Description of Sany-high

(the Hypochlorous acid water
by electrolysis)

～HClO（HOCl)water～

JIPCm

01108b

Y.NISHIO is explained

Ⅰ What is Sany-high ?
(Hypochlorous acid/HClO by electrolysis)

1. History of Development

- In the late 1980s, ”Nippon Steel Corporation” has developed.
- Its purpose was the long-term stockpiling rice.
- Developed as an alternative to sodium hypochlorite would damage the rice.

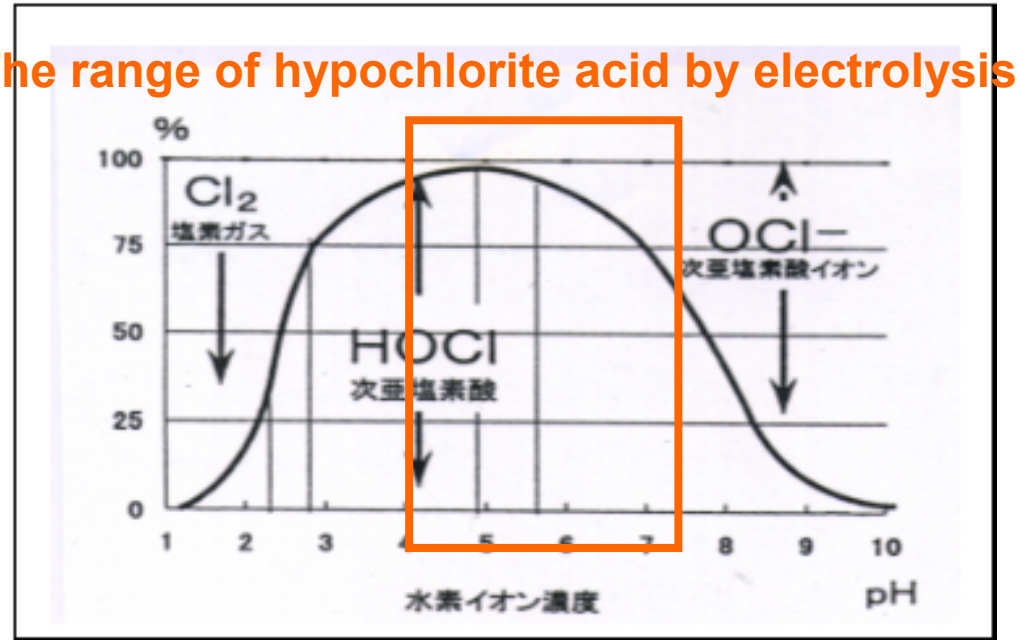
- Nippon Steel has found that hypochlorous acid sterilizing power of the principal.
- They are safe and have established a way to make hypochlorous acid inthe electrolyte stable.

Reference ：Nippon Steel‘s catalog at the time of release

The main component of Sany-high (hypochlorous acid by electrolysis) is HClO.

Nippon Steel was verified that there is no disinfectant in the OCl^- force.

They found the presence of a large amount of HClO in the hypochlorous scid by eiectroiysis water.



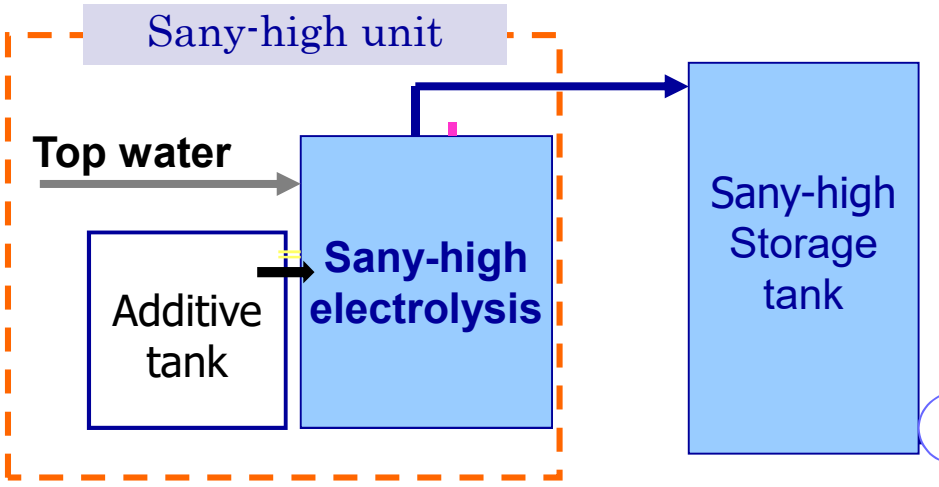
2. Making Sany-high

* The Making of Sany-high has two

① Generated by electrolysis

＊How to use the Sany-high produced by electrolysis.

Reference：Sany-high unit



② Used to dilute the high concentration Sany-high

How to use and diluted in the field produced at high concentration Sany-high.**(H.CONC Sany-high**）

Residual chlorine concentration 1500 ～ 2000ppm（Bag in BOX)

⇩

Diluted to 30 ~ 50ppm

H.CONC Sany-high Pack

（BIB）

Use in the kitchen of the shop

dilution device

dilution device

Use of hand washing applications

Dilution equipment installation case

① Use in the kitchen of the shop

② Use of hand washing applications

Faucet mount type

Automatic faucet-aware

Use in the psychiatric facility

Ⅱ. Differences between traditional disinfectant

∗ Differences with Sodium hypochlorite(NaOCl)

1. Unwrung the vegetable fruits

- NaOCl is dissolved proteins to alkaline. Tuse, It dameges vegtable fruits snd human skin.

However Sany-high is safe because of the weak achid.

2. Bactericidal effect by low concentrations of chlorine

- Available chlorine concentration is 20 ~ 30ppm

(NaOCl is over 200ppm)

3. Almost no chlorine smell

- Sany-high is used in low concentrations of chlorine and no chlorine smell

※ Reference：Table of differences
Comparison with conventional chemical

資料 －A

2009年4月10日

	Evaluation item		Sany-high electrolysis	Sany-high H.CONC Sany-high	Sodium hypochlorite NaOCl
1	Sterilizing effect	Chlorine concentration	10～50ppm	10 ～ 2000ppm	Over 200ppm
		pH	2．7～7．5	6．5～7．5	8．5＜
		Sterilizing effect	◎	◎	△
		（comment）	Low concentrations of chlorine(50ppm<) that kills bacteria spores		Bactericidal effect in OCl^- has no
2	Danger to public health		○	○	× To generate the Carcinogen
		（comment）	Conform to the standards in water of less than 50ppm(in JAPAN)		To dissolve the protein
3	Impact on equipment		○	○	○
		（Comment）	Must be washed after use.		Must be washed after use.

	Evaluation item		Sany-high (HOCL) electorlysis	Sany-high (HOCL) H.CONC Sany-high	Sodium hypochlorite NaOCl
4	**Impact of washing materials**		◎	◎	×
		(comment)	Does not affect to proteins		Damage to proteins
5	**Handiness**		○	◎	△
		(comment)	Use low concentrations of chlorine (30 ~ 50ppm)		Use chlorine at a concentration of more than 200ppm
6	**Summary**				
	Merritt	Major features	There is no danger to public health		Low cost for industrial waste
		Metal corrosion	When the washing can be prevented		When the washing can be prevented
		Rinse washed	A small amount of rinse-off		Must be rinsed with plenty of water

Summary of Differences

① Sany-high no damage to the fruit vegetable
＝ No rough hands（Be effective against norovirus）
② Almost no chlorine smell（Good working environment）
③ Rinse well with a small amount of water (water saving)
④ Chlorine disinfection is ffective at low concentration
⑤ Since H.CONC Sany-high is simply diluted, easy to use
⑥ Sany-high can choose two different methods of producing
⑦ Sany-high is vital to react with organic matter
＝ **Sany-high** is no environmental impact

Ⅲ Use of Sany-high

1. Sany-high Electorlysis use cace

① Initial cost

・**Sany-high electrolysia :**

about ¥2,500,00～¥3,000,00

(Equipment configuration with)

② Running cost

・**about ¥0.9/L（Chlorine concentration 30ppm ）**

*** Including purchase of liquid additives & electrode replacement cost.**

2. H.CONC Sany-high use case

① Initial cost

Diluter : about ¥80,000 ~ ¥150,000.

(Different by design)

※ Even if you do not have diluter

② Running cost

- **about ¥10/L（Chlorine concentration 30ppm ）**

※ Estimated at BIB(20L) ¥12,000.

3. H.CONC Sany-high use cases

a) Use hands wash

① **Wash with soap (Degreasing)**

② **Rinse soap by Sany-high (Use running top water)**

Use automatic faucet device capable dilution

③ **Wipe with a clean towel(Completion)**

b) Use the kitchen of the shop#1


Disinfecting floor cleaning


Clean cooking equipment decontamination


Clean cooking equipment decontamination


Hands wash

c) Use the kitchen of the shop#2

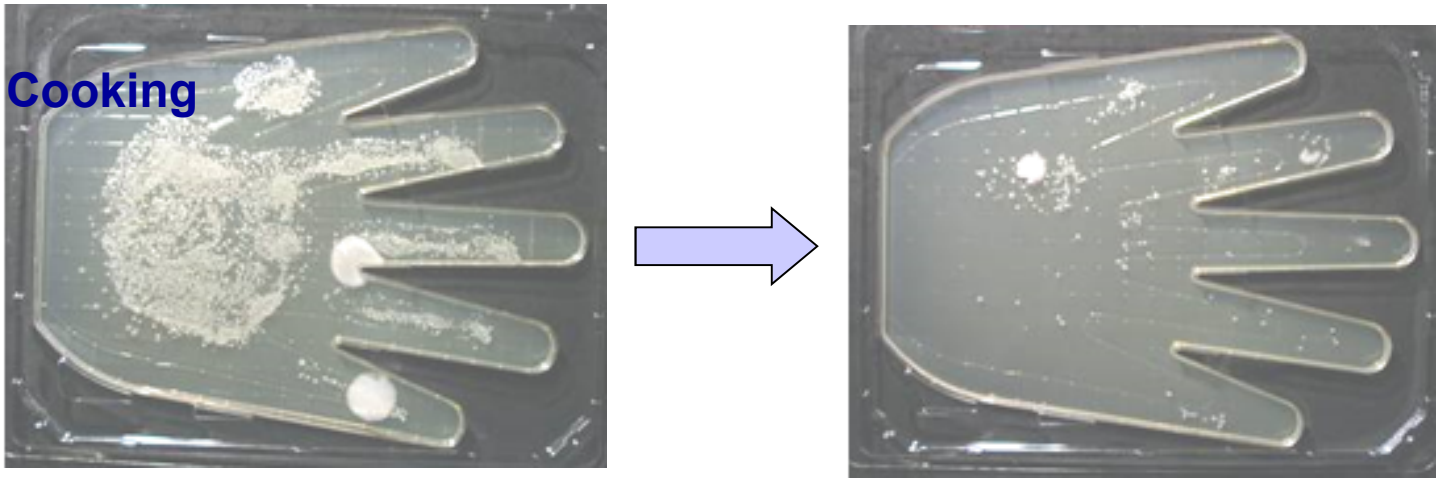
※How to use the orijinal

Effects of decontamination Sany-high

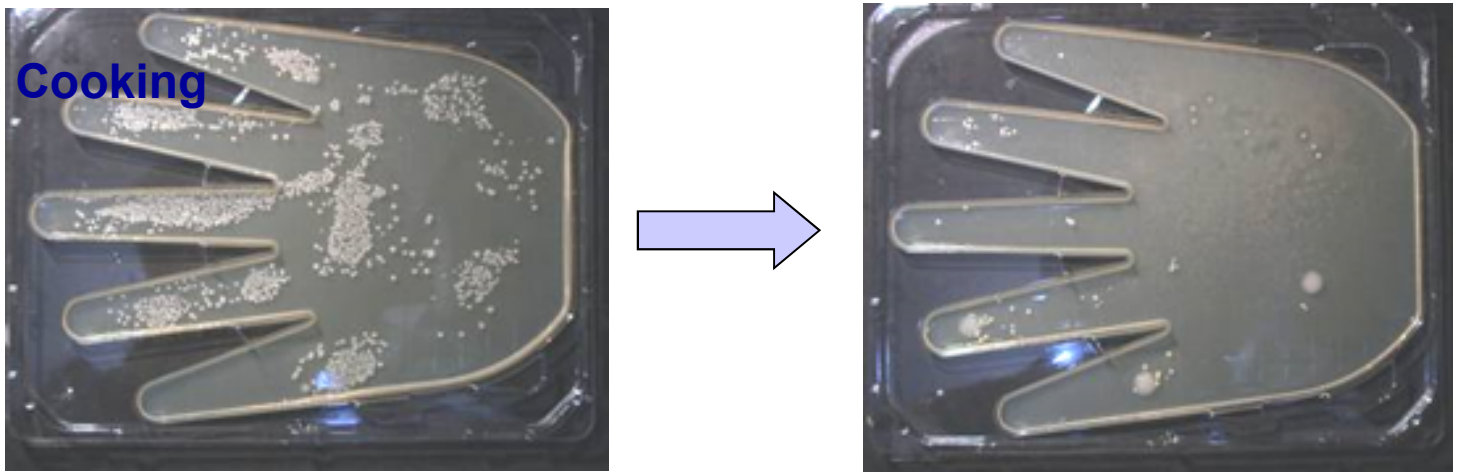
1. Use hands wash

before **after**

The A's Cooking



The B's Cooking



Offer: Japan Environmental Technology Center

2.Effective eradication of the test data

By Tokyo Metropolitan Institute of Health Science

Tests to reproduce normally in the presence of bacteria (Mixed and tested Bouillon 1%,or Protein 1%)

Viable bacteria count (**Staphylococcus aureus**) /ml					
	Original	After 30sec	After 60sec	After 120sec	After 300sec
Sany-high	2.2×10^5	<10	<10	<10	<10
Sany-high＋Bouillon	2.2×10^5	10	10	10	10
Sany-high＋Protein	2.2×10^5	8.6×10^2	7.9×10^2	7.1×10^2	3.5×10^2

Viable bacteria count (**Vibrio parahaemolyticus**) /ml					
	Original	After 30sec	After 60sec	After 120sec	After 300sec
Sany-high	7.3×10^5	<10	<10	<10	<10
Sany-high＋Bouillon	7.3×10^5	<10	<10	<10	<10
Sany-high＋Protein	7.3×10^5	〈10	<10	<10	<10

Viable bacteria count (**Bacillus cereus**) /ml					
	Original	After 30sec	**After 60sec**	**After 120sec**	**After 300sec**
Sany-high	1.0×10^4	<10	<10	<10	<10
Sany-high＋Bouillon	1.0×10^4	<10	<10	<10	<10
Sany-high＋Protein	1.0×10^4	〈10	<10	<10	<10

Viable bacteria count (**Salmonella**) /ml					
	Original	After30sec	After60sec	After120sec	After300sec
Sany-high	1.1×10^5	<10	<10	<10	<10
Sany-high＋Bouillon	1.1×10^5	<10	<10	<10	<10
Sany-high＋Protein	1.1×10^5	1.2×10^2	7.0×10	10	10

＊Detection limit 10／ml ＜10”= ND
＊ **Chlorine concentration is 50ppm Sany-high**

Sany-high is also less affected by the coexistence of organic matter 1% H.CONC Sany-high was used to dilute.

Show below the comparative study of sodium hypochlorite

（The test conducted in Tokyo Metropolitan Institute of Health Science）

Use a target the most resistant spore-foming(Bacillus subtilis ATCC6051 : Rate of spore＝58% ）

Viable bacteria count /ml （Bacillus subtilis ATCC6051： Rate of spore＝58%）				
		Sany-high#1	Sany-high#2	sodium hypochlorite
pH		4.6	4.9	8.3
Chlorine concentration		100ppm	50ppm	50ppm
Original	Reading	420,000		
		430,000		
	Average	425,000		
Contact time				
10sec	Reading	140,000	180,000	235,000
		115,000	115,000	100,000
	Average	127,500	147,500	167,500
	Decline(%)	70	65.3	60,6
1min	Reading	26.5	100,000	185000
		26,500	100,000	100,000
	Average	26,500	100,000	142,500
	Decline(%)	93.8	76.5	66.5
5min	Reading	0	500	175000
		0	0	130,000
	Average	0	250	152.5
	Decline(%)	100	99.9	64.1
10min	Reading	0	250	150,000
		0	50	230,000
	Average	0	150	190,000
	Decline(%)	100	>99.9	55.3

Summary

1. **High-security**
   - **Sany-high is not cause rough hands**
2. **No damaging to the environment**
   - Sany-high because of fungicides in water and salt making, friendly people and the environment.
3. **Low concentration of chlorine have a strong bactericidal power.**
   - Have the effect of sterilization in 20 ~ 30ppm

※ Sany-high is no damaging the Vegetable & fruit, human and environmentally friendly,safe and easy to use fungicide.

※ We recommend Sany-high to use a seterilization.

JIPCM LLC