

人と環境に安心・安全
塩素革命®



Chlorine Revolution

Safe to Human Friendly to Environment

P's GUARD, a mild chloric water, has its excellent attribute to its amazing deodorizing performance and sanitization in a twinkle and it causes no harm to the human body and the environment.

株式会社ピースガード
www.psguard.jp

In recent years, new species of viruses and resistant bacteria appear one after another under the impact of destruction of nature and global warming. There is also a limit of a conventional sterilization system, and we are witnessing the threat of the mutant virus such as Noro virus, swine flu, bacteria such as O-157. The Company can confront these threats by eradication deodorant "P's guard" which is safe to human and friendly to the environment. We will realize good hygiene management and thus contribute to the society in security and safety. Therefore, we name it "chlorine revolution" and strive to its spread.

Company Name: P's GUARD Co., Ltd.
 Location of Head Office: 6-8-18 Nishioi, Shinagawa-ku, Tokyo, Japan 140-0015
 URL: www.psguard.jp
 President Dir. : Mr. Masayoshi Okihara
 Foundation: October 1, 2009
 Capital: JY 51,800,000
 Business Line: 1. Development, production, sales of "P's Guard for Food" as food additives and sanitizer for food.
 2. Development, production, sales of "P's Guard for Sanitizer & Air Freshner".
 3. Design, installation, maintenance of space sparying system using "P's Guard" liquids and solutions.
 4. Development, production, sales of space spraying apparatus and spraying system
 5. Developmnet of products applying "P's Guard" in the joint study, collaboration with different type of business.

Our proudcts lineup.



※こちらに掲載のもの以外にBIB容器入20Lもあります。

Since P's GUARD is not volatilized as a successful result that stabilize the hypochlorite ions in alkali aqueous solution (in terms of the image of something like anti sleep state), the very different properties from the conventional hypochlorite based products have emerged. (ph 8.5 ~ 12.5)

The liberated hypochlorite ions when exposed to such as bacteria-virus bacteria and organic matter (protein) immediately react, decompose them, so annihilation of bacteria and virus, sterilization and deodorant are done instantly. Very high disinfecting and deodorant effect has been demonstrated by the specialized agencies * experiments. Is a slightly alkaline, and since it does not volatilize, so

- ★ there is no pungent odor
- ★ metal corrosion is difficult
- ★ bleaching is difficult
- ★ long-term stability (quality deterioration is almost no) are characterized. No carcinogens trihalomethane is generated. After catalytic cracking without any generation of resistant bacteria, it will be water and oxygen and extremely small amount of salt of the trace, it is very safe to the human body. It is also non-polluting ** to the environment, just Perfect/Powerful/Preventive product. It was named from the initials of P as "P's GUARD". It can be said Chlorine Revolution.

* Visionbio Corporation, Kyoto Institute of Microbiology, Research Institute for Animal Science in Biochemistry and Toxicology

** Tokyo Food Technology Institute: mouse irritation test, oral toxicity study, the skin and eye mucosa test are proven "no abnormality"

Features of "food additive P's GUARD" - category: food additives

It is exactly the same as the characteristics of the "P's GUARD" of goods; moreover, because the time of food sterilization does not destroy the cell membrane, there is no dripping (dripping juice from the meat, fish, fruit and vegetables), it can be maintained long time in both color, flavor, and taste. At this point, it can be said that there is overwhelming difference compared to conventional hypochlorite. In order to do immersion sterilization, it can be said that it is wise to sterilize the surface instantaneously by spraying because many consumption reacts with meat, fish itself since it decomposes by contact reaction with the organic matter.

Although alcohol and conventional hypochlorite is not suitable for space spraying, "food additive, P's GUARD" can be said that it is the only product that may be able to spray in space for falling bacteria countermeasures since there is less pungent odor and metal corrosion, as well as no generation of resistant bacteria and trihalomethane. Alcohol has a weakness that bactericidal effect may fall depending on the concentration in alcohol. In addition, alcohol has no sterilization effect on Norovirus. In that respect, "food additive, P's GUARD" is able to sterilize cookware instantly, and because there is no anxiety of residual chlorine (hydrochloric acid root), it saves time to rinse with water later.

From the above features, "food additive, P's GUARD" is said to be the best food additive and sterilizer.

The distinction between goods and food additives

Distinction

Trade name "P's GUARD", categorizes in miscellaneous goods.

The main purpose is deodorant and disinfection of vessels. Of course, it is very effective in disinfecting and deodorant by spraying in space. Food additives and pharmaceuticals authorization is not received. However, it can be shipped at a concentration of one's request according to the purpose.



On the other hand, the trade name "food additive, P's GUARD" cleared food additives aptitude test, including safety, by a third party*, and also was approved as a bactericide from competent health center. The main purpose is sterilization, such as food poisoning bacteria and Norovirus of food and cooking utensils. It may be used as a food additive, therefore, it can be used by directly spraying or immersing ingredients and cookware itself while miscellaneous goods "P's GUARD" may not.

There are two types of usable concentration; effective chlorine concentration 100ppm and 200ppm. (100 times, 200-fold dilution for stock is available.)

* Japan Food Research Center

[Goods] disinfection, deodorant

[Food additives] sterilizer

Product Name	P's GUARD		Food additive, P's GUARD	
Component	Sodium component hypochlorite + pure water		Sodium component hypochlorite + pure water	
Intended use	Deodorant and disinfection of equipment		Sterilization of food and cooking equipment	
How to use	Spraying or dipping		Spraying or dipping	
Effective chlorine concentration	25ppm, 50ppm(High concentration is also available)		100ppm, 200ppm((100 times, 200-fold dilution for stock is	
Target and application	Deodorant: Pets, smoking rooms, schools, nursing homes, hospitals and hotels Disinfection: influenza Norovirus, parvovirus, etc.		Sterilization: food poisoning bacteria, O-157, Norovirus, food processing, fisheries-related, and spray in space for falling bacteria countermeasures	

The difference between conventional products

Advantage

Conventional product



P's Guard



- ◀ Pungent odor ▶ no pungent odor, almost odorless in the applicable concentration
- ◀ Resistant bacteria ▶ occurrence of resistant bacteria is none
- ◀ Corrosivity ▶ difficult to metal corrosion
- ◀ Bleaching ▶ no bleaching
- ◀ Norovirus countermeasures ▶ effective in decontamination and sterilization of Norovirus (with test data)
- ◀ Volatility ▶ maintained stable quality without volatile for a long period of time(2 years) (with test data)
- ◀ Food drip ▶ no drip and could not destroy cell membrane
- ◀ Carcinogen ▶ there is no anxiety of trihalomethane generation
- ◀ Sterilizing power and deodorant force ▶ fast and powerful in both sterilization and deodorant
- ◀ ph ▶ pH8.5 ~ 12.5. If it is within a range of suitable temperature, sterilization effect is invariable
- ◀ Environmental ▶ environmentally friendly and harmless
- ◀ Safety ▶ also safe and secure to human and pets (with test data)
- ◀ Space spray ▶ Ideal for space spray as airborne bacteria, falling bacteria countermeasures

Characteristics of "food additive, P's GUARD" and other sterilizer

Note 1: Put Δ for deodorant effect of hypochlorous acid product, since there is pungent smell immediately after spraying.

Note 2: Leather and cloth products rarely fade and discolor. Please make a try if required.

	Alcohol product	chlorine dioxide products	slightly acidic hypochlorous acid product	food additive, P's GUARD
Short time required for sterilization	○	◎	◎	◎
Strong sterilization capability	○	◎	◎	◎
Deodorant effect	×	×	Δ Note 1	◎
Difficult to metal corrosion	◎	×	×	○
Difficult to bleaching	◎	×	×	○ Note 2
No occurrence of toxic gas	×	×	Δ	◎
No pungent odor	×	×	Δ	◎
No volatilization	×	×	×	◎
Valid for space spray	×	×	Δ	◎
No danger of combustible	×	Δ	○	◎
Excellent quality stability	○	×	Δ	◎
Excellent in safety to the environment	×	×	Δ	◎
Prevent occurrence of resistant bacteria	×	○	○	◎
Excellent in long-term storage	○	×	×	◎

① Alcohol has no effect on norovirus. Since maximum bactericidal concentration of alcohol is 76.9 to 81.4%, sterilizing power against other viruses at a concentration of more than 85% or less than 60% is almost none.

② Chlorine dioxide products have tremendous bactericidal power, but it generates a strong chlorine odor and toxic gas, instantly corroding the metal and electronic equipment by strong oxidizing power, even bleaching fiber products powerfully.

③ Conventional "sodium hypochlorite" has strong pungent odor, also remarkable in metal corrosion and bleaching fiber products. As a by-product, trihalomethane, carcinogens, will be generated. However, although the ingredients are the same, "P's GUARD" product is alkaline hypochlorous acid formulations, which cleared the same problems.

④ It is not covered in the product comparison table, but the sterilizing power of the stabilized chlorine dioxide (water formed chlorine dioxide) is almost none. Allowing the sterilizing power, adding an acid to the liquid preparation, converting into chlorine dioxide is required, although the risk at the time of the conversion is as shown in ②.

⑤ Unlike general slightly acidic hypochlorous acid product, diluted with tap water, "P's GUARD" is almost unlikely as for quality deterioration. On which is excellent in each comparison item, it is a luxurious good of high purity water (RO ion exchange), therefore, it is ideal for users who are pursuing the highest quality (efficacy and safety).

Dr. of Agriculture, Professor Junsuke Shirai



1979-1984 Researcher, Animal Health Research Organization, Ministry of Agriculture, Forestry and Fisheries
 1985-1986 Student sponsored by French Government (INRA: Institute National de la Recherche Agronomique)
 1988-1989 Specialist sent by JICA (Japan International Cooperation Agency) to Thai National Foot and Mouth Disease Center
 2003-2004 Administrator of Foreign Disease Research, Dept. of Foreign Disease Research, Animal Health Research Organization, Ministry of Agriculture, Forestry and Fisheries
 2007 Apr.- Professor for Veterinary Medicine, Dept. of Veterinary Medicine, Tokyo University of Agriculture and Technology
 2011 Spr.- Director, Research and Education Center for Prevention of Global Infectious Disease of Animals, Tokyo University of Agriculture and Technology

【Study Field, Key Word】Sterilization, Prevention of Epidemics, Phylaxis Conducts research on infection of animals and pets. Speciality is Veterinary Epizootiology and studies epizootiology from the viewpoint of practical application for preventing the occurrence of contagious disease.

【Award/Academic Prize】1993 July 29th Goto Academic Encouragement Award

I was quite surprised. We analyzed P's GUARD of 100ppm available chlorine concentration at our laboratory and found the weak points peculiar to the conventional chlorine sanitizers were fantastically improved. It's a brand-new and futuristic chlorine sanitizer. Many improvements like excellent sanitizing/deodorant performances but almost free from taste, odor, volatilization, bleaching and metal corrosion. That's why, we came to understand, P's GUARD is used in public transportations such as JR and airports.

In short, P's GUARD is not only unharmed and safe to human body/animals but also exerting powerful sanitizing/deodorant effects. So, it will be widely used in marine products and food industries. Also, it will meet the needs in nursing home for the aged, hospital, kindergarten, pet industry, stock-raising industry and so on. We think P's GUARD is a product to highly disseminate at home in sanitizing pet, toilet, kitchen, hands/mask for preventing infection, care and so forth.

Practical HACCP Meeting Vice-Chairman Mr. Tadao Honma



NPO specified nonprofit corporation

Books:

"First HACCP factory" (coauthor) Saiwaishobo

"Safety of Food and Traceability" (coauthor)

Saiwaishobo

Others

Practical HACCP Meeting is the NPO corporation which was established in 1999 and has been trying to spread HACCP method so as to get rid of food poisoning and to contribute to the improvement of food hygiene.

HACCP is the abbreviation of Hazard Analysis and Critical Control Point. It is the universal method to prevent food poisoning at food processing factories etc. by scientifically analyzing harms and its causes concerning food and by controlling/tracing the processing process till getting rid of harms (or reducing down to safety range).

In recent years, due to norovirus etc., food poisoning occurs throughout the year irrespective of summer or winter and therefore food processing factories place high importance to the improvement of food hygiene at the each process of treating raw materials, cooking food and processing food. Therefore, although there has been needs for sanitizing environment and facilities/appliances at the processing factory and also for improving cleanliness of workers, we have been in a difficulty due to almost no sanitizer which is gentle to environment/human body and stable.

We came to know P's GUARD is the sanitizer which has high sanitizing effect but will give almost no harm to facilities and human body from various inspection data and using data. In particular, the space sanitizing effect at food processing factory by spraying P's GUARD is extremely high and we think worth evaluating. In future, its effect/performance will be further known by space spraying's spread to various processing factories. We expect P's GUARD products to be a help for preventing food poisoning which our corporation aims at.

Testing organization List of disinfecting effect and safety *Laboratories*

Disinfection performance

Influenza virus	Effect demonstrated	Research Institute for Animal Science in Biochemistry and Toxicology	Staphylococcus aureus	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories
Parvovirus	Effect demonstrated	Research Institute for Animal Science in Biochemistry and Toxicology	Pseudomonas aeruginosa	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories
Corona virus	Effect demonstrated	Research Institute for Animal Science in Biochemistry and Toxicology	MRSA	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories
Norovirus (feline calicivirus virus)	Effect demonstrated	Visionbio Corp. and Japan Food Research Laboratories	Salmonella	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories
Escherichia coli	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories	Vibrio parahaemolyticus	Effect demonstrated	Kyoto Microbe Lab & Japan Food Research Laboratories

Safety Test P's Guard

Mouse local irritation test (skin)	no abnormality	Tokyo Food Technology Institute
Mouse local irritation test (eye mucosa)	no abnormality	Tokyo Food Technology Institute
Mouse acute toxicity test (oral)	no abnormality	Tokyo Food Technology Institute

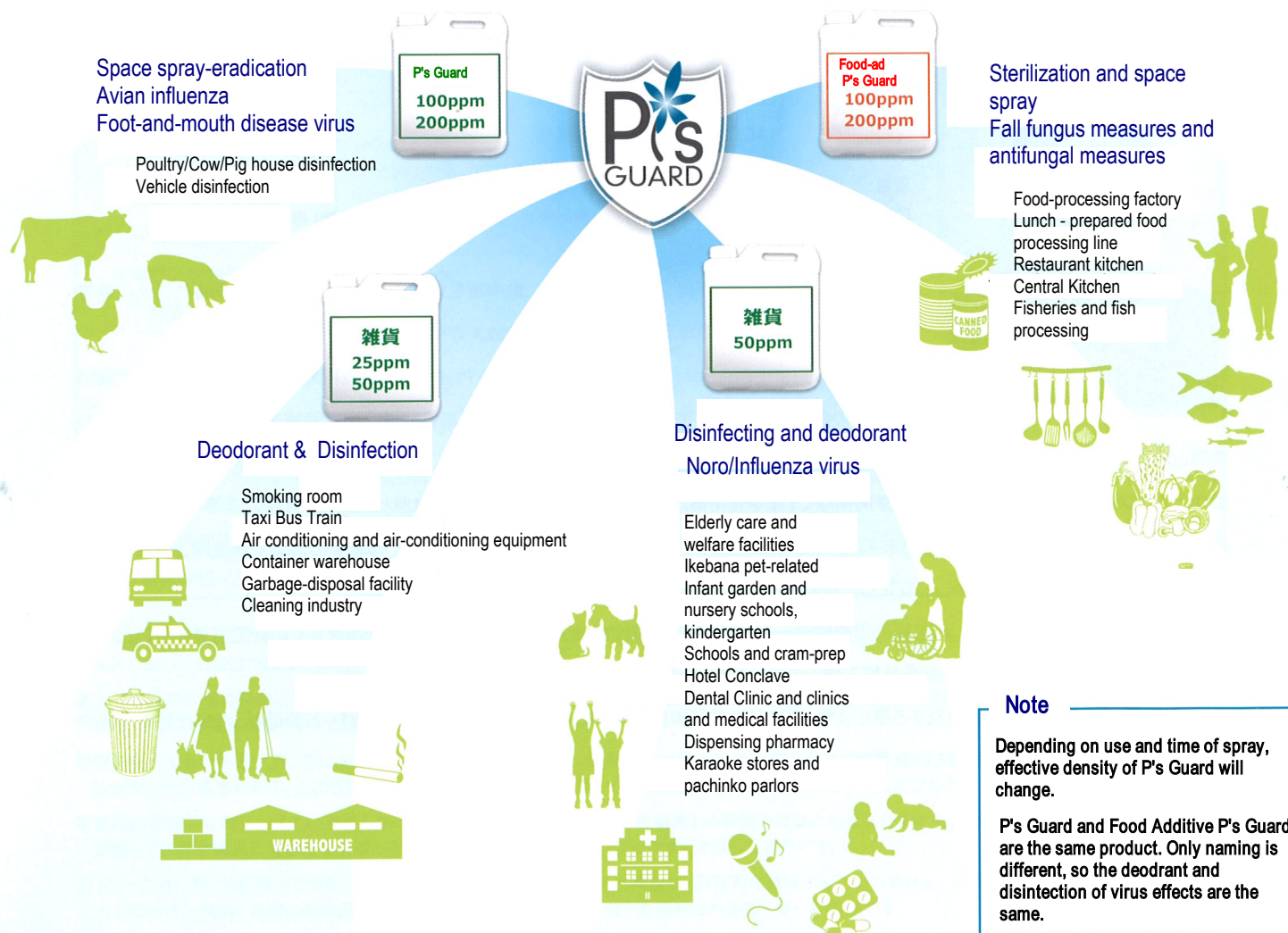
Food Additive, P's Guard

Rabbit local irritation test (skin)	no abnormality	Japan Food Research Laboratories
Rabbit local irritation test (eye mucosa)	no abnormality	Japan Food Research Laboratories
Mouse acute toxicity test (oral)	no abnormality	Japan Food Research Laboratories

Applications and use Location details

Use & Object

Use location and the target of "P's guard" and "food additive P's guard" vary wide-ranging from large spaces such as factory until the small household. Though applications are divided into four large business categories here, it can be used for variety of purpose for general home, office, etc.



Note
Depending on use and time of spray, effective density of P's Guard will change.
P's Guard and Food Additive P's Guard are the same product. Only naming is different, so the deodorant and disinfection of virus effects are the same.

"Food additive P'a guard" safety testing and antibacterial power test *Experiment*

Safety test results

Japan Food Research eye irritation test using a rabbit in the center, primary skin irritation test, also the safety of the "food additive P'a guard" in the acute oral toxicity study using female mice has been demonstrated. [Japan Food Research Center examined and issues, and Nos. -04 No. 11001086001- 03. Nos -07]

Eye irritation test using a rabbit	
Maximum value of the average total score	Classification
0~5.0	No irritant
5.1~15.0	Mild irritant
⋮	⋮
80.1~110.0	Strong irritant
[Judgment] 0	No stimulus

Primary skin irritation test using a rabbit	
Primary irritation Index	Reaction category
0~0.4	No irritation
0.5~1.9	Weak irritation
2~4.9	Moderate irritation
5~8	Strong irritation
[Judgment] 0	No stimulus

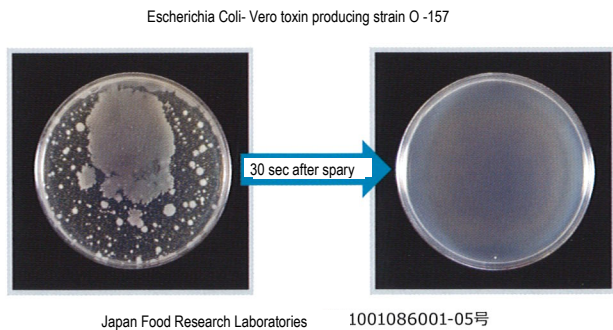
Acute oral toxicity tests using female mice	
Forced oral this drug at a dose volume of 20ml / kg. For the other control group, we gave water for injection.	
The observation period was 14 days and observed deaths, general condition, and body weight.	
[Judgment]	In all of the test animals Abnormalities it has failed seen.

Antibacterial test results (effective chlorine concentration 100ppm)

The results of the analysis test for the sample of January 7, 2011 submission are as follows. Bactericidal effect of "food additive P's guard" has been demonstrated.

[January 14, 2011 Japan Food Research Laboratories examined. 11001086001- 05, the same-06 and the same-08]

Test Bacteria	Target	Numbers of Bacteria (/ml)			
		0 sec	15 sec	30 sec	1 min
VRE Vaicomycin resistand enterococci	Specimen	1.1×10 ⁶	<10	<10	<10
	Non Specimen	1.1×10 ⁶	-	-	1.0×10 ⁶
Klebsiella pneumonia	Specimen	6.3×10 ⁵	<10	<10	<10
	Non Specimen	6.3×10 ⁵	-	-	5.7×10 ⁵
Legionella	Specimen	2.3×10 ⁷	5.0×10 ⁵	6.3×10 ³	<100
	Non Specimen	2.3×10 ⁷	-	-	1.9×10 ⁷
Listeria	Specimen	6.5×10 ⁵	<10	<10	<10
	Non Specimen	6.5×10 ⁵	-	-	6.1×10 ⁵
Pseudomonas aeruginosa	Specimen	1.0×10 ⁵	<10	<10	<10
	Non Specimen	1.0×10 ⁵	-	-	1.1×10 ⁵
Salmonella	Specimen	6.8×10 ⁵	<10	<10	<10
	Non Specimen	6.8×10 ⁵	-	-	5.7×10 ⁵
Staphylococcus aureus	Specimen	3.2×10 ⁵	30	<10	<10
	Non Specimen	3.2×10 ⁵	-	-	4.0×10 ⁵
MRSA Methicillin resistand staphylococcus aureus	Specimen	1.4×10 ⁶	<10	<10	<10
	Non Specimen	1.4×10 ⁶	-	-	1.0×10 ⁶
Staphylococcus epidermidis	Specimen	7.3×10 ⁵	2.3×10 ⁵	10	<10
	Non Specimen	7.3×10 ⁵	-	-	7.7×10 ⁵
Test Bacteria	Target	0 sec	15 sec	30 sec	1 min
		Numbers of Bacteria (/ml)			



Test Bacteria	Target	Numbers of Bacteria (/ml)			
		0 sec	15 sec	30 sec	1 min
Strep tococcus	Specimen	6.7×10 ⁵	<10	<10	<10
	Non Specimen	6.7×10 ⁵	-	-	5.8×10 ⁵
Vibrio parahaemolyticus	Specimen	4.6×10 ⁵	<10	<10	<10
	Non Specimen	4.6×10 ⁵	-	-	4.9×10 ⁵
Escherichia Vero toxin-producing strain	Specimen	1.3×10 ⁵	<10	<10	<10
	Non Specimen	1.3×10 ⁵	-	-	1.3×10 ⁵

Test Virus	Target	TCID50/ml			
		0 sec	15 sec	30 sec	1 min
Norovirus (feline calicivirus)	Specimen	3.2×10 ⁶	<32	<32	<32
	Non Specimen	3.2×10 ⁶	-	-	3.2×10 ⁶

Note: <10, <32 & <100 : Not found / No Spacimen =Water / Under room temperature



**PERFECT
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