



# **CLEANING AND DISINFECTION FOR ASTHMA SAFE SCHOOLS**

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Fall 2019 School EHS Workshops

# Washington State Department of Health School Environmental Health & Safety Program

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## **Our Mission**

To protect and improve the  
Environmental Health and Safety  
condition of schools in Washington state.



# Spreading Germs

- Foodborne
- Waterborne
- Person-to-Person
- Airborne
- Contaminated surfaces



# Prevention – Everyone's Job!

- Wash your hands with plain soap and water – often!
- Cover your cough or sneeze.
- Avoid touching your eyes, nose, or mouth.
- Stay out of spit zones.
- Get vaccinations.
- Good ventilation.
- Stay home when ill.
- Support Public Health.



# Hand Antiseptics

- Not a substitute for hand washing
- Not effective on dirty hands
- At least 60% alcohol
- Hands should stay wet for 10-15 seconds
- Not considered effective on non-enveloped viruses or spores
- Flammable / poison
- Fragrance free
- Not recommended:
  - Benzalkonium chloride / “quat” based / non-alcohol / “natural”



CDC: Show Me the Science:

<http://www.cdc.gov/handwashing/show-me-the-science-hand-sanitizer.html>

# Schools Need An Infection Control Plan

- **Clear Protocol**
- **Independent third party certified cleaning products**
  - **Ingredients not known to contribute to asthma, cancer, respiratory irritation, liver and kidney disease**
- **EPA registered sanitizers-disinfectants**
- **Best practices & procedures**
- **Cleaning equipment designed to reduce the amount of chemicals required**
  - **Walk-off mats, HEPA filters, microfiber, etc.**
- **Training programs**

Staff and students deserve to work and learn in a safe and healthy school environment, and they can, since safer cleaning products and methods exist.

**HEALTHY CLEANING  
& ASTHMA-SAFER  
SCHOOLS**

A HOW-TO GUIDE

OCTOBER 2014

[YOUR NAME]  
[SCHOOL DISTRICT]  
[DATE]

california work-related asthma prevention program

CDPH California Department of Public Health

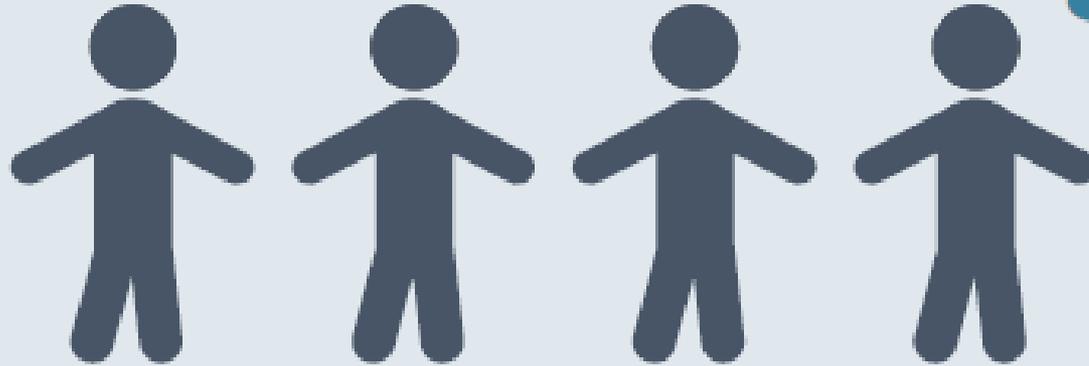
# Work-Related Asthma in California

**20%**



1 In 5  
worked as  
a cleaner.

**80%**



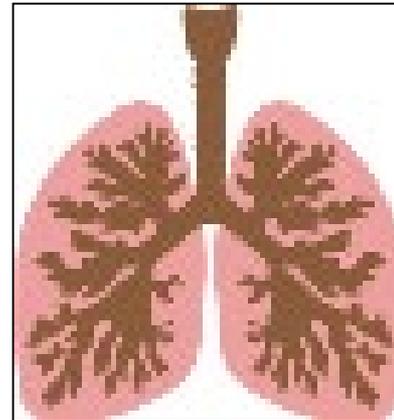
4 of 5 of workers did not clean but were around  
during cleaning or after cleaning just happened.

**50%**

Half had new asthma that started after they began work.  
On-the-job exposures likely caused their asthma.

# Health Hazards of Cleaning Products

- Causing asthma and making it worse
- Irritating skin, eyes, nose, throat, causing headaches
- Disrupting or acting like hormones
- Causing cancer



# Asthma: significant problem in schools

Poor indoor air quality makes it worse



# Work -Related Asthma

New asthma from work  
or

Asthma gets worse while at work



# New Asthma

People may get asthma as adults  
from exposures at work

Asthmagens:  
Ingredients that may  
cause asthma

Small amounts  
→ lifetime impact



# Safer Products Might Have Prevented Illness and Saved Custodian's Job



# Work-Aggravated Asthma

Substances including asthmagens that may make asthma worse at work:

- Strong odors
- Irritating chemicals
- Dust
- Cold air
- Animal dander
- Mold
- Plant materials



Agricultural dust near school



Mold on wall

# WRA + Cleaning Products

Many with WRA didn't know specific ingredients.  
Those who knew reported:

- Bleach
- Acid cleaners
- Disinfectants
- Carpet cleaner
- Floor stripper
- Ammonia
- Graffiti removers
- Mixing cleaning products, etc.



# Learning and Productivity

Asthma: leading cause of school absences for a chronic illness

Hospital care cost \$193 million for asthma in 2005-2007 in California

Schools lose money each day a student is absent

Lower academic achievement

Lower productivity among workers, more sick days



# Solution: Cleaning for Asthma-Safe Schools

Protects custodians, staff, children's health

Improves indoor air quality

Reduces environmental harm



# Successes

Cost-savings

New equipment

Healthier environments

Reduced absenteeism

Fewer injuries



***“Green products can clean just as well or better than some of the products we used that were not labeled or considered “green.” –Livermore School District***

# Green Saves Green

## School District Example:

Reduced cleaning  
chemicals

+

Changed cleaning  
procedures

=

28% cost savings



# Green Saves Green



“By switching to greener cleaners, my custodians could see that we could save the district money and that could save their jobs.” –  
Alameda Unified School District,  
California

“Financially, it’s a wash, and the benefits are huge. Why would you not switch to green when it benefits everyone’s health? It’s a no-brainer.” –Livermore Joint Valley Unified School District, California

# Green Cleaning

Definition: Products and services that reduce health and environmental impact compared to other products and services used for the same purpose.



# Green Cleaners

Won't cause cancer, impact reproductive health. Some are safer for asthma.



# Green Cleaners

Improved air quality



Won't pollute air or harm fish



# Certification Programs



Green Seal Industrial and Institutional Cleaners Standard (GS-37)

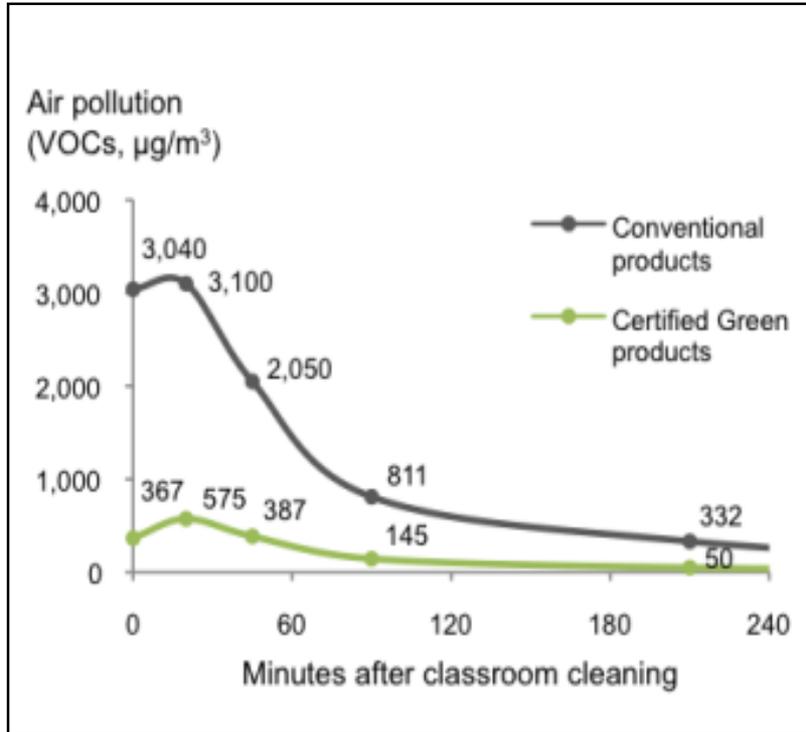


UL ECOLOGO Hard Surface Cleaners Standard (UL 2759)

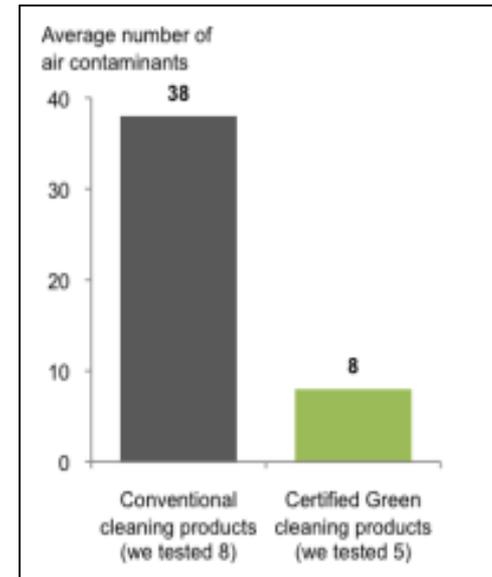


Consider settings with vulnerable populations

# Greener School Cleaning Supplies = Fresh Air + Healthier Schools



Green cleaning releases  
less air pollution



Green general purpose  
cleaners had fewer air  
contaminants

# Greenwashing

- ▶ Selling you a “green” product that isn’t actually green.
- ▶ Third-party certified groups make sure products meet criteria to reduce risks to health and the environment.



Advertising and labels not always reliable

# Greenwashing



Front of Bottle



Back of Bottle

Company's self-declared green products may not be safer or healthier

# Microfiber

## Important cleaning tools

- Little to no cleaning chemicals
- Less effort, absorbent, durable
- Prevent injuries, illnesses
- Avoid cross-contamination
- Simple to clean



# Asthma-Safer Cleaning

- Update and maintain equipment
- Ventilate adequately and regularly change air filters
- Air fresheners not asthma-safer
- Clean has no scent



# Asthma-Safer Cleaning

- Disinfect only when necessary
- Don't disinfect floors--no greater health protection
- High-risk areas to possibly disinfect: athletic departments, bathrooms, cafeterias, child care areas, kitchens, nurse health rooms



# Steps

1. Create team
2. Train team on asthma-safer cleaning
3. Inventory products
4. Select certified products to test
5. Arrange vendor presentations, select vendors
6. Test and evaluate products
7. Share your successes, set district policies



# Outcomes

- Custodians: experts in district
- Leaders become knowledgeable about healthier products
  - “Let’s pick a different product. This one has asthmagens.”
- Less absenteeism
- Reduce cleaning budgets
- Serve as a model of success



# Clean – Sanitize – Disinfect?

- **Cleaners, Soaps, Detergents**
  - Remove dirt/organics.
- **Sanitizers**
  - Reduce germs from surfaces – 99.9%.
- **Disinfectants**
  - Destroy or inactivate germs and prevent them from growing.



# Cleaning and/or Disinfecting ?

- High touch surfaces
  - Door handles
  - Faucets
  - Keyboards
  - Railings
  - Phones
  - Drinking Fountains
- Bathrooms
- Drinking Fountains
- Where someone is ill



# Restrooms

- Clean/disinfect bathroom at least daily.
- Soap and paper towel dispensers full.
- Tempered (85°-105°F) water.
- WAC 246-366-060: “Adequate, conveniently located toilet and handwashing facilities shall be provided for students and employees.”

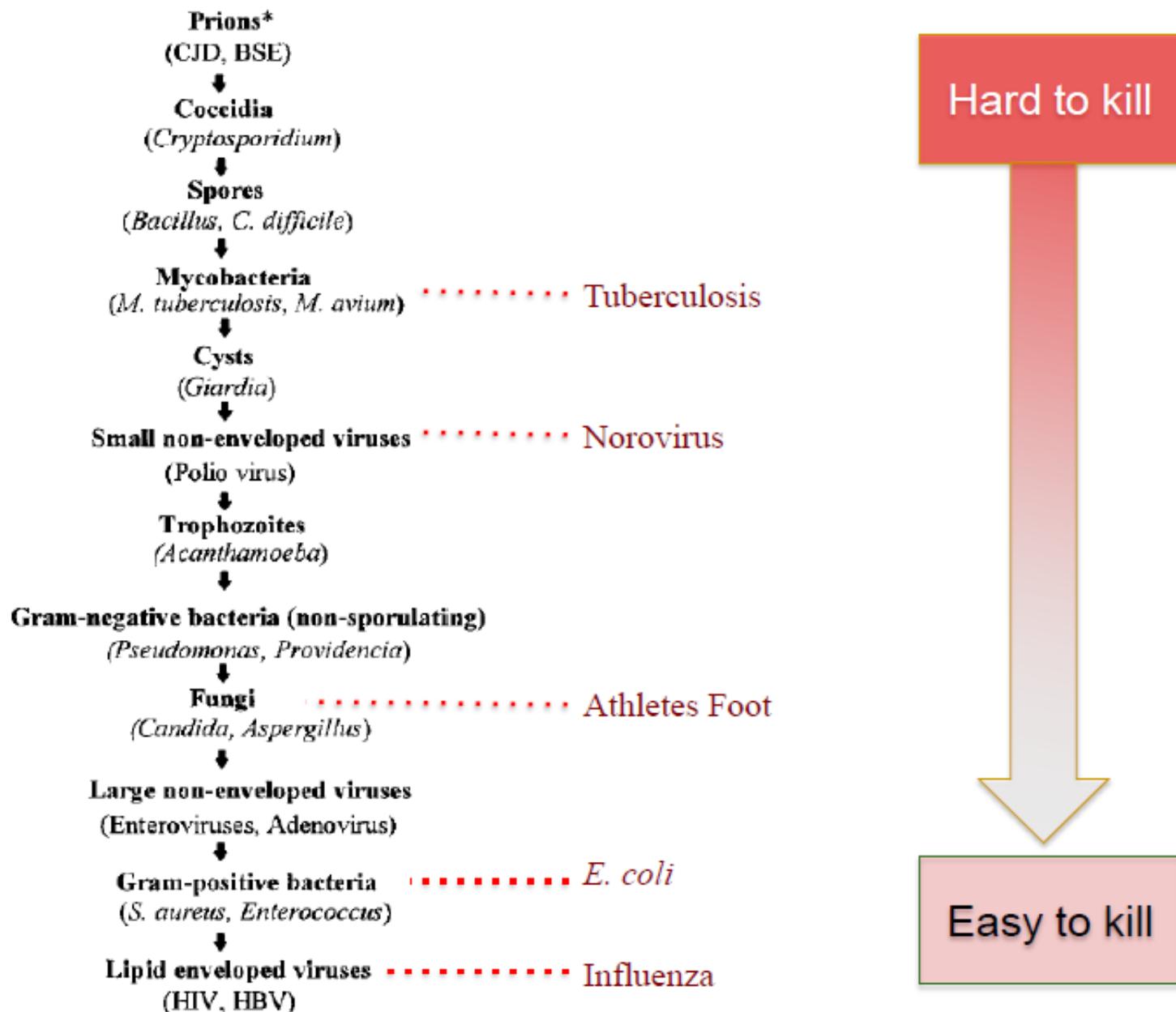


FIG. 1. Descending order of resistance to antiseptics and disinfectants. The asterisk indicates that the conclusions are not yet universally agreed upon.

# Characteristics of Selected Disinfectants

FOR MORE INFORMATION, SEE THE 'DISINFECTION 101' DOCUMENT AT [www.cfsph.iastate.edu](http://www.cfsph.iastate.edu)

Disinfectant Category	Alcohols	Aldehydes	Biguanides	Halogens: Hypochlorites	Halogens: Iodine Compounds	Oxidizing Agents	Phenols	Quaternary Ammonium Compounds (QAC)
Sample Trade Names	Ethyl alcohol Isopropyl alcohol	Formaldehyde Glutaraldehyde	Chlorhexidine Nolvasan <sup>®</sup> Virosan <sup>®</sup>	Bleach	Betadine <sup>®</sup> Providone <sup>®</sup>	Hydrogen peroxide Peracetic acid Virkon S <sup>®</sup> Oxy-Sept 333 <sup>®</sup>	One-Stroke Environ <sup>®</sup> Pheno-Tek II <sup>®</sup> Tek-Trol <sup>®</sup>	Roccal <sup>®</sup> Diquat <sup>®</sup> D-256 <sup>®</sup>
Mechanism of Action	<ul style="list-style-type: none"> <li>•Precipitates proteins</li> <li>•Denatures lipids</li> </ul>	<ul style="list-style-type: none"> <li>•Denatures proteins</li> <li>•Alkylates nucleic acids</li> </ul>	<ul style="list-style-type: none"> <li>•Alters membrane permeability</li> </ul>	<ul style="list-style-type: none"> <li>•Denatures proteins</li> </ul>	<ul style="list-style-type: none"> <li>•Denatures proteins</li> </ul>	<ul style="list-style-type: none"> <li>•Denature proteins and lipids</li> </ul>	<ul style="list-style-type: none"> <li>• Denatures proteins</li> <li>• Alters cell wall permeability</li> </ul>	<ul style="list-style-type: none"> <li>• Denatures proteins</li> <li>• Binds phospholipids of cell membrane</li> </ul>
Advantages	<ul style="list-style-type: none"> <li>•Fast acting</li> <li>•Leaves no residue</li> </ul>	<ul style="list-style-type: none"> <li>•Broad spectrum</li> </ul>	<ul style="list-style-type: none"> <li>•Broad spectrum</li> </ul>	<ul style="list-style-type: none"> <li>•Broad spectrum</li> <li>•Short contact time</li> <li>•Inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>•Stable in storage</li> <li>•Relatively safe</li> </ul>	<ul style="list-style-type: none"> <li>•Broad spectrum</li> </ul>	<ul style="list-style-type: none"> <li>• Good efficacy with organic material</li> <li>• Non-corrosive</li> <li>• Stable in storage</li> </ul>	<ul style="list-style-type: none"> <li>• Stable in storage</li> <li>• Non-irritating to skin</li> <li>• Effective at high temperatures and high pH (9-10)</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>•Rapid evaporation</li> <li>•Flammable</li> </ul>	<ul style="list-style-type: none"> <li>•Carcinogenic</li> <li>•Mucous membranes and tissue irritation</li> <li>•Only use in well ventilated areas</li> </ul>	<ul style="list-style-type: none"> <li>•Only functions in limited pH range (5-7)</li> <li>•Toxic to fish (environmental concern)</li> </ul>	<ul style="list-style-type: none"> <li>•Inactivated by sunlight</li> <li>•Requires frequent application</li> <li>•Corrodes metals</li> <li>•Mucous membrane and tissue irritation</li> </ul>	<ul style="list-style-type: none"> <li>•Inactivated by QACs</li> <li>•Requires frequent application</li> <li>•Corrosive</li> <li>•Stains clothes and treated surfaces</li> </ul>	<ul style="list-style-type: none"> <li>•Damaging to some metals</li> </ul>	<ul style="list-style-type: none"> <li>• Can cause skin and eye irritation</li> </ul>	
Precautions	Flammable	Carcinogenic		Never mix with acids; toxic chlorine gas will be released			May be toxic to animals, especially cats and pigs	
Vegetative Bacteria	Effective	Effective	Effective	Effective	Effective	Effective	Effective	YES—Gram Positive Limited—Gram Negative
Mycobacteria	Effective	Effective	Variable	Effective	Limited	Effective	Variable	Variable
Enveloped Viruses	Effective	Effective	Limited	Effective	Effective	Effective	Effective	Variable
Non-enveloped Viruses	Variable	Effective	Limited	Effective	Limited	Effective	Variable	Not Effective
Spores	Not Effective	Effective	Not Effective	Variable	Limited	Variable	Not Effective	Not Effective
Fungi	Effective	Effective	Limited	Effective	Effective	Variable	Variable	Variable
Efficacy with Organic Matter	Reduced	Reduced	?	Rapidly reduced	Rapidly reduced	Variable	Effective	Inactivated
Efficacy with Hard Water	?	Reduced	?	Effective	?	?	Effective	Inactivated
Efficacy with Soap/Detergents	?	Reduced	Inactivated	Inactivated	Effective	?	Effective	Inactivated

? Information not found

DISCLAIMER: The use of trade names does not in any way signify endorsement of a particular product. For additional product names, please consult the most recent Compendium of Veterinary Products.

REFERENCES: Linton AH, Hugo WB, Russel AD. Disinfection in Veterinary and Farm Practice. 1987. Blackwell Scientific Publications; Oxford, England; Quinn PJ, Markey BK. Disinfection and Disease Prevention in Veterinary Medicine, In: Block SS, ed., Disinfection, Sterilization and Preservation. 5th edition. 2001. Lippincott, Williams and Wilkins: Philadelphia.

# Disinfectants

Considered pesticides by  
Environmental Protection  
Agency (EPA)

Cannot be third-party certified  
by Green Seal or UL  
ECOLOGO

EPA's Design for the  
Environment has a safer  
disinfectants program



# EPA's Design for the Environment

- **Antimicrobial Pesticide Pilot Project**
- **The DfE logo on an EPA-authorized antimicrobial pesticide label means that the product:**
  - **Is in the least-hazardous classes (III & IV) of EPA's acute toxicity)**
  - **Is unlikely to have carcinogenic or endocrine disruptor properties**
  - **Is unlikely to cause developmental, reproductive, mutagenic, or neurotoxicity issues**
  - **All ingredients reviewed**
  - **Does not require the use of agency mandated PPE**
  - **Has no unresolved efficacy failures**
  - **Has no unresolved compliance/enforcement action**



# Disinfectants

## Asthma-Safer Ingredients

- Hydrogen Peroxide
- Lactic Acid
- Citric Acid
- Alcohol-ethyl alcohol, isopropyl alcohol

## Ingredients that may Cause Asthma

- Quaternary ammonium compounds include alkyl dimethyl benzyl ammonium chloride, benzalkonium chloride, lauryl dimethyl benzyl ammonium chloride, didecyl dimethyl ammonium chloride
- Bleach (sodium hypochlorite)
- Acetic acid (found in vinegar)
- Thymol (skin sensitizer, suspected asthmagen)
- Glutaraldehyde
- Peracetic acid (peroxyacetic acid)

# Safer Products and Practices for Disinfecting and Sanitizing Surfaces

## San Francisco Department of the Environment

**Table 1. Summary of Health and Environmental Attributes of 11 Active Ingredients Commonly Found in Surface Disinfectants and Non-food Contact Sanitizers**

ACTIVE INGREDIENT	CANCER	REPRODUCTIVE TOXICITY	ASTHMA	SKIN SENSITIZATION	AQUATIC TOXICITY	PERSISTENCE
Caprylic Acid	No	No	No	No	Med acute	Low
Citric Acid	No	No	No	No	None	Low
Hydrogen Peroxide	No <sup>1</sup>	No	No	No	High acute	Low
Lactic Acid	No	No	No	No	None	Low
Ortho-Phenylphenol (OPP)	Known	Suspected	No	No	Very high acute	Low
Peroxyacetic Acid (PAA)	No	No	Yes	No	Very high acute	Low
Pine Oil	No <sup>2</sup>	No	No <sup>3</sup>	Yes	None	Low
Quaternary Ammonium Chloride Compounds (Quats)	No	Suspected	Yes	One compound <sup>4</sup>	High acute, med	Very High
Silver	No	No	No	No	High acute	Very High
Sodium Hypochlorite (Chlorine Bleach)	No	No	Yes	No	Very high acute	Low
Thymol	No	No <sup>5</sup>	No	Yes	High acute	Low

# Chlorine Chemistry

**XCl + H<sub>2</sub>O → HOCl + By-product** (specific to the type of chlorine)

HOCl (hypochlorous acid)  $\xrightarrow{\text{pH}}$  H<sup>+</sup> + OCl<sup>-</sup> (hypochlorite ion)

HOCl + OCl<sup>-</sup> = Free Chlorine → Active Available Disinfectants

At pH 6.0: ~97% HOCl

pH 7.5: ~50% of each

pH 8.5: ~9% HOCl

HOCl ~60x-100x more effective  
than OCl<sup>-</sup> at killing microorganisms

**NaOCl** – Sodium Hypochlorite (Bleach – 10-12% available chlorine)

NaOCl + H<sub>2</sub>O → HOCl + Na<sup>+</sup> + OH<sup>-</sup> (pH ~9-14)

**Sodium Dichloroiso-cyanurate** (organic stabilized chlorine form)

- 50% of the “total” available chlorine is present as “free” available chlorine
- The remainder is “combined” in the form of mono – or dichloroiso-cyanurate
- pH 6-7

On-site Generation – from NaCl or Sodium Dichlor tablets

# Bleach

- Disinfectant, NOT a cleaner
- Make a fresh solution daily
- Never mix with ammonia or acid products
- Use gloves, ventilation, eye protection
- Emergency Eye Wash
  - DOSH Directive 13.0 July 15, 2011



<http://www.ini.wa.gov/Safety/Rules/Policies/PDFs/DD1300.pdf>

## 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* 2.75%	Bleach Strength* 5.25-6.25%	Bleach Strength* 8.25%
1 Gallon	1/3 Cup, plus 1 Tablespoon	3 Tablespoons	2 Tablespoons
1 Quart	1½ Tablespoons	2¼ Teaspoons	1½ 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	½ Teaspoon	¼ 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).

# Special Concerns

- **Cake toilet deodorizers**
  - paradichlorobenzene
- **Citrus & Terpene Solvents**
  - D-Limonene
- **Nano Technology**
  - nano-silver
- **“Air Fresheners”**
- **Ozone generators**
- **Fragrances**
- **Anti-microbial soaps**
  - Triclosan / Triclocarban

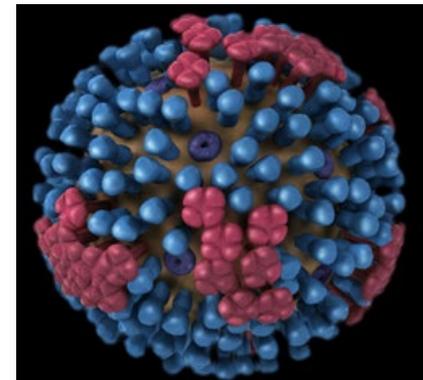
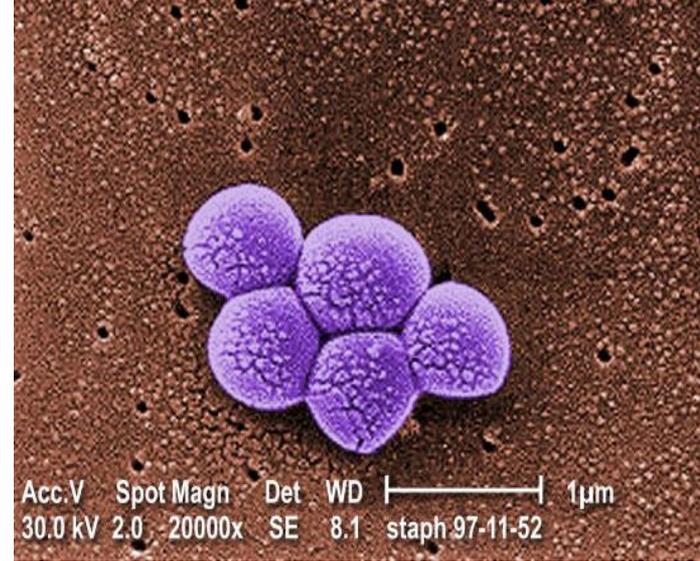


# No Foggers



# Specifics

- Influenza
- Measles
- *Pertussis* (Whooping Cough)
- MRSA  
*Methicillin Resistant Staphylococcus aureus*
- Norovirus
- *Clostridium difficile* (C. diff)



# Norovirus

- **24-48 hour incubation period**
- **Sudden onset vomiting, diarrhea , cramping**
- **Low-grade fever**
- **Symptoms last 1-2 days**
- **Viruses in stool and vomit**
- **Can shed virus for days to 2 weeks after symptoms gone**
- **Highly contagious (as little as 10 virus particles can cause illness)**
- **Lives for days on surfaces, where it can be “picked up” by others**

# Vomit Events in School

## Preparedness

- Identify disinfection products sufficient to inactivate norovirus, consider hard and soft surfaces
- Include a training program for clean-up employees, building maintenance, janitorial, and other affected staff.
- Ready personal protective equipment (PPE).

## 25' Radius

- People are kept out of the actual “spill” area
- Initial cleaning of gross visible contamination to minimize spread (including disinfectant and/or absorbent).
- Any uncovered food in the immediate area must be discarded.

## Report & Monitor

- Notify local health of absenteeism and/or if possibly linked to kitchen service
- Cleaning and disinfection tools and equipment from food preparation, storage and handling areas.
- Monitor clean-up employees for symptoms for 72 hours.

# Sporicide / Noro / EV D68 / Hanta

- Blood spills, diarrheal stools, rodent droppings 5000 ppm bleach
- Surfaces must be cleaned with soap and water first
- Usual 1:10 solution - 1 part bleach to 9 parts water
  - 6.25 %: 1 1/2 cups bleach/1 gallon water
  - 8.25 % bleach, (1:9) - 1 1/4 cups bleach/1 gallon water
  - Wet contact time - diarrheal stools: 5+ minutes
  - Wet contact time - Noroviruses: 1+ minute
  - Wet contact time - rodent droppings: 10 minutes
    - ◆ See WSDOH [Hantavirus](#) webpage for specifics.
- This is an extremely concentrated bleach solution. Protect eyes, skin, and clothing during preparation and use. Keep the area well ventilated.

# Fungi/Ringworm/Athlete's Foot

- 1) Clean thoroughly with soap and water to remove all organic material.
  - 2) Apply chlorine bleach solution with a concentration of 2400 ppm (see below), leaving the surface wet for ten minutes or a 3600 ppm bleach solution staying wet for five minutes.
  - 3) Rinse with clean water.
  - Fungus can be difficult to eliminate. Where persistent, multiple applications of bleach at a concentration of 5000 ppm, with drying in between, may be necessary to kill.
- OR
- Use an EPA registered disinfectant where the label indicates it is effective against fungi.

# MRSA

(Methicillin-Resistant Staphylococcus aureus)

- Type of “staph” infection
- Often causes skin infections
- Resistant to (not killed by) penicillin
- Treatable with appropriate antibiotic
- Lives on surfaces for days – at least 70!



# Athletic Areas / MRSA

- **Intact surfaces.**
- **Routine schedules for cleaning & disinfecting.**
- **All hard surfaces that may contact skin at least daily.**
- **EPA-approved disinfectant.**
- **Keep soap dispensers full – fragrance free, NOT antibiotic soap.**
- **Have separate cleaning mops (preferably micro-fiber) and buckets for athletic areas.**

# Resources

- Cleaning for Asthma-Safe Schools (CLASS), CDPH
  - <https://www.cdph.ca.gov/Programs/CCDC/DEOD/DCID/DCID/Pages/CLASS.aspx>
- *Cleaning for Healthier Schools – Infection Control Handbook 2010*
  - [https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental\\_health/eoha/pdf/CleaningforHealthierSchoolsFINAL2411.pdf.pdf?la=en](https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/environmental_health/eoha/pdf/CleaningforHealthierSchoolsFINAL2411.pdf.pdf?la=en)
- Green Clean Schools, Healthy Schools Campaign, The Quick & Easy Guide to Green Cleaning in Schools
  - <https://healthyschoolscampaign.org/programs/green-clean-schools/>
- Cleaning For Healthy Schools Toolkit
  - <http://healthyschools.org/Cleaning-For-Healthy-Schools/>
- Informed Green Solutions
  - <http://www.informedgreensolutions.org/>
- Characteristics of Selected Disinfectants
  - <http://www.cfsph.iastate.edu/Disinfection/Assets/CharacteristicsSelectedDisinfectants.pdf>
- *Safer Products and Practices for Disinfecting*, 2014, SFDE, RPN
  - [http://www.sfenvironment.org/sites/default/files/fliers/files/sfe\\_th\\_safer\\_products\\_and\\_practices\\_for\\_disinfecting.pdf](http://www.sfenvironment.org/sites/default/files/fliers/files/sfe_th_safer_products_and_practices_for_disinfecting.pdf)

## Cleaning for Health in the Classroom Best Practices for Teachers



School custodial staff is responsible for cleaning schools. Some teachers choose to do additional cleaning. Here is how to ensure those efforts tackle dirt and germs safely and effectively.

### Teach good handwashing habits - the #1 way to keep germs from spreading.

Use plain soap and water for handwashing – before eating, after using the bathroom, after recess, etc. Antibacterial soap is not recommended. Use plain fragrance-free soap. When there is no access to a sink, as on a field trip, alcohol-based (at least 60% alcohol, dye-free and fragrance-free) hand sanitizer or alcohol-based sanitizer wipes can be used. Hand sanitizers are not a substitute for handwashing. They are not effective when hands are dirty or greasy.

#### Cleaning for Health benefits all

- Lowers absenteeism
- Increases productivity
- Improves indoor air quality
- Reduces asthma and allergy triggers

#### Good to know:

- Kids are more vulnerable to chemical exposures.
- Many common cleaning products have ingredients that can harm health, especially the lungs.

### Know the difference between Cleaning, Sanitizing, and Disinfecting.

#### Use the right product for the task:

- **CLEANING** removes dirt and most germs. Use soap and water. A third party certified green cleaner is preferred. In the classroom, cleaning is the focus.
- **SANITIZING** reduces germs to safe levels, for example in food service environments. Food code regulations have specific requirements for sanitizers in the cafeteria and kitchen.
- **DISINFECTING** kills most germs, depending on the type of chemical, and only when used as directed on the label.
- In schools, custodial staff use disinfectants and sanitizers regularly only in high-risk areas – nurse’s office, bathrooms, cafeterias, kitchens, drinking fountains, sink and door handles, and athletic facilities; preferably, when students are not present. Overuse does not provide any additional protection and can expose students and staff to harmful chemicals.

### Teachers can rely on basic *cleaning* to remove dirt and germs in the classroom.

If staff, besides trained custodial staff, needs to assist with classroom cleaning, they should use a school or district provided basic cleaner. A third party certified green cleaner is preferred.

- Custodial staff can make a simple all-purpose cleaner for classrooms. Mix one teaspoon of fragrance-free dish soap in a spray bottle filled with water. Spray on surface and scrub with paper towels or a microfiber cloth. Rinse and wipe dry to remove any residue.
- Microfiber cleaning cloths improve cleaning – the removal of dirt and germs. Dampened with water they are great dust removers. With soap and water, they remove most germs.
- Disinfecting is the responsibility of school custodial staff. They are trained to use disinfectants in a safe and effective manner and to clean up potentially infectious materials and body fluid spills – blood, vomit, feces, and urine. Contact your custodian or school nurse if students are ill and your classroom needs cleaning and disinfection. If teachers use disinfectants, the district must provide training and supply the appropriate cleaner and sanitizer or disinfectant.

Students should never use disinfectants. Disinfectant wipes should not be used to clean hands. This includes Clorox wipes.

#### If students are helping:

- They should only use soap and water.
- Fragrance-free baby wipes could be used for quick cleaning.
- Most store-bought cleaning products are not safe for children to use.

## Cleaning for Health in the Classroom Frequently Asked Questions



### How does cleaning reduce germs?

Cleaning works by removing dirt and organic matter that contains and protects germs. Soap breaks down oils and allows dirt, contaminants, and germs to be more easily removed. Cleaning with soap, water, and a microfiber cloth will remove most germs.

### Why is handwashing better than hand sanitizer?

Soap and rubbing hands together under running water removes oil, dirt, and harmful surface germs. Hand sanitizer does not remove dirt in which germs hide and only kills a few easy-to-kill ones.

### Why use plain soap for handwashing?

Antibacterial ingredients, in particular triclosan and quaternary ammonia compounds (quats), only kill a few types of germs and are unnecessary when washing hands. It doesn’t matter if germs are alive or dead when they are washed down the drain.

### What about non-alcohol hand sanitizers?

The U.S. Centers for Disease Control and Prevention only recommends hand sanitizers with at least 60% alcohol. Non-alcohol ones are even less effective than alcohol hand sanitizers.

### How does this guidance affect fall classroom supply request lists?

#### Okay to Request

- Fragrance-free baby wipes.
- Paper towels (recycled content preferred).

#### DO NOT Request

- Disinfecting wipes.
- Non-alcohol-based hand sanitizer.

### What are the issues with disinfecting wipes?

- Disinfecting wipes are often overused. They are not appropriate for general cleaning when an all-purpose cleaner or soap and water would suffice.
- Disinfecting wipes (e.g. Clorox, Lysol) usually contain quats and fragrance chemicals. These ingredients can trigger asthma and are associated with adverse health effects.
- Disinfectants can give a false sense of security because when they are not used exactly to label instructions, they don’t work properly. Most disinfecting wipes require the surface to be cleaned first, and then remain visibly wet 4-10 minutes (dwell time) to be effective, requiring multiple wipes.

### Why is it important to use fragrance-free products in school?

Fragrance is one of the most frequently identified allergens, can irritate the respiratory system, cause headaches, and exacerbate asthma.

### What’s so great about microfiber cloths?

Their split fibers create more surface area and are superior for removing dust, dirt, and germs. They are reusable and can be laundered or washed by hand.

### Why should teachers not bring common cleaning products (including bleach) from home into the classroom?

- Some common cleaning products are dangerous when mixed. Never mix bleach with ammonia, acids, or other disinfectants. An example: Comet, containing bleach, would react with Windex, which contains ammonia, to form poisonous vapors.
- Common household cleaners and disinfectants may not be appropriate for schools and may cause allergic reactions or have other health impacts.
- Schools and districts must have a Safety Data Sheet for each chemical used in the school.

# Guidelines for Cleaning, Disinfecting, and Handling Body Fluids in School – Appendix 8

## *OSPI Infectious Disease Control Guide for School Staff 2014*

- A. Standard Precautions
- B. General Precautions
- C. Hand Washing Procedures
- D. Use of Gloves
- E. Contaminated Needles, Broken Glass, or Other Sharp Items
- F. Cardiopulmonary Resuscitation
- G. General Housekeeping Practices
- H. Disinfectants
- I. Procedures for Cleaning and Disinfection of Hard Surfaces
- J. Blood or Body Fluid Spills
- K. Cleaning up vomit
- L. Athletics
- M. Procedures for Cleaning and Disinfection of Carpets/Rugs
- N. Disposal of Blood-Containing Materials
- O. Procedures for Cleaning and Disinfection of Cleaning Equipment
- P. Procedures for Cleaning and Disinfection of Clothing and Linens soiled with Body Fluids
- Q. Signs and Labels
- R. Cleaning and Disinfecting Musical Mouth Instruments



**THANK YOU!**

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**Resources available:**

**[www.doh.wa.gov/schoolenvironment](http://www.doh.wa.gov/schoolenvironment)**

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