



Performance of Nano-WATA

The Nano-WATA produces 80mL of sodium hypochlorite in 23 minutes. One production batch treats an average of 320L of water or produces 0.6L of surface disinfectant. The device can be reused as many times as necessary.

The Nano-WATA has a power of 5W, consumption of 2Wh; 5V 400mAh; 1A.







Recommendations to produce sodium hypochlorite

- ⚠ Choose a person responsible for productions.
- ⚠ Be careful when handling sodium hypochlorite: it can be corrosive to the skin, eyes, and can cause breathing difficulties.
- ⚠ Do not mix it with other cleaners (such as acids or ammoniac) because this can produce toxic gases.
- ⚠ Keep the solution produced out of the reach of children.
- ⚠ Use care when manipulating the device, its power-cable, and its electrodes.



1.

Required material

Provided:

- Nano-WATA device 
- ↳ Container 
- ↳ Electrodes 
- Adapter USB 1 A-5 V 
- Syringe 1 mL 
- Measuring cup 100 mL 
- WataBlue control reagent (only for water treatment)

Not provided:

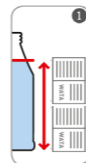
- Bottle 1,5L 
- Kitchen salt (NaCl) and water 
- Electric outlet adaptor (if necessary)

2.

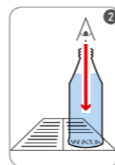
Sufficient water quality (Turbidity)

To find out if the water can be used for sodium hypochlorite production:

- 1 Fill a bottle of water to a height equal to the height of 4 pages of this manual opened and laid vertically.
- 2 Place the bottle on the WATA logo and look through the bottle from the top.



↳ If you can read the WATA logo through the water, it means the water is clear enough to use.



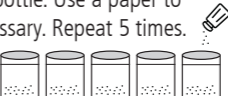



3 If it is too turbid, filter the water through a cloth and repeat the test.

3.

How to use the Nano

Prepare water super saturated with salt

Note: This solution (also called "brine") will be used to produce sodium hypochlorite.






- 1 Fill the Nano-WATA container with salt and pour it into the 1.5L bottle. Use a paper to make a funnel if necessary. Repeat 5 times. 
- 2 Fill the 1.5L bottle containing the salt with water. 
- 3 Shake regularly for 15 minutes the bottle containing the water and salt. 
- 4 Let the solution rest for a few minutes, until a visible salt deposit forms at the bottom of the bottle. If there is no visible salt at the bottom, add more salt and mix again. 
- 5 This way you get a saturated salt solution (brine). Label the bottle with the date and time.

Note: Saturated brine (water saturated in salt) can be stored for up to 6 months.

4.

Producing the sodium hypochlorite

Note: Do not shake the bottle containing the brine before pouring it into the Nano-WATA, to avoid the presence of undiluted salt in the device.

- 6 Fill the Nano-WATA container with brine up to the line indicating 80mL. 
- 7 Close the device by crewing on the top. 
- 8 Connect the USB cable. Only use the supplied charger (not all chargers provide 1 A-5 V). Connect charger to a power source (depending on your country, use a socket adapter). 
- 9 When the green light flashes (after about 23 min), unplug. 
- ↳ You have reached a concentration of 6g/L of sodium hypochlorite.
- 10 Rinse the electrodes, without rubbing them, with clear water and let them air dry. Once dry, close and store the device. 

Note: If the light is red, the production cannot be started because the current is too high. In this case, check that the charger used is the one supplied. If you are using the correct charger and the light is still red, replace the charger (1A-5V).

5.

General recommendations

- Follow the dilution guide for proper use of the product.
- The sodium hypochlorite solution, produced with Nano-WATA, can be stored up to 24 hours without degradation, in a clean and well closed non-metallic container (plastic, glass, etc.), protected from light and in the coolest place possible.
- Once the drinking water is treated, it must be consumed within 24 hours.
- Put a label with date and time on the stored solution.
- If, after several uses, a white deposit forms on the electrodes, prepare a cleaning solution (50% vinegar or lemon juice + 50% water). Let the electrodes soak overnight. Rinse and let dry in the open air.

Health precautions


Avoid:

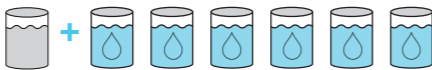
- ⚠️ ⚠️ ⚠️ Getting sodium hypochlorite into eyes. Do not drink undiluted solution.
- ⚠️ ⚠️ Degradation of sodium hypochlorite if storage conditions are not respected.
- ⚠️ Prolonged skin contact, corrosion of metal objects, discoloration of fabrics.



Uses

Disinfectant for surfaces (at home)

Dilute 1x the volume of sodium hypochlorite  in 6x the volume of the container with water:



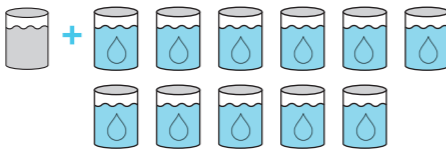
(see table for more information)

Hand disinfectant

In a 1 L bottle, pour the 80 mL of sodium hypochlorite (total capacity of Nano-WATA) and fill to the top.

or:

Mix 1x sodium hypochlorite with 11x water:




Making water safe to drink

The WHO (World Health Organization) recommends chlorine concentrations of 1.5 mg/L.

PROCEDURE

- Pour the volume of sodium hypochlorite into the container (e.g. bottle, jerry can), according to the volume of water to be treated:

Note: For measurement, use the syringe up to 1 mL, beyond that, use the measuring cup (100 mL).

Volume of sodium hypochlorite	Volume of water to treat
0.25 mL (5 drops)	1 L
2.5 mL	10 L
5 mL	20 L
50 mL	200 L
80 mL 	320 L

- Fill the container with untreated water.
- Shake/mix well and let stand for at least 30 minutes.
- Test the residual chlorine concentration with WataBlue control reagent (if available).
- When the residual chlorine is appropriate, the water is ready for consumption.

General dilution guide

Formula for dilution

$$\frac{V_{\text{solution to prepare (L)}}}{F_{\text{factor to use (see table depending on type of solution)}}} = \frac{V_{\text{sodium hypochlorite (L) to be used}}}{1}$$

V targeted volume of solution to prepare (L) is the volume of solution you want to prepare (e.g. drinking water).

F is the factor mentioned in the table to use in the formula depending on the type of solution to prepare (e.g. disinfectant).

Uses	Recommended concentration	Factor for formula	Volume of sodium hypochlorite [6g/L]	Equivalent volume of water	Procedure
Floor and surfaces (at home)	0.8 g/L	7.5	1	6	Wash with chlorine solution, leave in contact for 5 minutes, then rinse.
Floor and surfaces (in healthcare facilities)	2 g/L	3	1	2	First sweep the floors and wash with soap and water. Then apply the chlorine solution, leave in contact for 10 minutes and rinse.
Wound disinfection	6 g/L	1	1	0	Use undiluted on a clean compress and apply directly to the wound.
Washing of food and raw vegetables	0.05 g/L	120	1	100	Soak the food in the chlorine solution for 5 minutes, scrub, then rinse.
Hand washing	0.5 g/L	12	1	10	Clean and dry hands, then rub with chlorine solution for 30 seconds, allow to dry.
Safe drinking water	0.0015 g/L	4000	1	4000	See page 8.

Surgery and sterilisation: Decontamination with sodium hypochlorite is not sterilisation. Surgical instruments must be sterilised afterwards in an autoclave or a poupinel oven.

V sodium hypochlorite (L) is the volume of sodium hypochlorite required to prepare a certain volume of solution.

Example to illustrate how to use the dilution formula:

To know which volume of sodium hypochlorite is needed to treat e.g. 25L of drinking water: $25L / 4000 = 0.00625L = 6.25 \text{ mL}$
 \Rightarrow You will need to pour 6.25 mL of sodium hypochlorite to treat 25L of water.

Note: To convert the volume of sodium hypochlorite from L to mL: Multiply the volume in L by 1000 (e.g. 1L = 1000 mL).