

Disease Prevention and Control in 21th Century
Slightly Acidic Electrolyzed Water Device



Worldwide Patent

NeuKocyte®

Company Profile



In 1811, Sir Humphry Davy, English Chemist, found Hypochlorous acid (HClO), the most effective disinfectant. 12 years later, Michael Faraday, British physicist, successfully used electrolysis to produce hypochlorous acid. The weak point of hypochlorous acid is easy to break down, It can not keep for a long time. For the science and technology on that time, they could produce a small quantity only so that it could not widely be used. The First World War, hypochlorous acid has been used for the rapid treatment of wounds and trauma of soldiers. After many years in the study of wound healing, "JOURNAL OF WOUND CARE", British, has published the effectiveness of the hypochlorous acid treatment of ulcers in January 2006.

In this decade, the mutation of bacteria and viruses that they are becoming a crisis in our lives. Our technique team based on the hypochlorous acid and the technology of slightly acidic electrolyzed water from Japan to successfully invent a device of producing hypochlorous acid. It is named **NeuKocyte®**. Through the popularity of the **NeuKocyte®** device, we could control the threat of pathogens, providing to the public with a safe, sterile living space and help the enterprises to establish a set of safety and health management mechanisms.

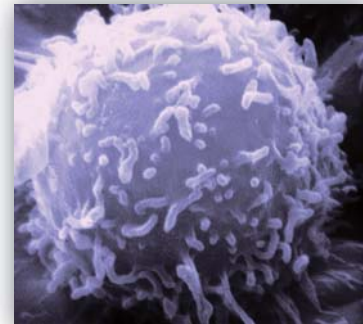
In America and Japan, hypochlorous acid has widely been used in food processing industry, agriculture and hospital sterilization.

NeuKocyte® is not only as same as the hypochlorous acid in safety, effective and environmentally friendly but also to have the advantage in convenient to use and lower running cost. Therefore it may be known as the most effective of disease prevention and control in 21th Century.

Ingredient and Characteristic

The main ingredient of NeuKocyte water : Hypochlorous Acid

In Biology , Hypochlorous Acid (HClO) is used by Neutrophils Leukocyte to fight invading pathogens. Our device can also produce the same disinfectant so that it is named **NeuKocyte®**. In the chemical reaction , chlorine dissolved in water to form hypochlorous acid (HClO) and hypochlorite ion (ClO^-) . The bactericide of (HClO) is more powerful than (ClO^-) about 80~150 times. For the concentration, the ratio of Hypochlorous acid (HClO) and hypochlorite (ClO^-) would be changed with different pH values. The recommended pH range for the chlorination is 5 to 7 where HClO becomes the main bactericide.



The characteristic of NeuKocyte® water

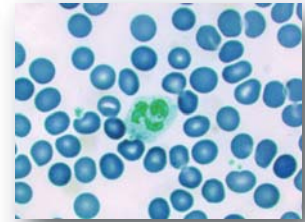
- Convenience : no need dilution and no need rinsing with tap water.
- Safety : low concentration, no odor, non-toxic, no residue and no irritate to skin, mucous membrane and eyes; approved as food additive by the Ministry of Health, Labour and Welfare,JP.
- Effective : can kill most of the microorganism in a few seconds. It can also inactivate Noro, MRSA, H1N1, H5N1 and HAV virus.
- Environmental-friendly : can be allowed to drain away, no harm to environment.
- Spray :can inactivate bacteria, fungi or virus in the air. In addition, with the humidifier for spraying, it can not only improve the air humidity but also prevent diseases infection.
- Note: Use humidifier to fog 0.5um particle size of hypochlorous acid in the air for 60 minutes. The effectiveness of disinfection is higher than UV light technology.



Bactericidal

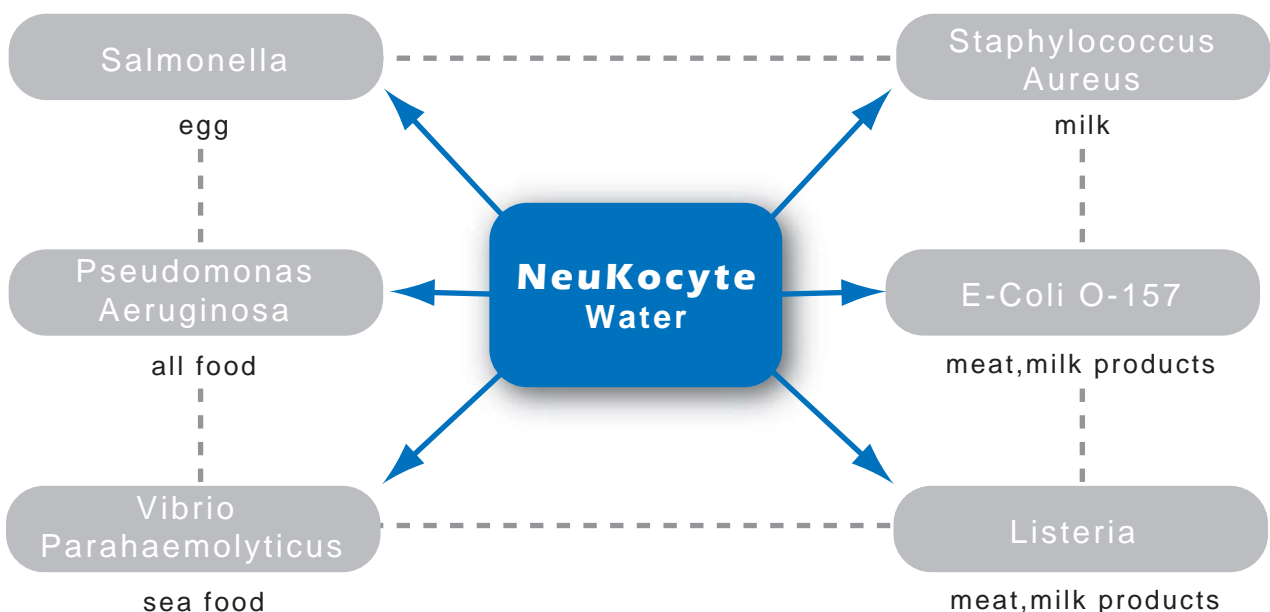
Performance of NeuKocyte water against bacteria

Cultures	Before (CFU/mL)	After (CFU/mL)
E-Coli (O157:H7)	6.0×10^6	<100
Salmonella enteritidis	3.8×10^6	<100
Staphylococcus aureus	9.9×10^5	<100
Bacillus subtilis	5.9×10^5	<100
Cladosporium species	1.0×10^4	<100
Canadida albicans	8.8×10^4	<100
Pseudomonas aeruginosa	1.5×10^6	<100



- This disinfection test, mold need 3mins, spores need 30mins and other bacteria need 30 seconds
- Test sample (S.A.E.W) : HCIO - 15ppm, pH6.2
- Laboratory : SGS

Neukocyte water against bacteria that cause food poisoning



Neukocyte water is equivalent to the "Slightly Acid Electrolyzed Water" which defined by the Ministry of Health , Labour and Welfare ,JP.

Safety and Efficiency

Safety Test and Virus Inactive Test

Test Item	Method	Laboratories	Test Result
Skin Irritation Test	Tape Test	幸栄化学産業株式会社	No negative result after 48 hrs.
Safety Test	Mice Feeding	財団法人 日本食品分析センター	No negative results and 2000mg/kg per day continuous feeding for 14 days.
	Mice Inhaling	岡山大学 医学部	No change in blood biochemical tests , nor poisoning symptoms after 3 months continuous inhalation.
HIV Inactive Test	Joint Guidelines	Joint ILO/WHO guidelines on health services and HIV/AIDS(International Labour Office , Geneva ,2005)	hypochlorous acid solution can be expected to inactivated HIV virus.
H1N1 Inactive Test	Virus Inactive Test	財団法人 日本食品分析センター	Virus is dead in 30 seconds
Noro Inactive Test	RT-PCR	ビジョンバイオ株式会社	Virus is dead in 5 minutes
Food Additive Approval		日本厚生労働省	Since 2002, June
		U.S. Food and Drug Administration, FDA	List of Indirect Additives Used in Food Contact Substances Doc.No. 8132 (HYPOCHLOROUS ACID)

Comparison of NeuKocyte and Other Disinfectants

	NeuKocyte	Bleach	ClO ₂	Ozone	Alcohol
Raw Material	Food-grade electrolyte	Salt	Salt, HCl	Oxygen, water	Ethanol
pH Value	pH. (5-7)	pH. 12	pH.(6-10)	Neutral	Neutral
Bactericidal	Strong	Moderate	Strong	Strong	Moderate
Concentration	10-30ppm	>200ppm	10-100ppm	0.3-5ppm	70-75%
Corrosive	* Slight impact on matel * Plastic does not decay	* High impact on matel * Plastic does decay	Even stainless steel will be corroded with concentration exceeding 150ppm.	* High impact on matel * Plastic does decay	No
Toxicity	No	Stimulate the skin, mucous membranes and respiratory tract.	High concentration causes central nervous system ideath.	Stimulate the skin, mucous membranes and respiratory tract.	Low
Odor	Slight chlorine odor	Choking smell	Choking smell	Choking smell	Smell
Decomposition	Yes	Drain away will destroy the septic tank or sewage treatment tank of biodegradability.	Yes	Yes	Yes
Spray	Effective	Harmful	Inhaled may cause respiratory discomfort. It may cause skin redness, itching.	Harmful	Explosion
Others	It is a safety water. It could keep for 6 months when it stored in a closed opaque container.	* Dilution must be noted. * THMs would be form.	* Strong oxidant, very short storage period * More than 10% and 100°C may cause explosion	* Poor stability * stay at very short time	Accurate Concentration

Application

Applications

Rinsing

Rinsing food with **Neukocyte®** water directly, It can kill the fatal bacteria, remove the residual pesticide , and maintaining the fresh of food .



Washing

Lower concentration of **Neukocyte®** water is good for washing. It can directly apply to washing machine for disinfection both machine and clothes.



Spray

Neukocyte® water is safe. Spraying **Neukocyte®** water, it can deodorize and disinfect in the air.



Soaking

Soaking tableware, cups or rags in **Neukocyte®** water for a few minutes, it is unnecessary to wash again with tap water before air-dry. It is simple disinfection.



Wiping

Regularly, wipe the touchable items or mop the floor with **Neukocyte®** water to disinfect your surroundings.



Wash Hand

Neukocyte® water does not irritative to skin. Washing your hand regularly can use to protect your health.



Pet Sanitary

Neukocyte water can be used to shower the pets , clean the doghouse and rinse waste. Meanwhile, it may protect you from the infection of the common diseases between humans and animals.



Device Details

Specification

Model No. :	MAX-30P
Bactericide :	Hypochlorous Acid (HCIO)
HCIO Concentration :	10 ~ 30ppm
Output Capacity :	150 ~ 450 Litre / hr
Power Consumption :	DC12V - 60W
Turn On Method :	Water Flow Activated
Electrolyte Location :	External
Dimension :	L26XD10XH26cm
Weight :	2.5Kg



NeuKocyte® is recommended as a disease prevention product by the Taiwan Department of Health, CDC.

Official website : Institute for Biotechnology and Medicine Industry
http://s2.misa.com.tw/anti/client/Plan_ProductList.php?Page_Num=2



Dealer

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