



Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

10 April 2020

DEPARTMENT MEMORANDUM

No. 2020 - 0157

TO: ALL UNDERSECRETARIES AND ASSISTANT SECRETARIES; DIRECTORS OF BUREAUS, SERVICES AND CENTERS FOR HEALTH DEVELOPMENT; MINISTER OF HEALTH – BANGSAMORO AUTONOMOUS REGION IN MUSLIM MINDANAO; EXECUTIVE DIRECTORS OF SPECIALTY HOSPITALS AND NATIONAL NUTRITION COUNCIL; DIRECTOR GENERAL OF THE PHILIPPINES INSTITUTE OF TRADITIONAL MEDICINE AND ALTERNATIVE HEALTH CARE; CHIEFS OF MEDICAL CENTERS, HOSPITALS, SANITARIA AND INSTITUTES; PRESIDENT OF THE PHILIPPINE HEALTH INSURANCE CORPORATION; DIRECTORS OF PHILIPPINE NATIONAL AIDS COUNCIL AND TREATMENT AND REHABILITATION CENTERS AND ALL OTHERS CONCERNED

SUBJECT: Guidelines on Cleaning and Disinfection in Various Settings as an Infection Prevention and Control Measure Against COVID-19

I. BACKGROUND

After a cluster of pneumonia cases of unknown etiology was reported in Wuhan City, Hubei Province of China last December 31, 2019, Chinese health authorities preliminarily identified the cause of this viral pneumonia as a new or novel type of coronavirus.

With an increasing number of cases spreading to various territories and confirmed human-to-human transmission, the World Health Organization declared the outbreak as a Public Health Emergency of International Concern (PHEIC) last January 30, 2020.

The Department of Health (DOH) hereby issues these interim guidelines to public and private offices, homes and individuals on the use of chemical disinfectant such as sodium or calcium hypochlorite solution for infection prevention and control against Coronavirus Disease 2019 (COVID-19).

II. DEFINITION OF TERMS

- A. **Cleaning** - refers to the removal of microbes, dirt, and impurities from surfaces. Cleaning does not kill microbes, but by removing them, it lowers their numbers and the risk of spreading infection.
- B. **Disinfection** - refers to the use of chemicals to kill microbes on surfaces. This process does not necessarily clean dirty surfaces or remove microbes, but by killing microbes on a surface after cleaning, it can further lower the risk of spreading infection.
- C. **Chlorine** - a chemical element with the symbol of Cl and atomic number 17. Chlorine-containing compounds such as calcium hypochlorite and sodium hypochlorite are used as disinfectants.

- D. **Calcium hypochlorite** - is an inorganic compound with formula $\text{Ca}(\text{ClO})_2$. It is the main active ingredient of commercial products called bleaching powder or chlorine powder.
- E. **Sodium hypochlorite** - is a chemical compound with the formula NaOCl or NaCl . It is most often encountered as a pale greenish-yellow dilute solution commonly known as liquid bleach or simply bleach.

III. GENERAL GUIDELINES

- A. The sodium hypochlorite solution at 0.5% (equivalent to 5000 ppm) using a ratio of 1:10) shall be used for disinfecting surfaces including soiled clothes, toilets, body fluid spilled on the floors, vehicles, roads, disposed PPEs and similar healthcare wastes, and others.
- B. If other options for handwashing (e.g. alcohol-based rub, soap and water) are not available, sodium hypochlorite solution at 0.05% (equivalent to 500 ppm) using a ratio of 1:100) may be used for hand-washing. However, it must be used with caution because frequent use may lead to dermatitis which could increase risk of infection.
- C. Other types of chemical disinfectant such as ammonium chloride, phenols and hydrogen peroxide shall be used according to manufacturer's requirements.
- D. All individuals dealing with the disinfection process shall wear appropriate personal protective equipment (PPE).
- E. Proper hand hygiene shall be practiced before and after the disinfection activity.

IV. SPECIFIC GUIDELINES

- A. **Preparation of the 0.5% sodium hypochlorite solution (1:10 solution) for surface disinfection (Refer to Annex A)**
 - 1. Using commercially available household bleach at 5% active chlorine, dilute 1 part of bleach to 9 parts of clean water; or
 - 2. Using chlorine powder/granules/tablet at 60%-70% active chlorine, dissolve 1 tablespoon of chlorine (equivalent to 10 grams) to 2 liters of clean water. Mix the solution thoroughly using a stick.
- B. **Preparation of the 0.05% sodium hypochlorite solution for hand-washing (1:100 solution) (Refer to Annex B)**
 - 1. Using the 0.5% solution of household bleach (Item A.1 or A.2), add 1 part of the solution to 9 parts of clean water. For example, add 100 mL of solution (7 tablespoons) to 1 liter of clean water.
- C. **Cleaning and Disinfecting Community Isolation Units**
 - 1. Cleaning and disinfecting surfaces should be at least once daily.
 - 2. Many disinfectants are active against enveloped viruses, such as the COVID-19 virus, including:
 - a. 70% ethyl alcohol to disinfect small areas between uses, such as reusable dedicated equipment (for example, thermometers);
 - b. sodium hypochlorite (strong bleach solution) at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces (Refer to Annex A).
 - 3. While it is more advisable to mop or wipe surfaces directly, spraying of cleaning or disinfectant solution directly on a surface can be done with caution, and only when there is no other option of applying the same, since the disinfectant may also have adverse health effects when inhaled in an enclosed environment.

4. Pump-action containers that dispense liquid are preferred as opposed to spray-nozzle dispensers.
5. Mop the floors with regular household detergent and water at least once a day. It is best to practice the use of a two- or three-bucket system for mopping. The two-bucket system is used for routine cleaning where one bucket contains a detergent or cleaning solution and the other contains rinse water. The three-bucket system is used for disinfection where one bucket contains the detergent or cleaning solution, one contains rinse water and one with the disinfectant solution.
6. Disinfectant fogging is not recommended for general infection control in routine patient-care areas.

D. Cleaning and Disinfecting Homes

1. Clean and disinfect frequently touched surfaces and objects daily (e.g., tables, countertops, light switches, doorknobs, and cabinet handles) using a regular household detergent and water.
 - a. If surfaces are visibly dirty, cleaning using a detergent or soap and water should be done prior to disinfection.
 - b. Always follow the manufacturer's instructions for all cleaning and disinfection products. Labels contain instructions for safe and effective use of the cleaning product including dilution information and precautions that should be taken when applying the product, such as wearing gloves and having good ventilation during use of the product.
 - c. Apply the cleaning or disinfectant solution into the surface using cloth or paper roll, where available and appropriate.
 - d. While it is more advisable to mop or wipe surfaces directly, spraying of cleaning or disinfectant solution directly on a surface can be done with caution, and only when there is no other option of applying the same, as in community isolation units.
2. Ensure the toilet and bathroom are cleaned daily with a regular household detergent and water.
 - a. Handle feces from diapers or bedpans with care, ensuring the feces are safely disposed in the toilet.
 - b. If a bedpan is used, after disposing of the feces, the bedpan should be cleaned with a regular household detergent and water, then disinfected with a strong (0.5%) chlorine solution (Item IV.A.1), then rinse with clean water. All rinse water should be disposed of in the toilet.
3. Mop the floors with regular household detergent and water at least once a week (more frequently if household members are regularly going in and out of the house).
4. Any left-over bleach or disinfection solution must be disposed of and remade every 24hrs.
5. For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces. After cleaning:
 - a. Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely, or
 - b. Use household cleaning products that are suitable for porous surfaces in accordance with the manufacturer's instructions.

E. Cleaning and Disinfecting Buildings

1. When cleaning and disinfecting:

- a. Wear disposable or impermeable gloves and gowns for all tasks in the cleaning process, including handling trash.
 - b. Additional personal protective equipment (PPE) might be required based on the cleaning/disinfectant products being used and whether there is a risk of splash.
 - c. Gloves and gowns should be removed carefully to avoid contamination of the wearer and the surrounding area.
 - d. If there is a shortage of PPEs available, wash hands often with soap and water for at least 20 seconds. Change clothes immediately after the cleaning and disinfecting activity.
 - e. Always wash immediately after removing gloves..
 - f. If soap and water are not available and hands are not visibly dirty, an alcohol-based hand sanitizer that contains at least 70% alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water
2. For hard surfaces, first clean then disinfect at least daily:
 - a. Clean surfaces using soap and water. Practice routine cleaning of frequently touched surfaces.
 - b. High or frequently touched surfaces include: tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, etc.
 - c. Mop the floors with regular household detergent and water at least daily. The two- or three-bucket system used in cleaning and disinfecting community isolation units should also be observed in cleaning/disinfecting buildings.
 - d. Disinfection can be done using household cleaners and disinfectants, diluted household bleach solutions or alcohol solutions with at least 70% alcohol – as appropriate for the surface. Check to ensure the product is not past its expiration date.
 - e. Like in community isolation units and homes, directly mopping or wiping surfaces in buildings is also more advisable. However, spraying of cleaning or disinfectant solution on a surface can also be applied with caution, and only when no other option is available, as in community isolation units and homes.
 - f. Follow manufacturer’s instructions to ensure safe and effective use of the product. Many products recommend:
 - i. Keeping the surface wet for several minutes to ensure microbes are killed.
 - ii. Precautions such as wearing gloves and having good ventilation during use of the product for application and proper ventilation.
 - g. Never mix household bleach with ammonia or any other cleanser.
 3. For soft surfaces (such as carpeted floor, rugs, and drapes):
 - a. Clean the surface using soap and water or with cleaners appropriate for use on these surfaces at least weekly.
 - b. Launder items (if possible) according to the manufacturer’s instructions. Use the warmest appropriate water setting and dry items completely; OR
 - c. Disinfect with an FDA-registered household disinfectant.
 4. For electronics (such as tablets, touch screens, keyboards, remote controls, and ATM machines)
 - a. Consider putting a wipeable cover on electronics.
 - b. Follow manufacturer’s instruction for cleaning and disinfecting. If no guidance, use alcohol-based wipes or solutions containing at least 70% alcohol. Dry surface thoroughly.

F. Disinfection of Vehicles

1. It is necessary to clean the vehicle before disinfecting

- a. Microfiber cloths and mops are recommended for removal of up to 99% of microbes.
2. Put on the PPE (consistent with health facility sanitary workers) and do not touch face further.
3. Prepare bleach/disinfectant solution, according to the manufacturer's instructions
 - a. For a 70% chlorine solution (calcium hypochlorite), mix ten (10) tablespoons of twenty (20) liters of water. Stir well for 10 seconds or until the chlorine has dissolved. Wait 30 minutes before use.
4. Keep the windows and doors open for ventilation.
5. If disinfectants cannot be applied directly, it may be sprayed, with caution, on surfaces like walls, doors, windows, glass, floor, etc. (avoid electronics) from one end to another.
6. Remove the PPE and put into trash bag (infectious waste bin).
7. Wash hands with soap and water and take a shower, change clothes immediately.

G. Disinfection of Surfaces in Open Areas

1. All public places should be cleaned from solid wastes using appropriate solid waste management procedures and proper wastewater management schemes based on existing DOH and DENR guidelines.
2. Disinfection of roads, pavements, benches and other surfaces in the open area during the enhanced community quarantine is recommended provided that the direct exposure of the public to the cleaning and disinfectant solution shall be avoided.
3. Proper application of disinfectant using spraying or using a pump-action dispenser as deemed necessary, with the necessary precautions, shall be followed to protect also the workers from direct exposure to chemical.

H. Use of Disinfection Tents/Misting Chambers


1. The US Center for Disease Control (CDC) reported the lack of microbicidal efficacy in the use of disinfectants but also adverse health effects where these methods were utilized. The use of misting tents for persons wearing regular clothes without PPEs may pose the following issues:
 - a. Safety of the chemical disinfectant used. Based on literature, commonly used chemical disinfectants such as hypochlorite are irritant to the skin and the mucous membrane (eyes, nose, and throat). It may also have adverse health effects when inhaled in an enclosed environment;
 - b. Efficacy of the chemical disinfectant. There are limited evidence-based studies to show that chemicals used for surface disinfectants intended to eliminate the human coronavirus would have the same efficacy when applied in the ambient environment or in humans.
2. Pending additional studies on demonstrating safety and efficacy, the use of disinfection tents, misting chambers, or sanitation booths for individuals without full PPE shall not be allowed.
 - a. Given the evolving nature of evidence for COVID-19, activities conducted by LGUs and agencies prior to the release of this issuance shall not be held against the implementing agency.
 - b. All implementing agencies are advised to repurpose the materials and staff initially indicated for these activities to efforts consistent with DOH guidelines such as for use of chemicals for surface disinfection, use of booths for temporary isolation or triage areas, or reallocation of staff for contact tracing.

- c. Individuals in full PPEs, characterized as having no external skin exposure, may be subjected to misting or spraying before doffing their full PPEs with careful consideration of the eyes, nose, mouth/throat.

I. Storage of Chlorine and Prepared Solutions

1. Store chlorine (liquid or powder) in air-tight non-metallic containers, away from heat, light and humidity in a ventilated area.
2. Carefully close disinfectant containers after use.
3. Never place in contact with water, acid, fuel, detergents, organic or inflammable materials (e.g. food, paper or cigarettes).
4. Change the prepared solutions every day. Do not prepare too much solution at a time to avoid wasting.

For strict compliance of all concerned


FRANCISCO T. DUQUE III, MD, MSc.
Secretary of Health

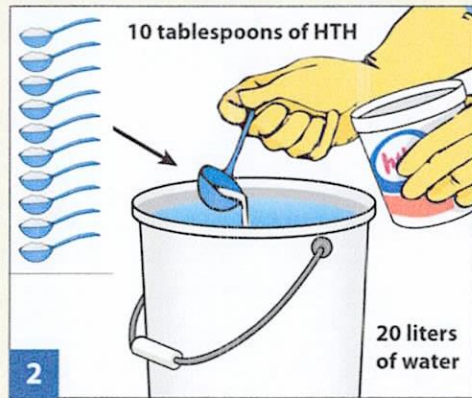
How to Make Strong (0.5%) Chlorine Solution from 70% Chlorine Powder

Use strong (0.5%) chlorine solution to clean and disinfect surfaces, objects, and body fluid spills.

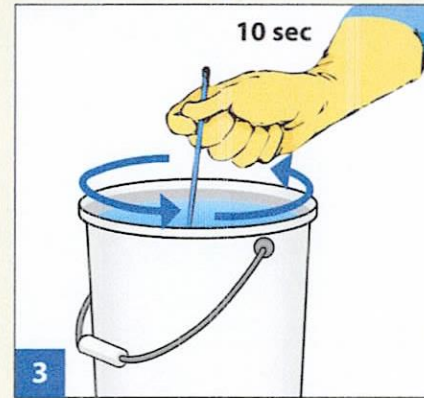
Make new strong (0.5%) chlorine solution every day. Throw away any leftover solution from the day before.



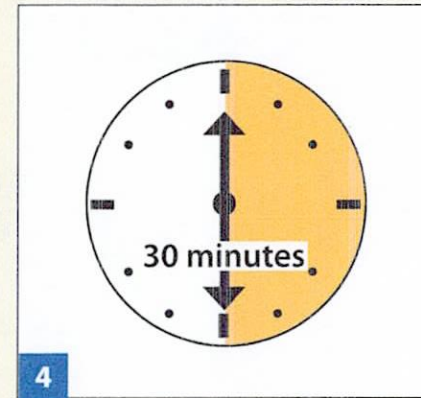
1 Make sure you are wearing **extended PPE**.



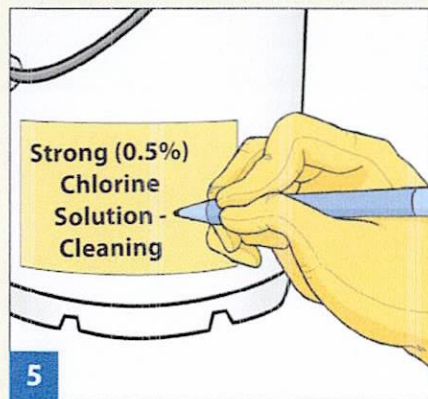
2 Add 10 tablespoons of HTH (70% chlorine) to 20 liters of water in a bucket.



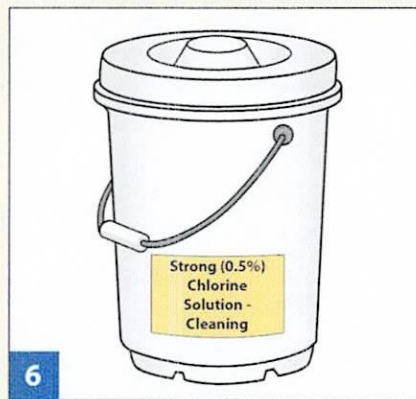
3 Stir well for 10 seconds, or until the HTH has dissolved.



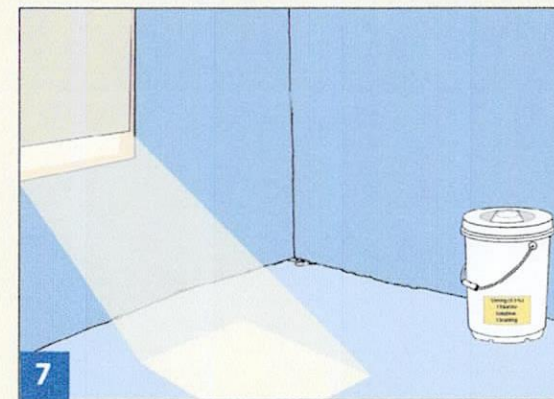
4 Wait 30 minutes before use.



5 Label bucket "**Strong (0.5%) Chlorine Solution - Cleaning.**"



6 Cover bucket with lid.



7 Store in shade. Do not store in direct sunlight.

Supplies Needed

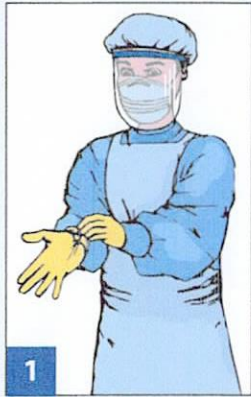
- Tablespoon
- Bucket with lid
- Water
- 70% HTH
- Stick for stirring
- Label

WARNING
Do NOT drink chlorine water.
Do NOT put chlorine water in mouth or eyes.

How to Make Mild (0.05%) Chlorine Solution

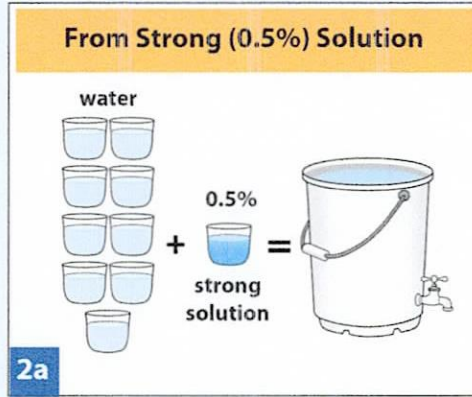
Use mild (0.05%) chlorine solution to wash ungloved hands.

Make new mild (0.05%) chlorine solution every day. Throw away any leftover solution from the day before.



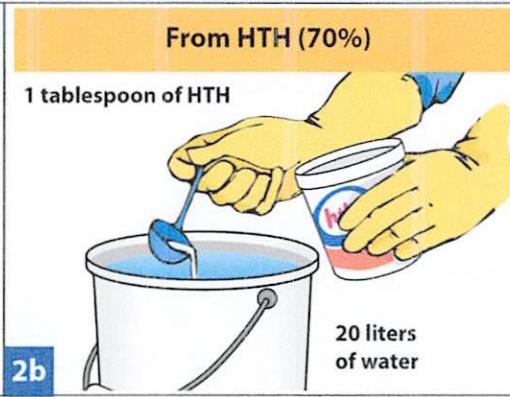
1

Make sure you are wearing **extended PPE**.



2a

Pour 9 parts water and 1 part strong (0.5%) solution into a bucket. Repeat until full.



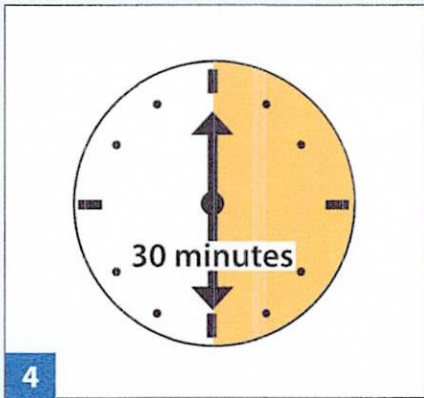
2b

Add one tablespoon of HTH (70%) to 20 Liters of water in a bucket.



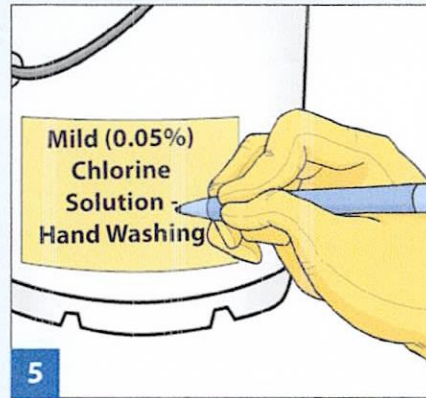
3

Stir well for 10 seconds, or until the HTH has dissolved



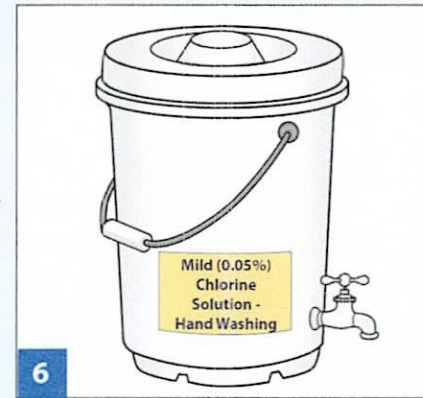
4

Wait 30 minutes before use.



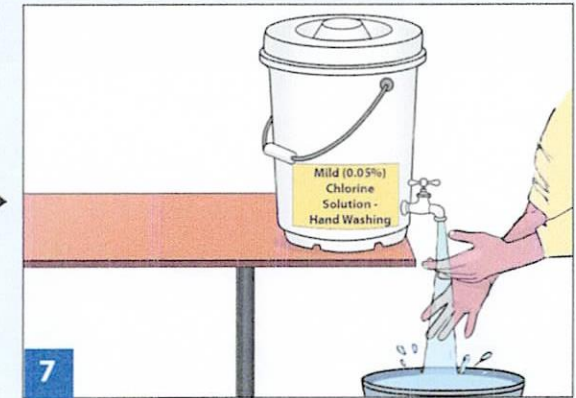
5

Label bucket "**Mild (0.05%) Chlorine Solution - Hand Washing.**"



6

Cover bucket with lid.



7

Place at hand washing stations.



Tablespoon



Measuring cup or liter bottle



Bucket with lid and spigot



Water



70% HTH



Stick for stirring



Label

Supplies Needed



WARNING

Do NOT drink chlorine water.
Do NOT put chlorine water in mouth or eyes.