Eco One Hypochlorous Acid (HOCL) Generator

HOW DOES IT WORK?

Making disinfectant is easy. Just fill the pitcher with water and add kosher salt. Power on the system and within minutes a cleaner & disinfectant is generated called hypochlorous acid (HOCl) also known as electrolyzed water.

Alternatively, a cleaner & degreaser can be generated by using food grade potassium carbonate instead of kosher salt.

WHY IS SYSTEM QUALITY IMPORTANT?

Since the start of the pandemic, many low quality hypochlorous acid generators from China have flooded the market. It is important to understand why quality is important. Below are some key points to consider before making a purchase:

Titanium Electrolysis Cell - The cell must be manufactured in high grade titanium. Systems using electrolysis cells that are manufactured from lower quality alloys will deteriorate quickly and may not be generating hypochlorous acid. If the electrolysis cell is made from steel or other lower grade metals, the electrolysis cell will deteriorate very quickly and will generate harmful chromium compounds that can be carcinogenic.

Size of the Electrolysis Cell - Our electrolysis cell is relatively large for a 1 Liter pitcher and only requires 2 grams of salt to generate 200 ppm of hypochlorous acid. Even higher concentrations can be generated if the system is run for extra cycles. Many low quality systems manufactured in China are requiring very large quantities of salt. If you see that the directions on a system require 5 to 20 grams of salt per Liter, you can be sure that the electrolysis cell is very small and your solution salinity will be extremely high. Most likely the system is generating sodium hypochlorite (NaOCl) and not hypochlorous acid (HOCl).

PERFORMANCE

Concentrations up to 200 ppm of hypochlorous acid (HOCl)

Production Rate (Setting 1): 1 Liter at 40 ppm in 3 minutes

Production Rate (Setting 2): 1 Liter at 60 ppm in 5 minutes

Production Rate (Setting 3): 1 Liter at 100 ppm in 8 minutes

Production Rate (Setting 3): 1 Liter at 200 ppm in 16 minutes

Oxidation Potential of Anolyte (HOCl): +800 to +1000 mV

Concentrations over 400 ppm of hypochlorous acid (HOCl)

After generating 200 ppm, if you continue to run additional cycles on setting 3 (8-minute cycles), each additional cycle will raise the concentration approximately 80 ppm.

Production Rate (Setting 3): 1 Liter at 400 ppm in 40 minutes (five 8-minute cycles)

EXPECTED LIFESPAN OF SYSTEM

The electrolysis cell is manufactured in titanium and has a typical lifespan of 3,000 cycles (8 minutes

each). 8 minutes x 3000 = 24,000 minutes = 1,500 liters at 200ppm, or 3,000 liters of 100ppm HOCL.

TECHNICAL SPECIFICATIONS

Model: E1
Electrolysis Cell: Titanium
Power Supply: 110V/220V, 50/60Hz
Dimensions: 21 x 15 x 36 cm (8.3 x 5.8 x 14 inches)
Weight: 0.6 kg (1.3 lbs.)
INCLUDED
Eco One System
Power Adapter (US Plug)
Test strips for measuring concentration of hypochlorous acid (20 to 200 ppm)
Test strips for measuring pH
Microfiber cleaning cloth (12 x 12 in.)
Eco One User Manual
1 gram measuring spoon
100 gram sample of Potassium Carbonate (for making degreaser)
Note: Kosher Salt is not included (for making hypochlorous acid)

What about the salt for making HOCl disinfectant?

You will need to purchase non-iodized food grade salt at your local supermarket (ie. kosher salt).

What about the potassium carbonate for making KOH degreaser?

A 100 gram sample of food grade potassium carbonate is included, enough to generate 50 liters of degreaser.

Frequently Asked Questions

What is the active molecule in the disinfectant generated from water and salt?

The active molecule is hypochlorous acid (HOCl). Hypochlorous acid is a powerful oxidant and is 100 times more efficient at killing bacteria than chlorine bleach or sodium hypochlorite (NaOCl). Hypochlorous acid is safe and natural. It is found in our blood as one of the most powerful biological oxidants generated by our white blood cells against invading pathogens.

How long is the disinfectant active after being generated from the Eco One system?

In a closed container such as a spray bottle, the concentration of hypochlorous acid decreases about 1% per day. For example, if you generate 200 ppm, it should maintain above 180 ppm after 2-4 weeks if stored at room temperature and protected from UV light.

Can I generate higher than 200 ppm?

Yes, after generating 200 ppm, if you continue to run additional cycles on setting 3 (8 minute cycles), each additional cycle will raise the concentration approximately 80 ppm.

Why do I see hypochlorous acid advertised to have a shelf-life of 1 year or more by some manufacturers?

When hypochlorous acid is bottled, manufacturers often add other chemicals to act as buffers or stabilizers to help prolong the shelf-life.

Can hypochlorous acid be sprayed using a fogging or misting device?

Yes, but it is important that the device be a cold fogging device and not a thermal fogging device. *Heating up hypochlorous acid will denature the molecule and can generate chlorine gas.*

How can I test the disinfectant?

Measuring Concentration

Because hypochlorous acid (HOCl) is a free chlorine molecule, you can measure the concentration with standard chlorine test paper in measurements of 10, 50, 100 and 200 parts per million (ppm).

Measuring pH

The pH is important because HOCl will be the dominant free chlorine molecule between pH 5 and 7. You can measure the pH with standard pH test paper.

At pH 5, over 99% of the free chlorine molecules will be HOCl. At pH 6, over 90% of the free chlorine molecules will be HOCl. At pH 7, over 80% of the free chlorine molecules will be HOCl. At pH 8, only 20% of the free chlorine molecules will be HOCl.

What kind of salt must I use to generate the disinfectant?

Just pure and natural salt without iodine (ie. kosher salt)

Why does the user manual recommend adding 1 tsp of vinegar?

Adding vinegar is optional, but recommended to lower the pH of the water.

What is the difference between the disinfectant made with salt and the degreaser made with potassium carbonate?

The disinfectant made with salt is hypochlorous acid (HOCl), a powerful oxidizing agent. The degreaser made with potassium carbonate is potassium hydroxide (KOH), a powerful reducing agent.

Why is the Eco One system more expensive than some other systems?

It all depends on the quality of the electrolysis cell. Eco One systems use high quality titanium electrolysis cells. Other competing systems may not be generating hypochlorous acid and the electrolysis cell may be built with lower quality alloys which cause the electrolysis cells to deteriorate quickly. Be cautious of cheaper systems manufactured in China that are using electrolysis cells made from steel. These electrolysis cells will deteriorate at a fast pace and will form harmful chromium compounds that can be carcinogenic.

Do I need to purchase any special capsules?

No, we do not require users to purchase expensive capsules like some competing systems. All that is needed is salt for generating HOCl disinfectant or potassium carbonate for generating KOH degreaser.

Can the salt and potassium carbonate be mixed to generate a combined disinfectant and degreaser?

No, the disinfectant is a strong oxidant whereas the degreaser is a strong reducing agent. If the two additives are mixed, the system will not generate any useful solution.

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