



Ecofrom

Product introduction

Ecofrom -

We offer a wide range of eco-friendly disinfection systems by a patented technology based on OH Radical sterilization techniques and HOCl disinfection solutions to the companies and domestic consumers at home and abroad.





EcoFrom is the company that cares for the environment!
Can we sterilize just simple and safe?
 That question is the beginning of EcoFrom's technology.

Sweep bacteria of kitchen and bathrooms and hard-to-reach places.
 Eco-sterilization water which generated by EcoFrom's unique technology removes various bacteria and harmful chemical ingredients simply and safely.

EcoFrom's sterilizing water restored to water again after the sterilizing action and with this new eco-friendly disinfection technology, EcoFrom is contributing to the sustainable development of coexistence of human and nature.

EcoFrom is offering various eco-friendly sterilizing systems which based on patented technology for OH Radical sterilization water generation and HOCl sterilization solution to domestic and foreign companies and consumers, And EcoFrom is keeping a place of technology leader as ensuring leading-edge technology in eco-friendly sterilization field with accumulated know-how through a variety of product development.

EcoFrom's products patronage by consumers of more than 10 countries around the world including US, UK, Denmark, Japan, China, Turkey and Australia, and recognized for excellence around the world, such as awarded 'Tomorrow's Cleaning Product Awards' in 'CLEANING PRODUCT AWARDS 2016' in UK.

EcoFrom will do the best to be the company which working for healthy and comfortable lives of people around the world.

Major Awards

- 2007 | Awarded of Excellence (Korea Patent Information Director Award) for Republic of Korea Patent Award
- 2008 | Awarded 'Excellent Established Company Award' (Grantor: Chairman of Korea Technology Credit Guarantee Fund)
Awarded 'Good Design Award' (Korea Institute of Design Promotion)
AAwarded 'Grand Prize for Management innovation' (Hankook Ilbo)
- 2010 | Awarded Grandprix of 'Customer Satisfaction Award' (Newspaper Money Today)
- 2013 | London 'Awarded 'Tomorrow's Cleaning Product Awards' in 'CLEANING PRODUCT AWARDS' in UK.



Cooperator



History

- 2014 | Release of Happycall domestic brown-rice germinator <ssaktium>
- 2013 | Domestic HOCL generator' Awarded 'Tomorrow's Cleaning Product Awards' in 'CLEANING PRODUCT AWARDS' in UK.
Appointed as Promising Export Company (the Small and Medium Business Administration) awarded 'Best Environmental Product Award' at Seoul Fair 2013.
- 2012 | Selected from Seoul as a 'Hi-Seoul brand company'.
- 2011 | Acquire ISO 14001 certification.
- 2010 | Selected from Seoul as 'Hi-Seoul Brand company'
Registered as corporate company of Samsung Electronics LTD. (sterilization system module for Smart Air-conditioner supply agreement)
Makes an appearance at SBS 'The force of SME in Korea' (Aug. 4th)
Awarded Grandprix of 'Water Sterilizer category' for Republic of Korea Customer Satisfaction Award.
- 2009 | Registered as corporate company of HAAN. (sterilization system module of Kitchen appliances supply agreement)
Denture Sterilizer <HYO>, Japan medical equipment manufacturing license registration. Start to export to Japan.
Charter Application of Institute of Environmental Technology affiliated with Company(Korea Industry Technology Institute)
Selected as Innovative SMEs (INO-BIZ).
- 2008 | Awarded of Innovation Awards for 'Republic of Korea Superior SME Awards' Medisu, the fruit-vegetable cleanser is selected as 'Good Design' (Korea Institute of Design Promotion)
- 2008 | Make an appearance at KBS2TV live program "Morning in the world". Awarded excellence at 2008 ASIA AWARD.
Denture sterilizer selected as preferential purchase recommended product from the Patent Office
Selected as Innovative SMEs (INO-BIZ).
'The Domestic Sterilizer' of EcoFrom Co. LTD., makes an appearance at MBN.
Awarded 'Excellent Established Company Award' at 'Ceremony for Establishment of a business in Republic of Korea 2008'
- 2007 | Denture sterilizer <HYO> makes an appearance at SBS "Morning Wide"
IDenture sterilizer <HYO> selected as '100 Excellent Patented Products'
IAwarded of Excellence (Korea Patent Information Director Award) for Republic of Korea Patent Award 2007.
- 2006 | Make a supply agreement of electrolysis sterilization filter for humidifiers with Han-II Electronics Co. LTD.
Conversion to a corporation (EcoFrom CO., LTD)
Confirmed as venture business (Korea Technology Credit Guarantee Fund).
Acquire ISO 9001 certification
- 2005 | Selected as a business incubator company at Seoul Business Agency (SBA)-affiliated organization, <Seoul New Technology Incubator>.
- 2004 | Established private company (ETECH).

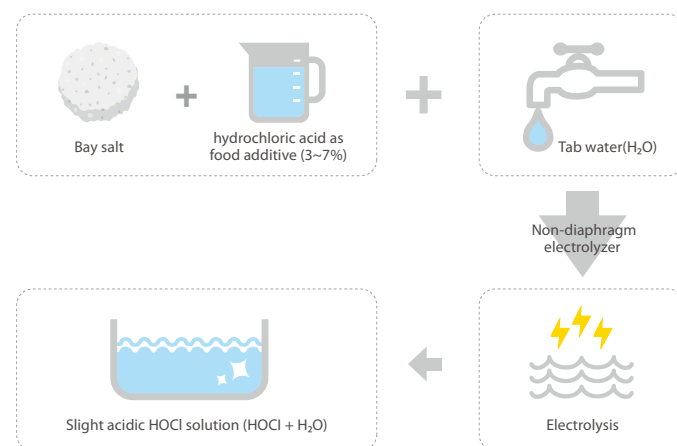
Technology of slight-acidic hypochlorous acid(HOCL) generation

What is slight-acidic hypochlorous acid (HOCL)?

HOCl(hypochlorous acid) is a substance that has a strong sterilizing power, which is generated when electrolyzing diluted hydrochloric acid (HCl) in a undiaphragmed- electrolytic bath. Slight-acidic hypochlorous acid is primarily used for food hygiene, disinfection of crop diseases, and prevention of in-hospital infection or disinfection of appliances. pH5~6.5, hypochlorous acid is safe disinfectant approved as a food additive from the Food and Drug Administration, Nov. 2007 and shows very strong sterilizing power with pH5~6.5, low active chlorine concentration 10~30ppm.

Institution	Approval / Permission facts	Year
EPA	Approved HOCl generator as disinfectant production equipment	1998
USDA	Approved the use of various bacteria such as E. coli, O-157 and Salmonella	1999
FDA	Received GRAS(approved of using as washing water of fruit and vegetables)	2000
FDA - FSIS	Approved as dead poultry and meat disinfectants	2006
KFDA	Approved as a disinfectant of food additives and utensils	2007 - 2008

The principle of slight-acidic hypochlorous acid (HOCL) generator <Reference, Table 1>



Electrolyzing water($\text{Cl}^- + \text{H}_2\text{O} \rightarrow \text{ClO}^- + 2\text{H} + 2\text{e}^-$) containing a small amount of chloride ions (Cl^-) in undiaphragmed- electrolytic bath to generate a hypochlorous acid (HOCl) water. As occasion arises, It can also be generated high concentration hypochlorous acid water by add exclusive hypochlorous acid agent. (Increase the sterilization ability during treating severe contamination place.)

Reference, Table 1

Anode	$\text{HCl} \rightarrow \text{H}^+ + \text{Cl}^-$ $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}^-$ $2\text{Cl} + \text{H}_2\text{O} \rightarrow \text{HOCl}(\text{hydrochloric acid}) + \text{HCl}$
Cathode	$\text{HCl} \rightarrow \text{H}^+ + \text{Cl}^-$ $2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2$

Reference, Table 2

Korea Conformity Laboratories, College of Medicine Soon Chun Hyang University,
FDA Microbac USA, Penn. State University Department of Veterinary and Biomedical
Sciences, Hiroshima health association

Bacteria	sterilizing power
E. coli	99.9%
Listeria	99.9%
Methicillin-resistant Staphylococcus	Sterilization
Norovirus	99.9%
Swine Influenza Flu	99.9%
Salmonella	99.9%
Vancomycin-resistant enterococci	99.9%
Pseudomonas aeruginosa	99.9%
Resistant Klebsiella pneumoniae	99.9%

Effects of technology and benefits

1. Eco-friendly sterilization

- It is an advanced eco-friendly sterilization technology that sterilize only with water.
- You don't need to add extra detergent or chemical products to water because generated OH Radical changes water to sterilization • deodorization water.
- No secondary contamination occur because OH Radica and oxygen anions generated by underwater discharge is reduced with water after sterilizing action.

2. Strong bactericidal effect

- Kill 99.9% of various fungi, virus, and bacteria such as Salmonella, intestine vibrio bacteria, Staphylococcus aureus, Pathogenic E. coli (food poisoning), Streptococcus mutans (caries causing bacteria), candida (Acne, athlete's foot, inflammation), trichophyton (athlete's foot), pseudomonas aeruginosa, listeria, serrata, vancomycin-resistant enterococci, Resistant pneumobacillus, super bacteria, noro virus, avian influenza and so on.
- Kill most of bacteria thoroughly within 30 sec~ 10 minutes. <Reference, Table 2>

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REDA75 (continued)

Table 2
Nonfinancial Effectiveness and Controllability Related Controls

QUEST 4 (B) (BASIC) (100%)		
(Index)	Nonfinancial Effectiveness Control	Controllability Control
12-1	Yes	Yes
12-2	Yes	Yes
12-3	Yes	Yes

(Circle values in the list of questions from which answers.)

Table 3
Nonfinancial Effectiveness and Controllability Related Controls

QUEST 4 (B) (BASIC) (100%)		
(Index)	Nonfinancial Effectiveness Control	Controllability Control
12-1	Yes	Yes
12-2	Yes	Yes
12-3	Yes	Yes

(Circle values in the list of questions from which answers.)

Table 4
Validity Control Results

QUEST 4 (B) (BASIC) (100%)
Valid Validity Control
(Circle valid values, circle none valid)

Stimulator	Pulse Recovery Control	Wave Burst Control
Stim 1	0.5	0.5
Stim 2	0.5	0.5
Stim 3	0.5	0.5
Stim 4	0.5	0.5
Stim 5	0.5	0.5
Stim 6	0.5	0.5
Stim 7	0.5	0.5
Stim 8	0.5	0.5
Stim 9	0.5	0.5
Stim 10	0.5	0.5
Stim 11	0.5	0.5
Stim 12	0.5	0.5
Stim 13	0.5	0.5
Stim 14	0.5	0.5
Stim 15	0.5	0.5
Stim 16	0.5	0.5
Stim 17	0.5	0.5
Stim 18	0.5	0.5
Stim 19	0.5	0.5
Stim 20	0.5	0.5
Stim 21	0.5	0.5
Stim 22	0.5	0.5
Stim 23	0.5	0.5
Stim 24	0.5	0.5
Stim 25	0.5	0.5
Stim 26	0.5	0.5
Stim 27	0.5	0.5
Stim 28	0.5	0.5
Stim 29	0.5	0.5
Stim 30	0.5	0.5
Stim 31	0.5	0.5
Stim 32	0.5	0.5
Stim 33	0.5	0.5
Stim 34	0.5	0.5
Stim 35	0.5	0.5
Stim 36	0.5	0.5
Stim 37	0.5	0.5
Stim 38	0.5	0.5
Stim 39	0.5	0.5
Stim 40	0.5	0.5
Stim 41	0.5	0.5
Stim 42	0.5	0.5
Stim 43	0.5	0.5
Stim 44	0.5	0.5
Stim 45	0.5	0.5
Stim 46	0.5	0.5
Stim 47	0.5	0.5
Stim 48	0.5	0.5
Stim 49	0.5	0.5
Stim 50	0.5	0.5
Stim 51	0.5	0.5
Stim 52	0.5	0.5
Stim 53	0.5	0.5
Stim 54	0.5	0.5
Stim 55	0.5	0.5
Stim 56	0.5	0.5
Stim 57	0.5	0.5
Stim 58	0.5	0.5
Stim 59	0.5	0.5
Stim 60	0.5	0.5
Stim 61	0.5	0.5
Stim 62	0.5	0.5
Stim 63	0.5	0.5
Stim 64	0.5	0.5
Stim 65	0.5	0.5
Stim 66	0.5	0.5
Stim 67	0.5	0.5
Stim 68	0.5	0.5
Stim 69	0.5	0.5
Stim 70	0.5	0.5
Stim 71	0.5	0.5
Stim 72	0.5	0.5
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Stim 74	0.5	0.5
Stim 75	0.5	0.5
Stim 76	0.5	0.5
Stim 77	0.5	0.5
Stim 78	0.5	0.5
Stim 79	0.5	0.5
Stim 80	0.5	0.5
Stim 81	0.5	0.5
Stim 82	0.5	0.5
Stim 83	0.5	0.5
Stim 84	0.5	0.5
Stim 85	0.5	0.5
Stim 86	0.5	0.5
Stim 87	0.5	0.5
Stim 88	0.5	0.5
Stim 89	0.5	0.5
Stim 90	0.5	0.5
Stim 91	0.5	0.5
Stim 92	0.5	0.5
Stim 93	0.5	0.5
Stim 94	0.5	0.5
Stim 95	0.5	0.5
Stim 96	0.5	0.5
Stim 97	0.5	0.5
Stim 98	0.5	0.5
Stim 99	0.5	0.5
Stim 100	0.5	0.5

[illegible]

Area Title	1.5 Minutes for 9-12 min	2.5 Minutes for 14-17 min	3.5 Minutes for 20-23 min
ARL activities			
ARL 101	100%	100%	100%
ARL 102	100%	100%	100%
ARL 103	100%	100%	100%
ARL 104	100%	100%	100%
ARL 105	100%	100%	100%
ARL 106	100%	100%	100%
ARL 107	100%	100%	100%
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ARL 109	100%	100%	100%
ARL 110	100%	100%	100%
ARL 111	100%	100%	100%
ARL 112	100%	100%	100%
ARL 113	100%	100%	100%
ARL 114	100%	100%	100%
ARL 115	100%	100%	100%
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ARL 410	100%	100%	100%
ARL 411	100%	100%	100%
ARL 412	100%	100%	100%
ARL 413	100%	100%	100%
ARL 414	100%	100%	100%
ARL 415	100%	100%	100%

■ FDA Microbac USA, 'Virucidal Hard-surface efficacy test - Murine Norovirus' - 'Murine Norovirus was completely inactivated within 10 minutes.'

■ Department of Veterinary and Biomedical Sciences, The Pennsylvania State University "Evaluation of "Neutral Electrolyzed Water" Disinfectant on Inactivation of Avian Influenza Virus and Other Avian Viruses" - "Avian influenza virus and other avian viruses are killed 100% within 10 minutes"

Technology of slight-acidic hypochlorous acid (HOCL) generation

3. Powerful disinfection and cleaning ability for food reserves

- When it is sterilized, no toxic substances such as chloroform and trihalomethanes will be formed.
- Remove the residual pesticides and food poisoning bacteria.
- There is no odor and does not affect the food's original taste and tissue.

4. Powerful deodorizing ability <Reference, Graph 1>

- Sterilization of putrefying bacteria with strong oxidizing power to purify the air and removes odors.

5. Convenience and affordability

- All you need is water only! Production is easy. (Production time is within 5 minutes.)
- Quick and simple sterilization.
- No noise and vibration during sterilization.
- Unlike bleach or high concentrations of hypochlorous acid-based disinfectant, it doesn't occur discoloration and corrosion of the metal.
- It doesn't occur deformation of glass or plastic containers because of non-thermal sterilizing system.
- It can be used semi-permanently.

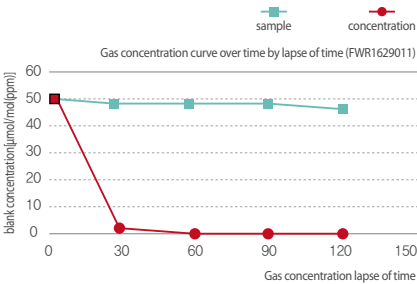
6. Outstanding safety

- HOCl has 70~80 times stronger sterilization power than chlorine sodium (NaOCl), which often called clorox. HOCl solution doesn't produce any irritating odor or hazard during process. Also, there is no irritating odor or skin stimulation when in use. Therefore, sterilization method with HOCl solution is superior. <From the presentation of Korea Institute of Machinery and Materials>
- HOCl solution is like a natural antimicrobial agent that produced to fight pathogens in the human body. <From US FDA research resource>
- Increased sterilization ability of the chlorine from tap water with unique technology of EcoFrom, it can be used as safe as normal tap water. (Sterilized water - pH5~6.5, tap water - pH 7~7.4)
- Using low voltage (DC2 ~ 48V) which safe on the human body, unlike existing other electrolysis method.
- Ozone (O₃) does not produced by active hydrogen ions generating system.
- Endocrine disruptors are not detected because it is non-heat sterilization method.
- Even when in contact with organic matter during sterilization, no toxic substances such as chloroform and trihalomethanes will be formed.
- It was recognized as a substance with no toxicity to humans (GRAS) in the United States FDA.
- Home Guard passed all of toxic, irritant, and carcinogenic test and got recognition at Japan Ministry of Health and Welfare.
- Hypochlorous acid (HOCl) is authorized as a food additives from the Ministry of Health and Welfare of Japan. Taken the determination of eligibility towards the standards (specification) of Hypochlorous acid and sodium hypochlorite which have the disinfectant, deodorizing and cleaning purpose among KFDA Announcement No. 2011-71 (11.30.2011) food additives and certified safety.

Reference, Graph 1

Test analysis of Korea Conformity Laboratories

Test Item	Test result			Test method
	blank concentration μmol/mol (ppm)	sample concentration μmol/mol (ppm)	Deodorization rate(%)	
Deodorizing test Ammonia NH ₃	0min	50	50	0.0
	30min	49	1	98.0
	60min	49	0	100.0
	90min	49	0	100.0
	120min	49	0	100.0
				Method requested by client



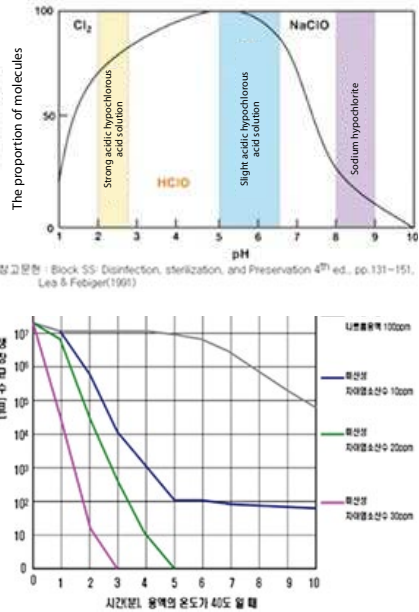
Japan Food Research Laboratories 'hand disinfection test'



Reference, Graph 2

Japan food analysis center, 2002
Compare the sterilization power between HOCl concentration (30ppm, 20ppm, 10ppm) and Clorox (100ppm)

* The chlorine (sterilization) ratio of the pH



7. Differences with other disinfectant

- Hypochlorous acid (HOCl) and sodium hypochlorite (Chlorine bleach, NaOCl) are entirely different.
- While HOCl sterilization is safe for users and the environment, chlorine bleach (sodium hypochlorite) have been reported side effects such as a pungent smell, testicular cancer, skin cancer, and burn.
- The high concentration of Hypochlorous acid-based disinfectant under pH3 occurs chlorine gas which harmful to the human body. However, the concentration of EcoFrom Hypochlorous acid sterilizing water is about 5~6.5(concentration necessary for everyday life), so it does not occur a large amounts of chlorine gas.
- The sterilization ability of EcoFrom Hypochlorous acid sterilizing water is about 80 times stronger than chlorine bleach.thermal sterilizing system.
- It can be used semi-permanently. <Reference, Graph 2>

Application of Technology

1. Application by area <Reference, Table 1>

2. Well-being products for home

- We develop and sell more hygienic and eco-friendly new concept well-being products by apply HOCl sterilization system to kitchen and household appliances.
- Apply to the large companies' kitchen and household appliance :
Air conditioner, humidifier, air purifier, laundry, dish washer, steam vacuum and so on.
- Development and sales of own-brand products :
HOCl sterilization water generator.

3. For healthcare and food-processing

- Medical sterilization system
- Food manufacturing water and disinfection systems for agricultural products processing.

4. For other environmental industries

- Simple water purification system
- Industrial waste water treatment system
- Agriculture (large-scale hydroponic cultivation, organic farming)
- Water treatment systems for fish farm and pools

Reference, Table 1

Application Field	Application Examples	How to use and effects
Food Manufacturing And food service facilities	Fresh vegetable cultivation Organic Food Manufacturing, school, Businesses, government offices, hospitals, military bases, Hotels and restaurants	Sterilization of food materials and removing pesticide residues, hand sanitizing, sterilization of kitchen utensils, equipment and drainage, disinfectant and sterilization of bedroom, indoor, kitchen and toilet
Agriculture	Cultivation facilities (Strawberries, cucumbers, tomatoes, lettuce, etc.) Fruit, flowers cultivation	Disinfectants alternative (spray on the leaves and stems) Eco-friendly farming, seed disinfection, Disinfection of harvested fruits and vegetables
Stockbreeding	Pen and a dairy	Spray disinfection inside of the barn, deodorization, disinfection of machinery and equipment, Foot-and-mouth disease, hog cholera and other various virus sterilization disinfection of abattoirs and meat processing houses
Medical	Hospital, dental, veterinary hospitals	Hand sanitizer, mouthwash, body disinfection, instrument disinfection Disease management, wound sterilization, burns scarring treatment Indoor air purification, deodorization
Air Purification	Enclosed places such as Schools, daycare centers, kindergartens, Nursing care centers, nursing homes, Restaurant, food factories, Mart and Movie theatres	Indoor air purification Air purification of multi-use facilities
Housekeeping	Kitchen, bathroom, nursery, bedroom, living room, refrigerator, shoe box, car interior	Kitchenware tableware disinfection & drying, remove pesticide residue from food materials, Odor and allergen air cleaning and deodorization, Toilet sterilization & deodorant, toothbrush sterilization, bedding sterilization, remove detergent residue after wash-drying Refrigerator and shoe box inside deodorant, deodorizing car interiors

HOME GUARD

Home Guard is the safe home-made eco-friendly sterilizing water with natural ingredients.

Circular base specification

- **Product name :**
Electrolysis sterilizing · deodorizing water generator
- **Model name :** ECL-3010
- **Properties of the products :**
Hypochlorous acid (HOCl) 10~20ppm / ℓ, pH 5.0~8.5
- **Rated Voltage :**
Input AC 220V 60Hz, • Output DC DC 9V 3.0A
- **Product Size :** 134x134x290 (mm)
- **Weight :** 478g
- **Capacity :** 400mℓ
- **Power Consumption :** About 23W
- **Materials :** ABS + PP

Square base specification

- **Product name :**
Electrolysis sterilizing · deodorizing water generator
- **Model name :** ECL-3010
- **Properties of the products :**
Hypochlorous acid (HOCl) 10~20ppm / ℓ, pH 5.0~8.5
- **Rated Voltage :**
Input AC 220V 60Hz, • Output DC DC 9V 3.0A
- **Product Size :** 100x100x280 (mm)
- **Weight :** 466g
- **Capacity :** 400mℓ
- **Power Consumption :** About 23W
- **Materials :** ABS + PP



Reference, Table 1

Deodorization ability test of domestic deodorant products (Comparison with other commercially available textile deodorants, Consumers Union of Korea)

Deodorization ability of HomeGuard (ammonia: after 30 minutes - 98%, after 60 minutes - 100%)
Inspection of Korea Environment Merchandise Testing Institute

Deodorization ability of deodorant products

Product name	Febreze (Korea P & G), Febreze plus (Korea P & G), Care (LG), Shout (Johnson & Johnson's Korea)
Deodorization conditions	5 minutes later a weak odor, even 40 minutes later odor lasts Bad odor doesn't remove within 10 minutes and the same even after longer period of time
Subjects	Smell of kimchi, bulgogi, and tobacco
Clothing experiment	Cotton, wool

Test result of Competition deodorant manufacturer

Classification	Ammonia	Trimethylamine	Hydrogen sulfide	Methyl mercaptan
30 minutes later	31.7%	35%	35%	16%
6 hours later	86.7%	74.0%	74.0%	85.0%

Unsuitable for purpose of immediate deodorant

pH comparison

Product name	pH	Remarks
Febreze	PH3.6	If acidity is high (under pH 5), cotton or rayon cloths can damage after considerable space of time
Febreze plus	PH4.1	The stain found on silk, cotton and wool at this test
Care	PH4.12	

Reference, Table 2

Classification	Bacteria measurements before using HomeGuard	Bacteria measurements after using HomeGuard
Toothbrush	176	22
Keyboard	215	9
Hand	185	3
Orange	436	15
Cutting board	654	50
Toys	170	30
Cellphone	77	2

Owned intellectual property rights / certificates / awards



Account

Medical device registration at Japan Ministry of Health and Welfare.

- Home Guard passed the bactericidal test of Department of Veterinary and Biomedical Sciences, Penn. State Univ. of USA.
- Home Guard obtained certification of European standards for medical disinfection substances from Germany.
- Home Guard passed the sterilization standard of at Japan Ministry of Health and Welfare.
- Home Guard passed the sterilization standard of Soon Chun Hyang Medical University, and diagnostic medicine department of Korean Food and Drugs Administration.
- Home Guard passed the deodorization and sterilization standard of Korea Conformity Laboratories.
- Home Guard awarded 'Tomorrow's Cleaning Product Awards' in 'CLEANING PRODUCT AWARDS' in UK.
- Home Guard is exported to over 10 countries around the world including Japan, US, UK, Denmark and German deodorizing water generator with natural ingredients.
- Home Guard can generate electrolysis sterilizing · deodorizing water easily at home.
- Home Guard is safe sterilizing.

Strong Point

1. Using only natural vita salt and water, you can create a high level Hypochlorous acid easily in just 5 minutes.
2. Depending on the purpose, you can select generating low concentration (sterilization and washing food reserves, hand disinfection) and the high concentration of hypochlorous acid.(The disinfection of severely contaminated places)
3. Removes 99.9% of various bacteria and viruses, bacteria, fungi and harmful chemical composition.
(Source: Report from Germany Dipl.Bio.Torsten Koburger, report from Department of Veterinary and Biomedical Sciences, Penn. State Univ. of USA., Korea Conformity Laboratories, Osaka industrial technical laboratory of Japan and so on.)
4. Home Guard completely (100%) deodorize fish stink, cigarette odor and ammonia. (Korea Conformity Laboratories) <Reference, Table 1>

Usage <Reference, Table 2>

1. Kitchen : Kitchen tool sterilization, refrigerator deodorant, pesticide residue removal and cleaning of food reserves, air deodorizing.
2. Bathroom : Disinfection of toilet, washbasin, bathtub and bidet nozzles, mold removal, deodorizing
3. Interior : Removing bacteria and mites from bedding, carpets and sofa, shoes and shoe shelf deodorant, air purification
4. Others : Hand sanitizer, pet odor removal, clothing deodorization, car interiors deodorization

SANIROX

SaniRox is the safe sterilizing· deodorizing water generator with natural ingredients.

Specification

- **Product name :**
Electrolysis sterilizing · deodorizing water generator
- **Model name :** ECL-3010EU
- **Properties of the products :**
Hypochlorous acid (HOCl) 50~200ppm / ℓ, pH 5.0~8.5
- **Rated Voltage :** Input AC 220V 60Hz, Output DC 9V 3.0A
- **Product Size :** 100x160x300 (mm)
- **Weight :** 570g
- **Capacity :** 1000ml
- **Power Consumption :** About 48W
- **Materials :** ABS + PP



Account

99.999% deodorant of various foul odors in a moment!
99.999% sterilization of Swine flu, norovirus, super bacteria, Escherichia coli, Klebsiella pneumoniae, Bacillus anthracis and various pathogens and fungi in a moment!

Unlike other antibacterial fragrances on the market which contain surfactants and chemical composition, <SaniRox> is safe sterilizing· deodorizing water generator with natural ingredients. <SaniRox> can generate electrolysis sterilizing · deodorizing water easily at hospitals, restaurants, and so on.

<SaniRox> has passed safety tests and various virus, bacteria, fungi and odor removal tests from official certificate authorities of Japan, US, UK and Germany. And <SaniRox> is exported to over 10 countries around the world including Japan, US, UK, Denmark and Germany.

FDA, CE, EPA Registered in USA.

Strong point

1. Using only natural vita salt and water, you can create a high level Hypochlorous acid easily in just 5 minutes.
2. Depending on the purpose, you can select generating low concentration (sterilization and washing food reserves, hand disinfection) and the high concentration of hypochlorous acid (The disinfection of severely contaminated places).
3. Removes 99.9% of various bacteria and viruses, bacteria, fungi and harmful chemical composition.
4. Achieve recognition for safety and sterilization, deodorizing effect from very strict United States, Japan and Europe.
5. Achieve recognition for safety on account of passing toxic, irritant, carcinogenicity tests from Japanese Ministry of Health and Welfare.
6. Unlike other antibacterial fragrances on the market, <SaniRox> don't contain any kind of surfactants and chemical composition.
7. Adopt advanced IC safety circuit to prevent overcurrent and overheating, and simple one-touch operation.
8. It is economical in the semi-permanent use.

Usage

1. SaniRox removes pesticide residues in vegetables and fruits.
2. SaniRox removes strange odor and prevent food poisoning by cleaning and sterilizing meat and seafood.
3. SaniRox sterilize kitchen utensils, hospital appliances, and other various instruments.
4. Spray <SaniRox> to sterilize drain, the places easy to breed bacteria and fungi, and severely polluted places.
5. Spray <SaniRox> to deodorize, remove ticks and sterilize cloths, bedding, and smelly clothes.
6. Spray <SaniRox> in the room to sterilize the germs in the air and remove the odor.
7. SaniRox completely remove pet odors, food odors, cigarette odors, sewer odors, mildew odors and other living odors.
8. SaniRox used as hand sanitizer and in disease management.

Owned intellectual property rights / certificates / awards



Faucet-direct connection type hypochlorous acid (HOCl) solution produce unit _Eco Farm

ECO FARM

Make safe HOCl sterilizing solution which authorized as a food additive with faucet-direct connection unit!

- **Product name :**
Faucet-direct connection type hypochlorous acid (HOCl) solution produce unit
- **Model name :** ECOFARM-1000
- **Properties of the products :**
Hypochlorous acid (HOCl) 10~30ppm / ℓ, pH 5.0~6.5 (concentration level adjustable)
- **Output capacity :** 4ℓ / min
- **Rated Voltage :** Input AC 220V 60Hz
- **Product Size :** 410x145x360 (mm)
- **Weight :** About 12kg
- **Capacity :** 400mℓ
- **Power Consumption :** About 200W
- **Materials :** ABS + PP

- **Product name :**
Faucet-direct connection type hypochlorous acid (HOCl) solution produce unit
- **Model name :** ECOFARM-3000
- **Properties of the products :**
Hypochlorous acid (HOCl) 10~30ppm / ℓ, pH 5.0~6.5 (concentration level adjustable)
- **Output capacity :** 8ℓ / min
- **Rated Voltage :** Input AC 220V 60Hz
- **Product Size :** 450x160x500 (mm)
- **Weight :** About 15kg
- **Capacity :** 400mℓ
- **Power Consumption :** About 200W
- **Materials :** ABS + PP

Reference, Table 1

Function guidance

Self-diagnosis function	Easily diagnose abnormalities of each part by self-diagnosis.
Flow rate detection	Built-in flow sensor can be generating equal concentration of sterilization solution even if it is installed in the place of inconstant water pressure.
Electrolyte replenishment alerts	When the electrolyte solution is exhausted, the sensor perceives it and notify.
Step-by-step disinfection levels setting	If necessary, it will be able to produce a more powerful sterile solution.

Account

Eco Farm uses hypochlorous acid (HOCl), which authorized as a food additives from FDA and the Ministry of Health and Welfare of Japan, directly from water tap as sterilizing solution. It can be easily used at the farm and barn, foodservice, restaurant, etc.

Eco Farm has been installed and tested in Monsanto, USA and Chinese farm and verified for seed sterilization, the fungus disease prevention effects such as mildew and gray mold disease, and also verified for prevention effects of flu virus (AIV) and Norovirus at Pennsylvania State University, USA.

Strong Point

1. Powerful sterilization

Eco Farm has strong and broad sterilizing power of 99.9% to general bacteria as well as various viruses, spores, spore-forming bacteria, and ranging fungi. Besides, <Eco Farm> has the advantage that can't create resistant bacteria because it destroys bacteria cell itself. (Remove effectively mildew, gray mold disease, flu virus (AIV) and Norovirus.)

2. Excellent deodorization effect

Eco Farm shows powerful deodorizing effect by decomposing offensive odor substances like Ammonia gas.

3. Outstanding safety

Eco Farm is harmless to Humans, animals and plants, so it makes safe diseases control. Also it doesn't leave any residue after use and decomposed naturally when it is discharged, so it can be used in all areas that require environmental friendly.

4. Convenience <Reference, Table 1>

EcoFarm doesn't need to dilute or input disinfectant that existing disinfection has needed. The installation is simple, and you can generate a hypochlorite with one-touch operation and adjust the flow rate and hypochlorite concentration step by step.

- Self-diagnostic function: The self-diagnosis over each part makes checking defects easily.
- Flow sensors : Installed built-in flow sensor can make produce sterilized solution of equal concentration even in places where the water pressure is not constant.
- Electrolyte supplements notifications : When you run out of electrolyte solution, <Eco Farm> detects and informs by itself, so you can replace it easily.
- Step-by-step disinfection concentration setting : Can produce more powerful sterilization solution if necessary.

5. Economical

Eco Farm can reduce the disinfection cost significantly, because using only a small amount of electrolytic solution and electricity. (Production cost: 2~3000 won per ton)

6. A wide range of usage

Eco Farm can be used in all places which required in powerful and safe sterilization such as at home, food factory, hospital, animal farm, fisheries, and even agricultural fields.

Usage

1. Farm, barn: Seed sterilization, products disease prevention, anti-virus and deodorizing
2. Restaurant, Food Service: Sterilization of kitchen equipment, utensils, dishes, and cleaning drainage. Washing, sterilization and pesticide removal of food reserved. Prevention of Waterborne epidemics.
3. Schools, offices, government offices, public agencies: Sterilization of furniture and other equipment, Air purifying and deodorizing using sprayer.
4. Hospital: Sterilization of utensils, disease control, Air purifying and deodorizing.
5. Indoor public places: Air purifying, Prevention of cross infection.
6. Toilets, bathrooms: Sterilization and deodorization of washbasins, bathtubs, sinks, floors where have heavy contamination.

Owned intellectual property rights / certificates / awards



Domestic HOCl water sprout germinator & cleaning sterilizer_ **Medisu**

MEDISU

Water sprout germination, Cleaning and sterilizing at once

Specification

- **Product name :** HOCl water sprout germinator & cleaning sterilizer
- **Model name :** ES-4400
- **Rated Voltage :**
Input AC 100~240V 50~60Hz, Output DC 24V 3A
- **Product Size :** 290x290x350 (mm)
- **Weight :** 3kg
- **Capacity :** 8ℓ
- **Power Consumption :** About 85W
- **Materials :** ABS + PP



Account

MEDISU convert ordinary tap water into HOCl sterilized water, so can sterilize objects with only sterilize water without any other detergent. Germinate sprout or brown rice easily at home with rich oxygen water.

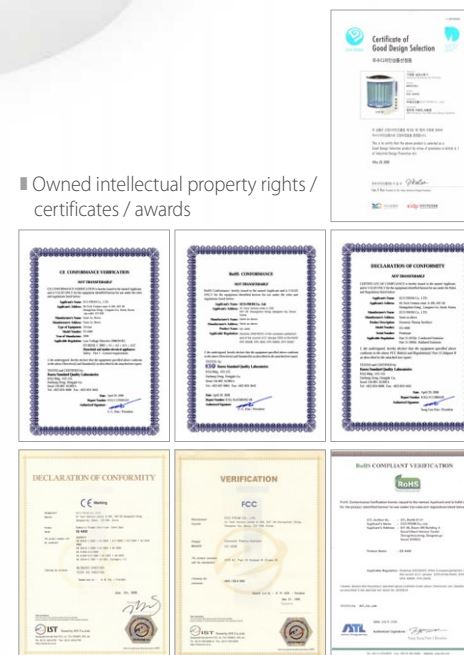
Strong point

- 1. Strong bactericidal effect of the 99.9%**
Sterilize almost all bacteria and viruses effectively within 7-30 minutes.
(Korea Testing and Research Institute, department of microbiology, SNU, Yonsei University Wonju College of Medicine, microbial classroom)
- 2. Remove pesticide residue and keep freshness of the vegetables and fruits**
Keep fruits and vegetables after rinsing with sterilized water from MEDISU, it prevents the growth of bacteria and increases the freshness, because MEDISU remove 100% of pesticides such as parathion and diazinon, enhance the concentration of oxygen ions in water (Dissolved oxygen levels increased approximately 70%). < Korea environment & water works institute>
- 3. Completely decompose detergent residues and chemical composition.**
Clearly decompose and remove the residual detergent component and harmful chemicals which remained in baby bottle and various kitchen utensils. Particularly, improvement atopic symptoms as completely decompose fine detergent residues which remain on the clothes even after laundry and known as the reason of atopic dermatitis.
- 4. Secure and easy-to-use sterilization**
 - Obtained Rohs (Restriction of hazardous substances directive) due to endocrine disruptor and toxic substances are not detected.
 - There is no risk of accidents such as burns due to sterilization in cold water without heating, and glass and plastic containers can also sterilize without strain and no worry about endocrine disruptors.
 - Easy to sterilize without any other detergents, or don't need to heat or boil to sterilize.
 - Adopt advanced IC safety circuit to prevent overcurrent and overheating, operation is simple and you can easily identify the operation status and end with melody and light LED.
- 5. Sprout germinator**
 - Promotes the growth of the seeds germinate and sprout with generated enriched oxygen ions cluster in water.
 - There is no bad odor typically occur in the germination process at all.
 - Reduce the germinating time of brown rice from 3 days to 12 hours for the first time in the world.
- 6. Economical**
 - You can use MEDISU semi-permanently without exchange of detergent or other consumables.
 - Economical low power consumption of 85W electricity (approximately 500 won monthly).

Usage

1. Sterilization of food materials such as fruit, vegetables, seafood, and eggs, etc.
2. Sterilization of kitchen tools, cutlery, cutting boards, dish towels. Remove odor from food containers.
3. Sterilization of Baby products (baby bottles, pacifiers, dolls, toys, etc.)
4. Sprout germinating
5. Remove remaining detergent residue from baby clothes and underwear
6. Others where sterilization is necessary
7. Using face wash or mouthwash.

- Owned intellectual property rights / certificates / awards



OH Radical Water generation technology by electrolysis

OH Radical is sterilizing by decomposing the cell wall of the bacteria

OH Radical Water Generation technology

What is OH Radical?

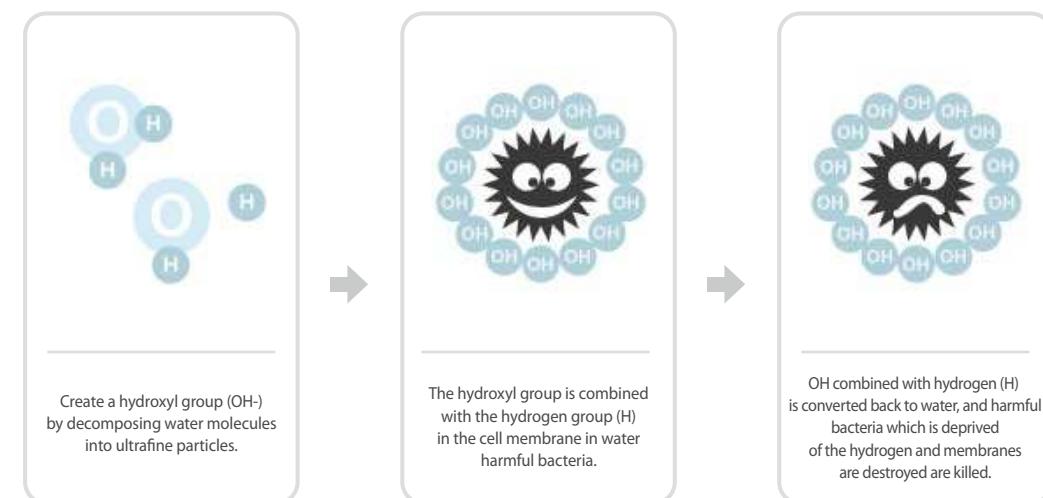
OH Radical (hydroxyl group, Hydroxyl Radical) is in free radical material which in properties of reducing the cell membrane of bacteria to water (H₂O) thereby taking hydrogen ions (H) of the cell membrane of bacteria. When OH Radical reducing the cell membrane of bacteria to water by taking hydrogen ions, the bacteria which been removed hydrogen ions (H) reduced to harmless substances as their cell membrane are destroyed. OH Radical quickly removes recalcitrant organic compounds by oxidation with free-state atoms or molecules that have a strong oxidation power. In addition, a strong electric field is formed among the fine bubbles generated in the water, and it has an effect of electrically removing the inorganic material and other microorganisms in water.

OH Radical is a non-toxic and harmless natural material to the human body unlike the fluorine, chlorine, and ozone. The oxidation potential of OH Radical is approximately 2.8eV that is two times bigger than that of chlorine which is about 1.4eV, and the sterilization ability is also more than twice as strong as chlorine or ozone.

Ionic equation is as follows

(cathode) $4H_2O + 4e^- \rightarrow 4OH^- + 2H_2$ / (anode) $4OH^- \rightarrow 2H_2O + O_2 + 4e^-$

OH Radical is sterilizing by decomposing the cell wall of the bacteria.



※ Eco-plasma sterilization system is the unique patented technology of EcoFrom Co., LTD.

Reference, Table 1

KICM	KICM	KICM	KICM
항균시험 제1호 (KICM-1000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제2호 (KICM-2000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제3호 (KICM-3000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제4호 (KICM-4000) 대부분의 박테리아에 대해 99.9% 효과
항균시험 제5호 (KICM-5000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제6호 (KICM-6000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제7호 (KICM-7000) 대부분의 박테리아에 대해 99.9% 효과	항균시험 제8호 (KICM-8000) 대부분의 박테리아에 대해 99.9% 효과

These are from test results of various domestic and foreign research institutions such as Korea Testing and Research Institute, Korea Institute of Construction Materials, Samsung Electronics' home appliance research institute, department of microbiology, SNU, Yonsei University Wonju College of Medicine, microbial classroom, etc.

Effects of technology and benefits

1. Eco-friendly sterilization

- It is an advanced eco-friendly sterilization technology that sterilize only with water.
- You don't need to add extra detergent or chemical products to water because generated OH Radical changes water to sterilization • deodorization water.
- Endocrine disruptors are not detected because it is non-heat sterilization method.
- No secondary contamination occur because OH Radica and oxygen anions generated by underwater discharge is reduced with water after sterilizing action.

2. Strong bactericidal effect

- Kill 99.9% of various bacteria such as E. coli, cholera, intestine vibrio bacteria, Shigella, Staphylococcus aureus, Pseudomonas aeruginosa, Salmonella, Legionella, Streptococcus mutans (caries causing bacteria), candida (Acne, athlete's foot, inflammation) and Diplococcus pneumonia etc.
 - Kill most of bacteria thoroughly within 30 sec~7 minutes. (3600 times faster than that of chlorine, 2000 times faster than ozone, 180 times faster than the UV light.)
- <Reference, Table 1>



OH Radical Water generation technology by electrolysis

OH Radical is sterilizing by decomposing the cell wall of the bacteria

3. Excellent disinfection effect - decompose detergent residues

- Remove 100% of pesticides such as parathion and diazinon within 7 minutes.
- * From the test result of Korea environment & water works institute and Shanghai preventive medicine institute, China <See , 19page Reference, Data 1>

4. Excellent chemical component decompos ability

- It is an advanced eco-friendly sterilization technology that sterilize only with water.
- Completely decompose fine detergent residues known as the reason of atopy which remain on the clothes even after laundry and the remaining detergent ingredients in kitchen utensils.

5. HAAN's "Cleaz" proved to be sterilized appliances that alleviate atopic dermatitis.

- HAAN has proven to be environmentally friendly water sterilizer "Cleaz (CS-200)" is the disinfection appliances that alleviate the symptoms of atopic dermatitis for the first time in Korea.
- HAAN proceeded "Cleaz sterilization oxygen water atopic dermatitis improvement clinical test" to 10 mild and severe atopic patients of wiping the atopic area with "Cleaz sterilization oxygen water" twice a day for 4 weeks with the institute of Dermatology, DermaPro Co., LTD (www.demapro.co.kr). As a result, the severity of atopic dermatitis index "EASI" is reduced 37%, and skin erythema (redness), edema, papules, scratch (skin scars) are respectively 50%, 41% and 32% decreased. Water loss in the skin is also reduced 12.4%. And 90% of atopic patients who participated in the experiment gave a positive assessment of improving symptoms after using Cleaz. Mr. Na Jong Ho, the vice-president of HAAN said, "It is the first sterilization appliances in Korea that mitigate the symptoms of atopic dermatitis itself than prevent or stave the deterioration off of atopic dermatitis".

• Detergent residue decomposition experiment in completely machine washed Baby Clothing

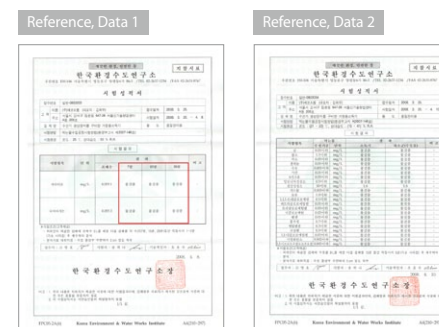


Excellent disinfection effect

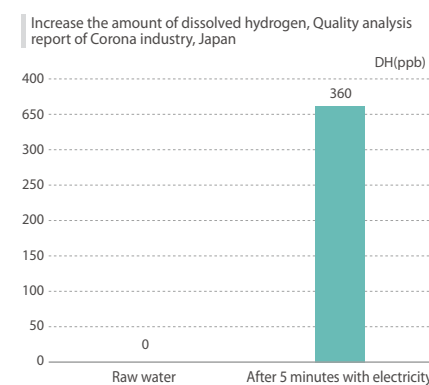
- All you need is water only! Production is easy. (Production time is within 10 minutes.)
- Quick and simple sterilization.
- No noise and vibration during sterilization.
- It doesn't occur deformation, discoloration and corrosion of the materials because of non-thermal sterilizing system.
- It can be used semi-permanently.

Outstanding safety

- Low voltage(DC2 ~ 48V) which safe on the human body can generates a high current density between the electrodes, by Eco From owned unique underwater electrode structure, unlike existing other electrolysis.
- Ozone (O₃) does not produced by active hydrogen ions generating system.
- Endocrine disruptors are not detected because it is non-heat sterilization method. <See , 19page Reference, Data 2>



Reference, Graph 1



Reference, Table 1

OH Radical solution generator	
Rice, vegetables and fruits washing	Decomposition of pesticide residues and heavy metals, keep freshness of vegetables and fruits Disinfection of all kitchenware such as cutting board, knives, dishcloth and dishes
Pet cleanliness	Fur sterilization, odor removal
Sterile drug	Make tea or coffee after refrigerate 30 minutes
Alkali oxygen water	Prevention of E. coli, 0-157, Salmonella, vibrio, food poisoning bacteria, SARS, and bird flu Prevention of atopic dermatitis, eczema, athlete's foot, dandruff, flu and denture cleaning Skin whitening, degradation of stain and cosmetic waste, dust removal

Produce aseptic alkaline oxygen water <Reference, Graph 1>

- By OH Radical, all of bacteria is sterilized and concentration of oxygen ions in water is enhanced (Dissolved oxygen levels increased approximately 70%). as a result, the mineral-rich alkaline oxygen water of pH 7.1 ~ 7.3 alkaline water is generated.
- When you drink oxygen water, oxygen is absorbed directly into the blood vessel apart from breathing, so you can reduce the free oxygen radicals caused by hyperventilation.
- Oxygen water helps maintain a healthy body to deliver oxygen to ten times faster than the breathing in each tissue.

The discrimination of EcoFrom technology

1. Other company's steam heat sterilization method

- The environmental hormone is detected by a high-temperature heating (115 °C).
- Product is deformed due to heat.
- There is a risk of accidents such as burns.

2. Other company's ultrasonic cleaning method

- It only has the ability to remove impurities from the cleaning object, but is irrelevant to sterilization ability.
- Because of the sound wave's straightness, the washing effect of back and side is small.
- Separate debris is floating in the water and attaches to the object again during draining.
- Silicon, plastic, and cloth material absorbs ultrasonic, so washing ability is reduced. (No baby bottle disinfection)
- Noise and vibration is too strong.
- There is a risk of short circuit and electric shock.

Application of Technology

1. Application by area <Reference, Table 1>

Plasma technology of EcoFrom is eco-friendly technology that can be applied to household, industrial and medical use etc., so can be used as generating sterilizing water, treatment of sewage and wastewater, and removal of fluid chemical substances and heavy metal, etc..

2. Application of Technology

For family use : Sterilization of the condensate inside of air conditioning heat exchanger (Remove fungi, bacteria, and bad odor), air Purifiers, Kitchen sterilizer, water purifier, bidet, humidifier, bathroom equipment, baby bottle sterilizer, dentures sterilizer, mouth washer, and so on.

For agriculture and stockbreeding : Seawater disinfection systems of aquaculture, deodorant and sterilization systems for livestock, deodorant and sterilization systems for poultry and so on.

For medical : Dental equipment sterilizer, medical equipment sterilizer, dental care sterilizer, mouth washer and so on.

HYO

Sterilization of dentures and braces as well as removal of odor and proteins at one go

Specification

- Product name : Denture & Dental Product Sterilizer
- Model name : EDV-4200
- Properties of the products :
Input AC 100~220V 50~60Hz, Output 12~15V 600~800mA
- Product Size : 84x133x132 (mm)
- Weight : 500g
- Capacity : 350ℓ
- Power Consumption : About 7W
- Materials : ABS + PP



Account

HYO is denture and dental products sterilizer using only water without extra detergent with Eco-plasma sterilization system.

HYO is passed through hard sterilization and safety test of Ministry of Health and Welfare in Japan and received a medical device certification, is exported to Japan and the United States.



Strong Point

1. Sterilize dental caries causing bacteria (Streptococcus mutans), bacteria such as E. coli, Shigella, etc., fungi and viruses within 30 sec ~ 5 minutes. <Korea Testing and Research Institute for Chemical Industry >
2. Decompose the putrefactive bacteria and remaining surfactant after brushing teeth to prevent odor.
3. Remove the covered proteins from the denture to give whitening effect.
4. Remove and decompose the remaining hazardous chemicals on dental care. <Korea Environment & Water Works Institute >
5. HYO Natural Sterilizing water is made by common tap water, and got the safety certification through all of the drinking conformance testing, oral toxicity test, intradermal safety test and the eye irritation test. (Korea Testing and Research Institute for Chemical Industry)
6. HYO Natural Sterilizing water maintains the sterilization power to 24 hours or more, so the dentures and dental products can be kept for a long time. It has no deformation and discoloration of the denture and the braces because of non-thermal underwater keeping system.
7. One-touch operation makes it easy to use, and Advanced IC circuit makes auto shut down after 10 minutes sterilizing operation.
8. It can be used semi-permanently without exchange of detergents, batteries, lamp and other extra consumable items.

Usage

1. Sterilization of the denture and the braces.
2. Sterilization of dental care products such as toothbrush, interdental toothbrush and tongue cleaner.
3. Sterilization of baby bottle nipples, pacifiers, plastic teething rings, teething tots, infant oral appliances and small toys.



DENTLIN

Dentlin the keeper of oral health for the whole family.

Specification

- Product name : Denture & Dental Product Sterilizer
- Model name : EDL-1200
- Properties of the products :
Input AC 100~220V 50~60Hz, Output 12~15V 600~800mA
- Product Size : 84x133x132 (mm)
- Weight : 500g
- Capacity : 350ℓ
- Power Consumption : About 7W
- Materials : ABS + PP

Account

Dentlin is a dental products sterilizer using only water without extra detergent with Eco-plasma sterilization system, and helps oral hygiene and prevent oral diseases by sterilizing 99.9% of dental caries causing bacteria (Streptococcus mutans), and other bacteria.

Dentlin is exported to Japan and China.

■ Owned intellectual property rights / certificates / awards



Strong Point

1. Sterilize various bacteria, fungi and viruses of dental care products within 30 sec ~ 5 minutes.<Reference, Picture 1>
2. Remove and decompose the remaining hazardous chemicals on dental care products. <Korea Environment & Water Works Institute >
3. There is no deformation and discoloration of the denture and the braces because of non-thermal underwater keeping system.
4. Prevent and eliminate bad breath.
5. Prevent diseases within the oral cavity such as caries, periodontitis, etc. and the cold.
6. Remove the chemical ingredients of toothpaste that remains in the mouth after brushing.
7. Help the speedy recovery of oral inflammation and wounds.<Reference, Picture 2>
8. Dentlin Natural Sterilizing water is made by common tap water, and got the safety certification through all of the drinking conformance testing, oral toxicity test, intradermal safety test and the eye irritation test. <Korea Testing and Research Institute for Chemical Industry >
9. One-touch operation makes it easy to use, and Advanced IC circuit makes auto shut down after 10 minutes sterilizing operation.
10. It can be used semi-permanently without exchange of detergents, batteries, lamp and other extra consumable items.

Usage

1. As the sterilizer for Dental products

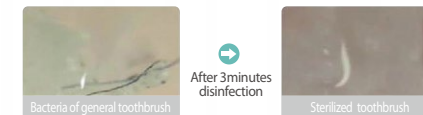
- Sterilize and keep dentures and braces.
- Sterilization of dental care products such as toothbrush, interdental toothbrush and tongue cleaner.
- Sterilization of baby bottle nipples, pacifiers, plastic teething rings, teething tots, infant oral appliances and small toys.

2. As the mouth washer

- Can create gargle water when you touch button twice.

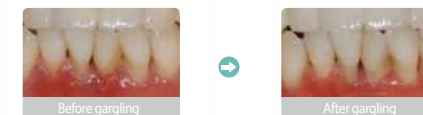
Reference, Picture 1

Korea Testing and Research Institute

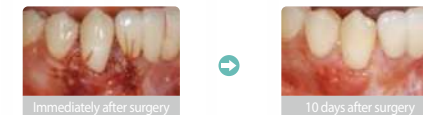


Reference, Picture 2

Before and after gargling of periodontal patient



Fast recovery after periodontal surgery



HI WATER

This product is **hydrogen water generator** that removes only harmful oxygen free radical which causes disease and aging.

Circular base specification

- Product name : Hydrogen water generator
- Model name : EHW-1201
- Rated Voltage : Input AC 220~240V 50~60Hz, Output DC 12V 1A 50~60Hz
- Product Size : 160x134x290 (mm)
- Weight : 582g
- Capacity : 1000mℓ
- Power Consumption : About 48W
- Materials : ABS + PP

Square base specification

- Product name : Hydrogen water generator
- Model name : EHW-1201
- Rated Voltage : Input AC 220~240V 50~60Hz, Output DC 12V 1A 50~60Hz
- Product Size : 100x160x300 (mm)
- Weight : 570g
- Capacity : 1000mℓ
- Power Consumption : About 48W
- Materials : ABS + PP

■ Owned intellectual property rights / certificates / awards



Account

Hi water breaks water molecule(H_2O) which consists of hydrogen and oxygen with powerful electrolysis in the water, and then dissolves the separated hydrogen ions in water to produce hydrogen water.

The oxygen free radical is produced due to excessive drinking, smoking, overeating, stress, pollution, chemicals, and ultraviolet light and so on. Hyper-produced the oxygen free radical caused harmful oxidation in human being's body which leads to damage DNA and the cellular tissue. And this is the reason of illness and senescence-accelerated. About 90% of the disease of modern man such as cancer, diabetes, atherosclerosis, high blood pressure, stroke, myocardial infarction, Parkinson's disease, skin aging and atopy is said to be correlated with the oxygen free radical. <Reference, Graph 1>



There are 36,000 kinds of diseases in human beings on the planet, and all the diseases are caused - by oxygen free radical.

However, drinking over a cup of hydrogen water makes to combine the oxygen free radical and hydrogen in the body. In accordance with the principle that hydrogen and oxygen combine to water, the oxygen free radical is removed after reduction when it is combined with hydrogen water.

Hi Water is a reliable hydrogen water generator that received certification from the Japan Hydrogen Water Promotion Association.

Strong Point

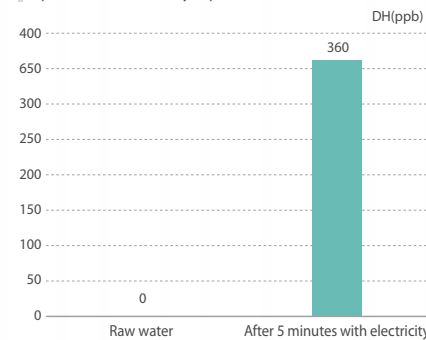
1. Hydrogen water removes only harmful oxygen free radical which occur aging and disease selectively.
2. Hydrogen water gives firmness to the skin and improves skin aging. <Reference, Graph 2>
3. Unlike other companies' hydrogen water products, ozone and chlorine are not produced while generating hydrogen water.
4. It doesn't smell ozone and chlorine in hydrogen water.
5. Adopt advanced IC safety circuit to prevent overcurrent and overheating, and simple one-touch operation.
6. It is economical in the semi-permanent use.

Strong Point

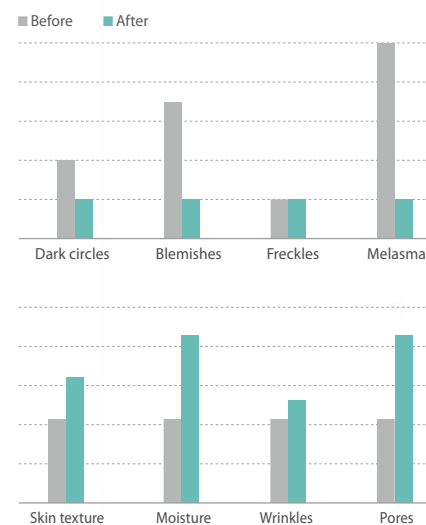
1. Drinking 2-3 cups (1 liter per day) daily prevent adult diseases and aging, because hydrogen water removes the oxygen free radical in the body.
2. Drinking 2-3 cups (1 liter per day) daily have excellent esthetic effect.
3. The higher the water temperature makes the higher the dissolved hydrogen content. If you brew tea with warm hydrogen water (about 70°C), the taste and flavor of tea becomes more vivid.

Reference, Graph 1

Increase the amount of dissolved hydrogen, Quality analysis report of Corona industry, Japan



Reference, Graph 2



COMMA

The world's first complete germination within 12 hours!

Specification

- Product name : Electrolysis germinator
- Model name : EPW-560S
- Rated Voltage :
Input AC 100~240V 50~60Hz, Output DC 9V 2A
- Product Size : 150x100x245 (mm)
- Weight : 540g
- Capacity : 1200mℓ (2~3 servings)
- Power Consumption : About 20W
- Materials : ABS + PP

■ Owned intellectual property rights /
certificates / awards



Account

Comma produce oxygen ion cluster and hydrogen ion cluster fluently in the water, which promote the growth of seed and plants, and then germinate brown rice with our patented technology which maintain the right temperature by the automatic control device.
EcoFrom is supplying this module to HappyCall's brown rice germinator <Ssaktium>.



Reference, Table 1

Rich in nutrients



GABA
Gamma oryzanol (Antioxidative effect)
Squalene (Removing harmful oxygen)
Phytosterol (Cholesterol-lowering effect)
Oligosaccharide (Mineral absorption synergy)
Dietary fiber (Prevent constipation)
Polycosanol (Ergogenic effect)
Vitamin E (Heart disease prevention, Antioxidative effect)

Strong point

1. Soft texture
Phytic acid, which surrounds the outer surface of brown rice makes rough texture, and occurs malnutrition and indigestion. Comma decompose phytic acid during the germination process, so it makes softens the texture of brown rice like white rice and digestible.
2. 12 hours quick germination
With our patented technology, the germination time reduced from over 3 days to 12 hours first in the world.
3. Sterilization
Sterilize 99.9 % of the bacteria and fungi that are generated in the germination process, and eliminate the remaining pesticide residues in rice.
4. Odor removing
No odor, which usually occurs during the germination process because <Comma> decompose putrefying bacteria completely.
5. Rich in nutrients <Reference, Table 1>
GABA has various effects such as blood pressure normalization, increased cholesterol control, suppress elevated blood sugar, promote brain cell metabolism, prevent obesity, growth hormone secretagogue, stroke sequelae improvement, and the prevention of dementia.
6. Economically feasible
It is very economical because you can germinate brown rice at home at no additional cost, by purchasing regular brown rice of half the price of packaged germinated brown rice.

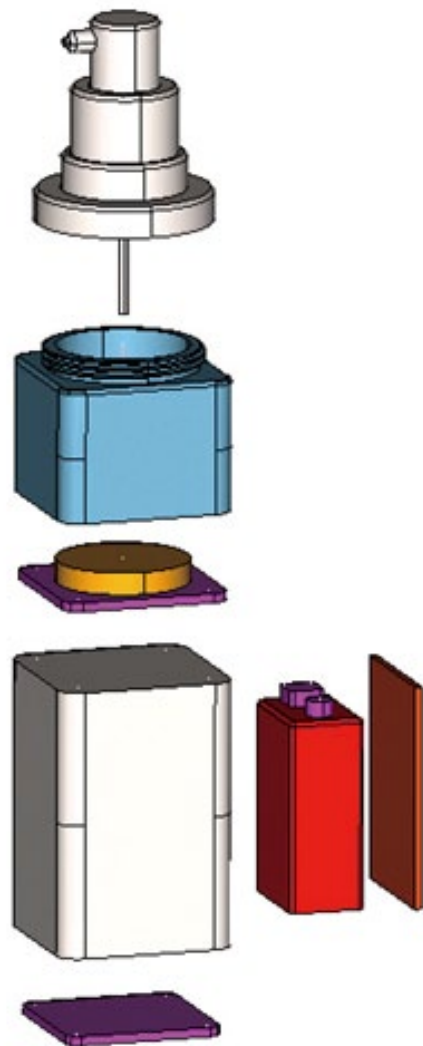
Usage

1. Brown rice germination
2. Mixed grains germination

Eco美(Mi)

Oxygen mist for brightly illuminating skin!

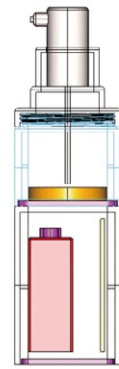
• Eco美(Mi) Exploded View



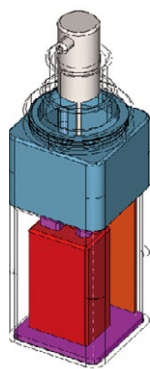
■ Owned intellectual property rights / certificates / awards



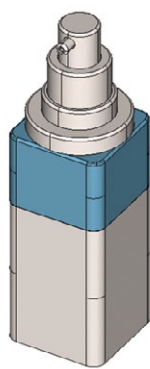
• Eco美(Mi) Front exploded View



• Eco美(Mi) Orthographic projection exploded View



• Eco美(Mi) Orthographic projection drawing



Account

Eco美(Mi) decomposes Oxygen water into nano form that much smaller than the size of pores, which makes easy to penetrate skin. Oxygen water has excellent skin moisturizing effect as it remains a long time in the pore to fills skin with water, and supply oxygen to the skin. In addition, removing dead skin cells and sebum waste deep in the pores and kill bacteria that cause skin problems, so it is very effective products to improve skin health and prevent acnes.

Strong Point

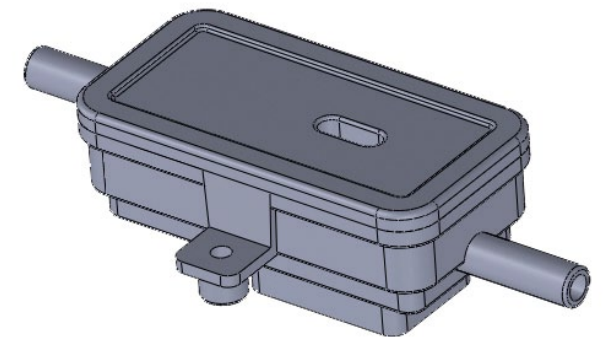
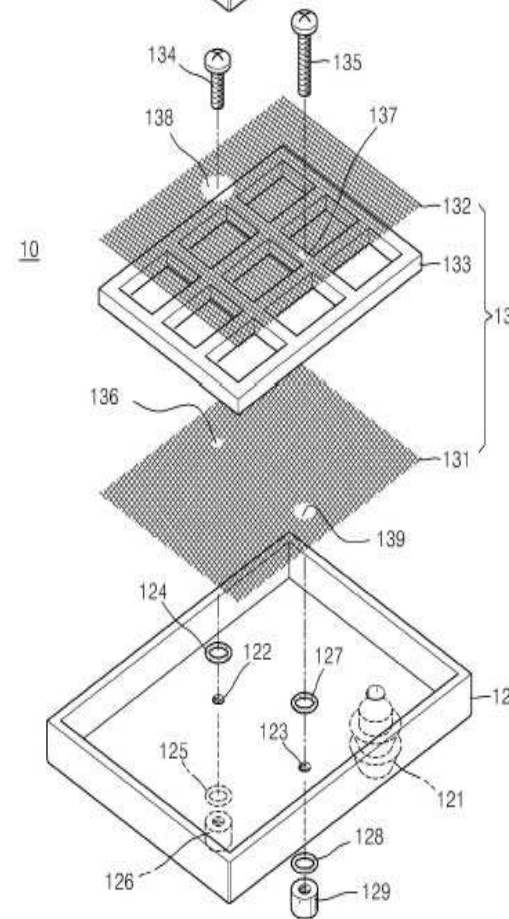
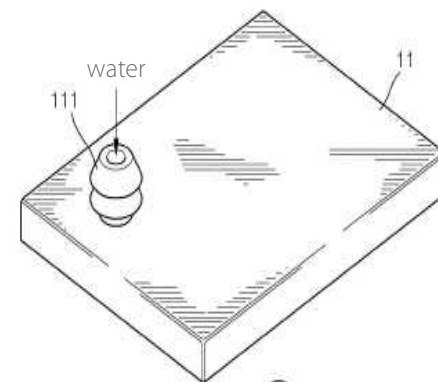
1. Lightweight and slim design makes easy to carry.
2. If tap water is available, customers can create Oxygen water anytime, anywhere.
3. Easy to charge using the USB.
4. Fill the skin with oxygen water to give moisture and oil balance and it makes the skin clear and healthy.
5. It improves skin aging and wrinkles with excellent moisturizing power.
6. Soothe damaged skin caused by ultraviolet or laser treatments quickly.
7. It helps remove wastes such as sebum, blackheads, dead skin cells from the depths of the pores to brighten skin tone.
8. Remove the cosmetic residue remaining in the pores and skin surface after cleansing.
9. Removes 99.9% of bacteria which cause various skin problems. (Especially sterilize 99.9% of candida, Staphylococcus aureus.)
10. It improves skin diseases such as atopic dermatitis, athlete's foot. (Sterilize 99.9% of athlete's foot)
11. Also available as a portable sterilizer because of an excellent sterilizing power.

Usage

1. Skin care
2. Improving skin disorders
3. Gargling equipment
4. Portable sterilizer

Module

We are manufacturing and supplying plasma modules for sterilization and deodorant that can be applied various in air conditioning, water purifier and bidet etc



1. Air-conditioner sterilizing modules

By applying the sterilized water to the drainway to remove mildew and make sterilization and deodorization.

2. Washing machine sterilizing modules

By applying the sterilizing water to rinsing course of the washing machine, sterilize the laundry and the interior of the washing machine and remove the remaining detergent residue.

3. Humidifier sterilizing modules

Disinfection of water tanks and inside pipes, and purify the air.

4. Water purifier sterilizing modules

Automatically sterilize the Interior of Purifier periodically.

5. Dish washer sterilizing modules

Apply the sterilized water to the pump to make dish washing and sterilization at the same time.

6. Fruit and vegetable washer sterilizing modules

Remove various bacteria and pesticide residues.

7. Shower module

Apply oxygen water to moisturize the skin and help the skin care and skin disease mitigation.

8. Foot baths sterilizing modules

Sterilize various bacteria to prevent Athlete's foot and can keep clean feet.

9. Bidet sterilizing modules

Prevent various diseases to kill harmful bacteria such as E. coli when you rinse, and sterilize the nozzle and inside the toilet.

10. Modules for industry

- Care for marine products :
The disease prevention and various bacteria & virus protection of marine products.
- Care for livestock products :
The disease prevention and various bacteria & virus protection, Maintain cleanliness in the barn.
- Care and sterilization for agriculture : Seed sterilization, disease prevention.
- Care and sterilization for food materials and groceries:
Cleaning and disinfection to remove pesticides of food materials, waterborne disease prevention.

OEM/ODM Products



Samsung Electronics

sterilization system for Smart Air-conditioner

The world's first air-conditioning & heat exchangers sterilization system what kills bacteria and mold when the air-conditioning & heat exchanger indoor unit turned on. Since co-developed with Samsung's home appliances Institute in 2007, this sterilization system module has been applied up to now.



HAAN kitchen sterilizing water generator Cleaz

This product makes high level sterilization water by electrolysis tap water, so it can sterilize kitchen utensils, fruits and vegetables and other ingredient easily in 3~5 minutes. It is the big sales product from TV home shopping.



Han-il Electronics

hydroxyl humidifier

It is the world's first humidifier which easily and effectively decomposes bacteria and slime in the water jug of humidifier with OH-Radical caused by electrolyzing water. This product awarded Grand Prix of home appliance in ASIA AWARD 2008.



Happycall domestic brown-rice germinator ssaktium

This brown-rice germinator applied oxygen bubble generator using world first patented plasma water system. This is the breakthrough new products which reducing usual 3~4 days of brown-rice germination period to 12 hours. This product removes bad odor and bacteria that occur during germination by the sterilization water, so it can make nutritious germinated brown rice easily at home. It is the big sales product from TV home shopping.



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