

DISINFECTING AND SANITIZING WITH BLEACH

First, you need to determine your bleach strength. The Companion Document on Page 2 is what Washington State Department of Health provides for determining the strength of your purchased bleach. If you look on your bottle of Clorox, the ingredients will state the amount of the active ingredient Sodium Hypochlorite. Several varieties of Clorox are sold. For example, one 121 oz. size of Clorox disinfecting bleach states 6.0% and one 81 oz. "33% more compact dose" size indicates 7.5%. Then follow the guidelines below.



Disinfecting and Sanitizing with Bleach Guidelines for Mixing Bleach Solutions for Child Care and Similar Environments

Preparation Tips

- **Prepare** a fresh bleach solution each day in a well-ventilated area that is separate from children.
- **Label** bottles of bleach solution with contents, ratio and date mixed.
- **Use cool water. Always add** bleach to cool water, **NOT** water to bleach.
- **Wear** gloves and eye protection.
- **Prepare** solution in an area with an eye wash.

Disinfecting Solutions			
For use on diaper change tables, hand washing sinks, bathrooms (including toilet bowls, toilet seats, training rings, soap dispensers, potty chairs), door and cabinet handles, etc.			
Water	Bleach Strength*	Bleach Strength*	Bleach Strength*
	2.75%	5.25-6.25%	8.25%
1 Gallon	1/3 Cup, plus 1 Tablespoon	3 Tablespoons	2 Tablespoons
1 Quart	1 1/2 Tablespoons	2 1/4 Teaspoons	1 1/2 Teaspoons
Sanitizing Solutions			
For use on eating utensils, food use contact surfaces, mixed use tables, high chair trays, crib frames and mattresses, toys, pacifiers, floors, sleep mats, etc.			
1 Gallon	1 Tablespoon	2 Teaspoons	1 Teaspoon
1 Quart	1 Teaspoon	1/2 Teaspoon	1/4 Teaspoon

Disinfection of non-porous non-food contact surfaces can be achieved with 600 parts per million (ppm) of chlorine bleach. To make measuring easier, the strengths listed in this table represent approximately 600-800 ppm of bleach for disinfecting, and approximately 100 ppm for sanitizing. Chlorine test strips with a measuring range of 0-800 ppm or higher can also be used to determine the strength of the solution.

Contact your local health jurisdiction for further instructions on cleaning and disinfecting if specific disease or organisms are identified as causing illness in your program.

***Use only plain unscented bleach** that lists the percent (%) strength on the manufacturer's label. Read the label on the bleach bottle to determine the bleach strength. For example, Sodium Hypochlorite...6.25% or 8.25%.

Steps to Follow

- **Clean** the surface with soap and water before disinfecting or sanitizing.
- **Rinse** with clean water and dry with paper towel.
- **Apply** chlorine bleach and water solution to the entire area to be disinfected or sanitized.
- **Air dry** for at least 2 minutes.

This chart was created by the Disinfection Workgroup led by the Washington State Department of Health. Workgroup members consist of staff from the Department of Early Learning, Snohomish Health District, Local Hazardous Waste Management Program in King County, Washington State Department of Ecology, the Coalition for Safety and Health in Early Learning, and the Washington State Department of Health.

For people with disabilities, this document is available on request in other formats.
To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).



Chlorine Bleach Disinfecting and Sanitizing Chart Companion Document

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Background: Sodium hypochlorite is the active ingredient in household bleach or chlorine bleach. It is economical, and is an effective disinfectant with a broad spectrum of antimicrobial activity. It has been the primary disinfectant used in early learning programs in Washington State for more than 30 years. During this time, most household chlorine bleach was available at strengths of 5.25-6.25%. The recommended concentration for disinfection has been 600-800 ppm of chlorine bleach and 50 to 200 parts per million (ppm) for sanitizing.

In 2012, some manufacturers changed their chlorine bleach formulation to a strength of 8.25% with a registered non-food contact surface disinfection level of 2400 ppm, the level often used in hospitals. Their sanitizing level is 200 ppm, the upper end of the range allowed by the Food and Drug Administration (FDA).

Problem: As of 2014, the most available household chlorine bleach used for disinfection in children's programs in many areas of Washington State is at a strength of 8.25%. Instructions for use of these products and other strength bleaches indicate 2400 ppm of chlorine bleach is needed for disinfection. This represents 3 to 4 times the levels previously recommended for Washington's child cares. This issue has raised the question of what guidance to give child care providers regarding the concentration of disinfection and sanitizing solutions for use in their programs.

Discussion: It is prudent to use as few chemicals as possible in a child's environment. We believe 2400 ppm is too strong to use in children's environments when they are present, especially since children's lungs are still developing, and are more vulnerable to exposures to toxic chemicals.

The U.S. Environmental Protection Agency (EPA) (2014) guidelines contain procedures for testing, and test organisms that products must be able to destroy at 99.9% in order to be labeled as disinfectants and receive EPA's approval. The Disinfection Workgroup found several products that received EPA approval for disinfection at a strength of 600 ppm. For example:

Name of Product	Strength of Sodium Hypochlorite	EPA's Approval date
Aqua Guard Bleach	12.5%	August 4, 2014
Clorox Ultra Bleach	6.15%	August 29, 2012
KA Steel	12.5%	February 25, 2014
KIK International –Pure Bright Disinfectant Bleach	5.25%	January 13, 2014
So White Brand Bleach and Disinfectant	5.25%	July 11, 2013
Vertex	5.25%	February 12, 2014

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