

GUIDELINES FOR USING SODIUM HYPOCHLORITE AS A DISINFECTANT FOR BIOLOGICAL WASTE

INTRODUCTION

Sodium hypochlorite, commonly known as bleach, is frequently used as a disinfecting agent. It is a broad-spectrum disinfectant that is effective for the disinfection of viruses, bacteria, fungi, and mycobacterium. However, sodium hypochlorite is **NOT** effective in the disinfection of bacterial spores and prions.

CONCENTRATION & CONTACT TIME

The appropriate concentration of sodium hypochlorite for disinfecting general liquid biological waste is 5000 ppm, approximately 0.5%. Commercial bleach typically contains 5 - 6 % sodium hypochlorite; therefore, a 1:10 (v/v) dilution of bleach to liquid biological waste is appropriate. For biological waste containing a high organic load (e.g. blood, proteins, or lipids), the appropriate concentration of sodium hypochlorite is 10000 ppm or approximately 1%; therefore, a 1:5 (v/v) dilution of bleach to liquid biological waste is appropriate. Use of granules should follow manufacturer's instructions to reach the appropriate concentration.

Minimum Contact times:

Surface disinfection - 1 min

Liquid waste disinfection - 20 min

Important Notes:

Discount brands of bleach may have lower concentrations of sodium hypochlorite, so labels should be read carefully prior to dilution. "Colour-safe" bleach contains NO sodium hypochlorite (it has hydrogen peroxide instead) and should not be used for the disinfection of biological waste where bleach is indicated.

Sodium hypochlorite is known to be **corrosive to metals**, therefore it important to wipe down metal surfaces with water or ethanol after the sodium hypochlorite solution has dried. **Do not mix ethanol with liquid sodium hypochlorite solution.**

STABILITY & STORAGE

Bleach should be stored at room temperature. According to Clorox, undiluted household bleach has a shelf life of six months to one year from the date of manufacture, after which bleach degrades at a rate of 20% each year until totally degraded to salt and water.

A 1:10 bleach solution has a shelf life of 24 hours so dilutions must be freshly prepared prior to use.

Bleach must be stored separately from corrosives, soaps, detergents, or other cleaning products.

HEALTH & SAFETY

Global Harmonized System (GHS) classification of sodium hypochlorite solution:

- Skin corrosion/irritation (Sub-category 1B)
- Serious eye damage/eye irritation (Category 1)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)



Minimum Personal Protective Equipment (PPE) that **MUST** be worn when preparing or handling a sodium hypochlorite solution:

- Nitrile Rubber Gloves; and
- Canadian Standards Association (CSA) Approved Safety Glasses; and
- Respiratory protection (NIOSH Approved) should be used any time there is the potential for exposure to vapor and/or dust and a fume hood cannot be used; and
- Lab coat.

Use in a well-ventilated area. If sodium hypochlorite comes in contact with other cleaners containing ammonia or chlorine compounds, fatal levels of ammonia gas or chlorine gas can be produced. Never mix bleach with other chemicals. Do not dispose of towels wet with sodium hypochlorite and other chemicals together in waste containers. Do not autoclave.

EMERGENCY PROCEDURES

In case of exposure to eyes or skin, flush the area for 15 to 20 minutes with running water.

During Business Hours, bring the Safety Data Sheet (SDS) to UWO Workplace Health, SSB 4159, 519-661-2111 Ext. 85472.

After business hours, bring the SDS to the nearest Hospital Emergency Department.

I acknowledge I have read, understood, and I agree to follow the contents of this guideline:

Name:

Signature:

Date: