to organics, and off the EPA Pesticide lists.

To be safe for organics the delivery must pass through an aquaporin with out damage to the membrane of the cell. This subject is generally reserved for absorption. In context to pesticide products, they can never be absorbed as they are clusters of molecules and components, polymers. chlor*Organo* is engineered for absorption.

chlorOrgano having a neutral -1/1 bonded dual polarity ion is compatible for all aquaporin traves as described below.





Aquaporins, also known as water channels, are protein channels that ***selectively transport water molecules*** *and* ***small neutral molecules through cell membranes****. While aquaporins have nonpolar parts that allow them to embed in the membrane, they also have* ***positively charged residues that can interact with both positive and negative charges:***

- *Positive charges repel protons*
- *The arginine residue (Arg-195) at the constriction of the aquaporin channel has a strong positive charge that repels protonated water (H3O+). This prevents protons from leaking through the channel.*
- *Negative charges facilitate adhesion*
- *The positively charged amino acid residues in the extracellular loops A and C of lens Aquaporin 0 interact with the negative charges in the plasma membrane to help cells adhere to each other.*
- *Electrostatic barriers prevent trapping*
- *Electrostatic barriers of opposite polarity prevent negatively charged hydroxide ions from becoming trapped within the NPA region.*

In the end this is a fantastic technology and a great range to use it in. The ranges of NaOC from 7pH to 2.4 pH have been used, lab tested and certified in all sorts of methods. The NaOC- range 7.4pH ~ 10.5pH has been utilized in a wide range of environments. All data collected is from operational use over the last 7 years of Industrial, Commercial, Agriculture, Food Service, and residential.

Ready to Use no rinse porous surface sanitizing cleaners
Commercial Sanitation
Water sanitation
Aerosol Release
And others

This is the most advanced system and medium for this purpose available on the planet.

The equipment is industrial scaled, and time tested over decades of continuous advancements.

Paul E. Seaver
PBSWC Inc.

Brought to you by:

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