



Safe and Effective Cleaning, Sanitizing and Disinfecting *for*

Early Care and Education

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CHILDREN'S
ENVIRONMENTAL
HEALTH
NETWORK



UCSF School of
Nursing



PEHSU
Pediatric Environmental
Health Specialty Units



UCSF California Childcare Health Program



Why are we talking about cleaning, sanitizing, and disinfecting?

To protect the health of children, staff, and the environment.

Goals:

1. To keep illnesses from spreading;
2. To clean, sanitize, and disinfect safely and effectively;
3. To adopt an integrated approach for managing germs that is healthy for children, staff, and the environment.



Infectious illnesses are caused by certain “germs” (also called “pathogens or microbes”)

- Viruses
- Bacteria
- Fungi
- Parasites



- Infectious illnesses can **spread from one person to another** before their signs and symptoms appear.
- People can pass the germs **without having symptoms of illness** or continue to spread germs once symptoms have gone.



Image used with permission from the National Center on Health, Behavioral Health, and Safety.



We know germs spread easily among young children in group settings...

- By breathing in germs that are in the air
- By touching other people and surfaces with germs
- By eating or drinking something with germs

Studies show that young children in child care settings have more respiratory illness, ear infections, and diarrhea than those cared for at home.¹

¹National Institute of Child Health and Human Development Early Child Care Research Network. Child care and common communicable illnesses: results from the National Institute of Child Health and Human Development Study of Early Child Care. Arch Pediatr Adolesc Med. 2001 Apr;155(4):481-8. doi: 10.1001/archpedi.155.4.481. PMID: 11296076.



Ways to stop the spread of infectious illness include:

- Vaccination
- Personal hygiene (coughing into a sleeve, frequent hand washing, proper diapering and toileting procedures, etc.)
- Staying home when ill and physical distancing
- Wearing face masks
- Safe food handling
- Ventilation and air cleaning
- **Cleaning, sanitizing, and disinfecting surfaces**



What is the difference between cleaning, sanitizing, and disinfecting?

Definitions

Clean: To physically remove dirt, debris, and sticky film by washing, wiping, and rinsing.

Sanitize: to kill germs to a level that reduces the risk of becoming ill from contact with the surface.

Disinfect: A higher level of germ killing. To kill nearly all of the germs on a hard, non-porous surface.



CLEAN

- Why do we clean?



Image used with permission from the California Childcare Health Program.



A clean environment...

- Has fewer germs that cause illness
- Has fewer allergens (dust, food residue, grass, mold)
- Does not attract pests
- Reduces risk of exposure to lead dust, pesticides, and other toxins
- Has better air quality
- Has mental health benefits for children, families, and staff
- Is more attractive for staff, children, families, and visitors



Tools for effective cleaning

- Use microfiber cloths and mops
- Place mats at the door (inside and out) to keep dirt out
- Use a high efficiency particle air (HEPA) vacuum cleaner



Cleaning products that are healthier for people and the environment

- fragrance-free
- free of dyes
- non-antibacterial
- non- aerosols (propellant)
- third-party certification
 - ❖ UL Ecologo
 - ❖ Green Seal
 - ❖ EPA Safer Choice logo



MARKS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

*Remember, children are more vulnerable to exposure to chemicals because they are growing and developing. Their little bodies have a harder time breaking down toxins, and they breathe twice as much per body weight as adults. They have softer, more absorbent skin and smaller airways. They also spend more time on the floor where chemical residues can collect.



What surfaces should be cleaned?

- Toys
- Bedding
- Floors
- Clothing (including hats)
- Cribs, cots, and mats
- Play equipment
- Refrigerators

Always **clean** before
applying a sanitizer or
disinfectant



- Get the job done by choosing the right tool:
- Check out this video from the California Department of Pesticide Regulation:

<https://www.youtube.com/watch?v=xtwdyCE9F14&feature=youtu.be>



Antimicrobial Pesticides

Sanitizers and disinfectants are *antimicrobial pesticides* and are widely used in child care settings.

Antimicrobial pesticides are substances used to destroy or suppress the growth of harmful microorganisms such as bacteria, viruses, or fungi (germs) on inanimate objects and surfaces. (EPA)



SANITIZE

- Why do we sanitize?



Image used with permission from the California Childcare Health Program.



What surfaces should be sanitized?

- Food preparation surfaces and appliances
- Kitchen counter tops
- Eating utensils and dishes
- High chair trays
- Tables used for eating
- Plastic mouthed toys, objects intended for the mouth like pacifiers



DISINFECT

- Why do we disinfect?



What surfaces should be disinfected?

- Door and cabinet handles (high-touch)
- Surfaces that have been soiled with blood or body fluids
- Toileting and diapering areas:
 - ❖ Diaper changing tables and diaper pails
 - ❖ Counter tops in bathrooms
 - ❖ Potty chairs
 - ❖ Handwashing sinks and faucets
 - ❖ Toilets
 - ❖ Bathroom floors



What products should I use for sanitizing and disinfecting?

- Environmental Protection Agency (EPA) registered antimicrobial products
- Check the product label for an EPA registration number

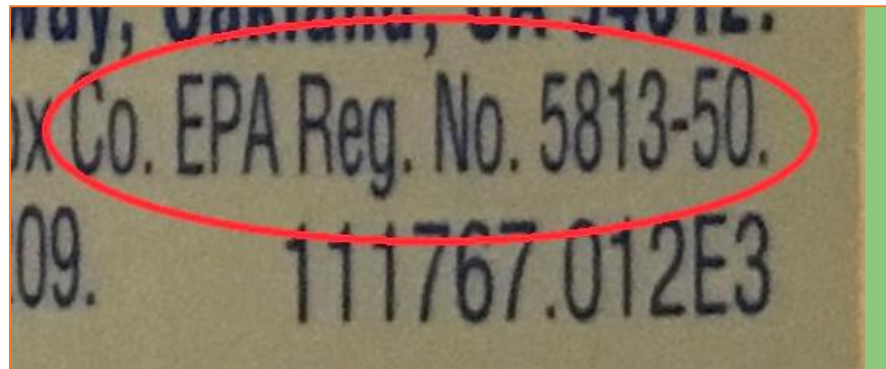
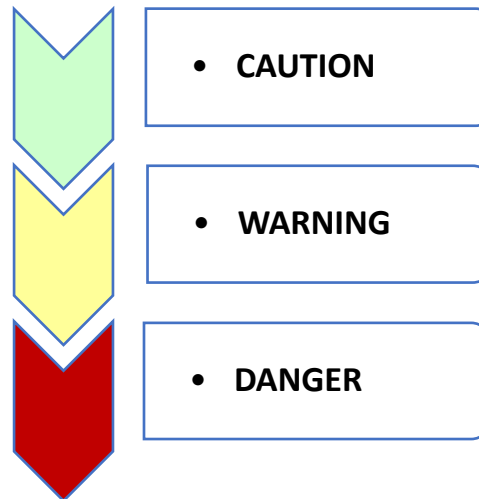


Photo Credit: Bobbie Rose



What products should I use for sanitizing and disinfecting?

- Check the product label for the signal word



The Label is the Law

Always follow the instructions on the label for sanitizing and disinfecting.

- Do you need to mix the product with water?
- How long must the product be on the surface? (dwell time)
- Is it okay to use the product on food surfaces?
- Do you need to rinse the product off?



DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

TO CLEAN: Wipe surface clean with **this product**. Let air dry.
TO SANITIZE: Use to sanitize/deodorize hard, nonporous surfaces. Wet for 30 seconds. Let surface dry. For highly soiled surfaces, clean surface to remain visibly wet for 4 minutes. Let surface dry. For **TO DISINFECT (AND DEODORIZE):** Use to disinfect hard, nonporous mats, crates, cabs and wheels.]

For surfaces that may come in contact with food, a potable **This product** is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the blood stream or otherwise enter normally sterile areas of the body. This product may be used to pre-clean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

For Use as a One-Step Cleaner/Disinfectant: Pre-clean heavily soiled areas. Pull towelette from dispenser (canister) and wipe hard, non-porous environmental surfaces. All surfaces must remain visibly wet for 1 minute. Use a 5 minute contact time for Tuberculosis. Use a 10 minute contact time for fungi. Allow to air dry or rinse with potable water if necessary.

NOTE: All food contact surfaces must be rinsed with potable water. Do not use on glassware, utensils, or dishes.

NOTE: When cleaning floors position wet-floor signs around area to be cleaned. Floors will be slippery when wet or contaminated with foreign materials. Promptly clean up spills and foreign materials.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Not for personal cleansing. **This is not a baby wipe.** Do not flush in toilet. This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the blood stream or otherwise enter normally sterile areas of the body. This product may be used to pre-clean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

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Design for the Environment Logo

If you see the Design for the Environment logo for a sanitizer or disinfectant, the product uses a least-hazardous active ingredient from this list:

Active Ingredients	Year Approved
Citric acid	2009
Hydrogen peroxide	2009
L-lactic acid	2009
Ethanol	2012
Isopropanol	2012
Peroxyacetic acid	2015
Sodium Bisulfate	2015
Chitosan	2019



Ingredients Statement

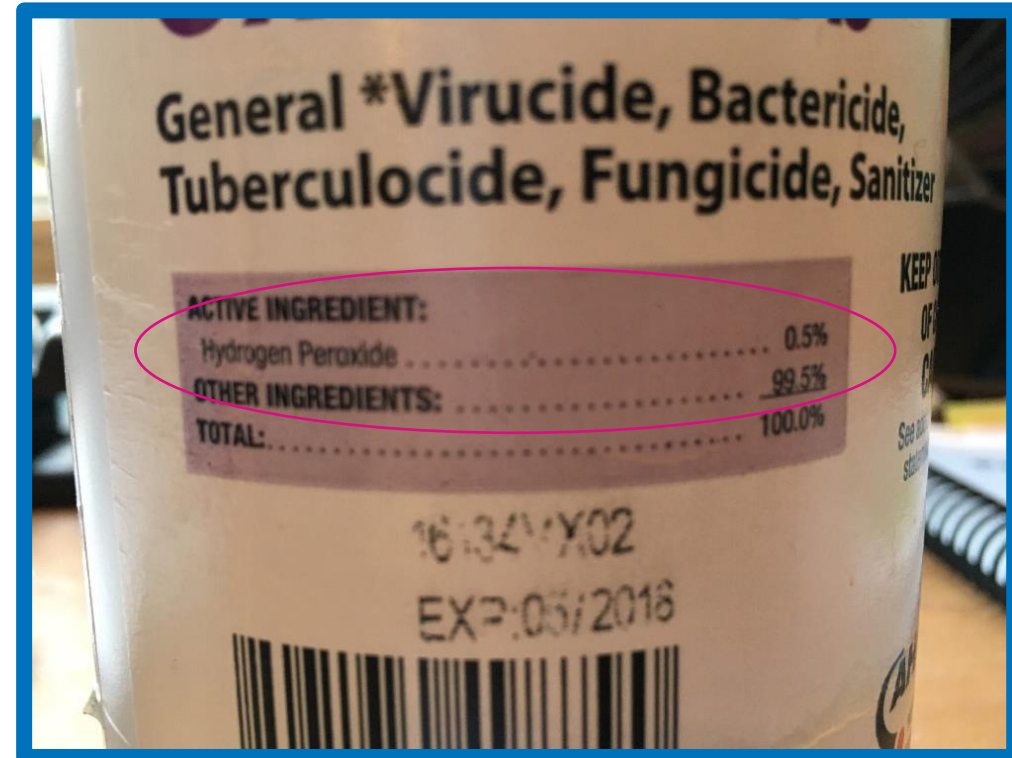


Photo credit: Bobbie Rose



Potential asthmagen active ingredients

- Sodium hypochlorite (bleach)

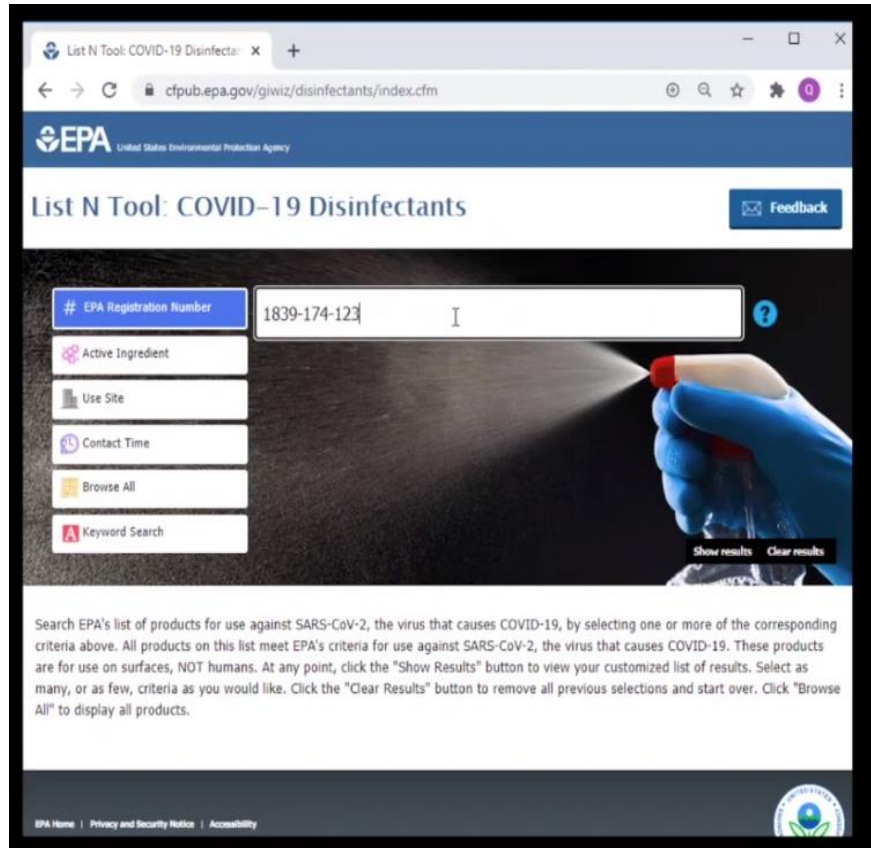
- Mixed daily
- Protection is rarely worn
- Harmful fumes, especially full strength

- Quaternary Ammonium Compounds or “Quats”

- Same respiratory risks as bleach
- Potential reproductive toxicity
- Becoming more common as a “bleach-free” product




WHICH DISINFECTANTS KILL COVID-19?



The screenshot shows a web browser window with the URL cfpub.epa.gov/giwiz/disinfectants/index.cfm. The page is titled "List N Tool: COVID-19 Disinfectants" and features the EPA logo. A search form on the left includes a "# EPA Registration Number" field with the value "1839-174-123", and buttons for "Active Ingredient", "Use Site", "Contact Time", "Browse All", and "Keyword Search". A "Show results" button is visible next to the search input. The background of the form area shows a hand in a blue glove spraying a disinfectant. Below the form, there is a paragraph explaining the tool's purpose: "Search EPA's list of products for use against SARS-CoV-2, the virus that causes COVID-19, by selecting one or more of the corresponding criteria above. All products on this list meet EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19. These products are for use on surfaces, NOT humans. At any point, click the 'Show Results' button to view your customized list of results. Select as many, or as few, criteria as you would like. Click the 'Clear Results' button to remove all previous selections and start over. Click 'Browse All' to display all products." The footer includes links for "EPA Home", "Privacy and Security Notice", and "Accessibility".

<https://www.epa.gov/pesticide-registration/list-n-advanced-search-page-disinfectants-coronavirus-covid-19>




United States Environmental Protection Agency

List N Tool: COVID-19 Disinfectants

More Information
Feedback

EPA Registration Number

Active Ingredient

Use Site

Surface Types

Contact Time

Browse All

Keyword Search

All
1,2-Hexanediol
Ammonium bicarbonate
Ammonium carbonate
Chlorine dioxide
Citric acid
Dodecylbenzenesulfonic acid
Ethanol (Ethyl Alcohol)
Glutaraldehyde
Glycolic acid
Hydrochloric acid
Hydrogen chloride
Hydrogen peroxide
Hypochlorous acid
Iodine

Show results
Clear results

Search by selecting one or more option above. Click the "Show Results" button to view your list of results. Select as many options as you wish. Click the "Clear Results" button to remove all selections and start over. Click "Browse All" to display all products.

Total count: 16

Show 10 entries

PDF
CSV

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Follow the disinfection directions and preparation for the following virus	Contact Time (in minutes)	Formulation Type	Surface Type	Use Site	Why is this product on List N?
34810-35	Citric acid			Feline calicivirus	5	Ready-to-use	Hard Nonporous (HN)	Healthcare; Institutional	Kills a harder-to-kill pathogen than SARS-CoV-2 (COVID-19); Emerging viral pathogen claim
34810-36	Citric acid			Rhinovirus; Feline calicivirus	5	Wipe	Hard Nonporous (HN); Food Contact Post-Rinse Required (FCR)	Healthcare; Institutional; Residential	Kills a harder-to-kill pathogen than SARS-CoV-2 (COVID-19); Emerging viral pathogen claim
									Kills a harder-

<https://cfpub.epa.gov/giwiz/disinfectants/index.cfm>




United States Environmental Protection Agency

List N Tool: COVID-19 Disinfectants

More Information
Feedback

EPA Registration Number

Active Ingredient

Use Site

Surface Types

Contact Time

Browse All

Keyword Search

All
1,2-Hexanediol
Ammonium bicarbonate
Ammonium carbonate
Chlorine dioxide
Citric acid
Dodecylbenzenesulfonic acid
Ethanol (Ethyl Alcohol)
Glutaraldehyde
Glycolic acid
Hydrochloric acid
Hydrogen chloride
Hydrogen peroxide
Hypochlorous acid
Iodine

Show results
Clear results

Search by selecting one or more option above. Click the "Show Results" button to view your list of results. Select as many options as you wish. Click the "Clear Results" button to remove all selections and start over. Click "Browse All" to display all products.

Total count: 82

Show 10 entries

PDF
CSV

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Follow the disinfection directions and preparation for the following virus	Contact Time (in minutes)	Formulation Type	Surface Type	Use Site	Why is this product on List N?
10324-214	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)			SARS-CoV-2	2	Dilutable	Hard Nonporous (HN)	Healthcare; Institutional; Residential	Tested against SARS-CoV-2 (COVID-19); Emerging viral pathogen claim
10324-230	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)			Human coronavirus	1	Dilutable	Hard Nonporous (HN)	Healthcare; Institutional; Residential	Kills a human coronavirus similar SARS-CoV-2 (COVID-19)
1043-119	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)			Murine norovirus	10	Ready-to-use	Hard Nonporous (HN)	Institutional	Kills a harder-to-kill pathogen than SARS-CoV-2 (COVID-19); Emerging viral pathogen claim

<https://cfpub.epa.gov/giwiz/disinfectants/index.cfm>




[Environmental Topics](#)[Laws & Regulations](#)[About EPA](#)

DfE-Certified Disinfectants

The Design for the Environment (DfE) label helps consumers and purchasers find antimicrobial products, like disinfectants and sanitizers, that have been reviewed by EPA and found to meet both the pesticide registration requirements and the [standard for DfE-certified products](#). These products contain ingredients that have been reviewed for both human health and environmental fate. Learn more about the [DfE label for antimicrobial pesticide products](#), including information on how to obtain this certification for your products.

The following products have been qualified to display the DfE logo on the product label. Inclusion on this list does not constitute an endorsement by EPA.



Search DfE-Certified Disinfectants

EPA Reg. Number, Product, or Company

Active Ingredient

Product Type

Home or Business Use

Show only:

☒ Disinfectants for use against the coronavirus SARS-CoV-2 (COVID-19)^[1]

Show 25 entries

Previous

1

Next

<https://www.epa.gov/pesticide-labels/dfe-certified-disinfectants>



K

Caring for Our Children: National Health and Safety Performance Standards

Routine Schedule for Cleaning, Sanitizing, and Disinfecting

Areas	Before Each Use	After Each Use	Daily (At the End of the Day)	Weekly	Monthly	Comments
Food Areas						
• Food preparation surfaces	Clean, Sanitize	Clean, Sanitize				Use a sanitizer safe for food contact
• Eating utensils & dishes		Clean, Sanitize				If washing the dishes and utensils by hand, use a sanitizer safe for food contact as the final step in the process; Use of an automated dishwasher will sanitize
• Tables & highchair trays	Clean, Sanitize	Clean, Sanitize				
• Countertops		Clean	Clean, Sanitize			Use a sanitizer safe for food contact
• Food preparation appliances		Clean	Clean, Sanitize			
• Mixed use tables	Clean, Sanitize					Before serving food
• Refrigerator					Clean	
Child Care Areas						
• Plastic mouthed toys		Clean	Clean, Sanitize			
• Pacifiers		Clean	Clean, Sanitize			Reserve for use by only one child; Use dishwasher or boil for one minute
• Hats			Clean			Clean after each use if head lice present
• Door & cabinet handles			Clean, Disinfect			

Appendix K

Caring for Our Children: National Health and Safety Performance Standards

K

• Floors		Clean			Sweep or vacuum, then damp mop, (consider micro fiber damp mop to pick up most particles)
• Machine washable cloth toys			Clean		Laundry
• Dress-up clothes			Clean		Laundry
• Play activity centers			Clean		
• Drinking Fountains		Clean, Disinfect			
• Computer keyboards		Clean, Sanitize			Use sanitizing wipes, do not use spray
• Phone receivers		Clean			
Toilet & Diapering Areas					
• Changing tables		Clean, Disinfect			Clean with detergent, rinse, disinfect
• Potty chairs		Clean, Disinfect			
• Handwashing sinks & faucets		Clean, Disinfect			
• Countertops		Clean, Disinfect			
• Toilets		Clean, Disinfect			
• Diaper pails		Clean, Disinfect			
• Floors		Clean, Disinfect			Damp mop with a floor cleaner/disinfectant
Sleeping Areas					
• Bed sheets & pillow cases			Clean		Clean before use by another child
• Cribs, cots, & mats			Clean		Clean before use by another child
• Blankets				Clean	

Appendix K

Caring for Our Children

National Health and Safety Performance Standards
Guidelines for Early Care and Education Programs

FOURTH EDITION



American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

APHA PRESS
IN SUPPORT OF AMERICAN PUBLIC HEALTH ASSOCIATION

National Resource Center for Health and Safety in Child Care and Early Education

Online Data Base

<https://nrckids.org/CFOC/Database>

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Always use **caution** with sanitizers and disinfectants

- ✓ Provide ventilation.
- ✓ Hold the bottle at a safe distance away from the nose and mouth when spraying (or spray onto a cloth and apply).
- ✓ Label spray bottle dilutions with product and date.
- ✓ Keep products out of children's reach, in a locked cabinet.
- ✓ Wear personal protective equipment according to the label (gloves, eyewear).
- ✓ Sanitize and disinfect while children are not in area.
- ✓ The surface should be dry by the time the children return to the area.
- ✓ Do not mix products or reuse bottles for different products.



Purchasing Options: Dilution systems



What about bleach?

Commonly used because it is:

- low cost
- effective (if used correctly)
- readily available

*bleach has a short shelf life, it needs to be mixed with water daily.

Use caution because it could:

- irritate the skin and eyes
- trigger asthma
- affect breathing (even if you don't have asthma)
- damage clothing
- be corrosive

**Laundry bleach does not kill germs! Check the label for an EPA registration number.



If using bleach:

- Check to make sure it is germicidal bleach (not laundry bleach). Check for an EPA registration number.
- Always follow directions on the label for diluting and using PPE.
- Label the spray bottle dilution with the date and the product name.
- Mix **daily** (or it won't be effective).
- Mix in well ventilated areas.
- Use a funnel when mixing to decrease the amount of bleach fumes inhaled.
- Always mix bleach into cool water (rather than adding water to bleach). This will minimize fumes.
- Always use a measuring device.
- Sanitize and disinfect surfaces when children are not present.

Never mix ammonia
or vinegar with
bleach!



What about using vinegar or lemon juice to disinfect?



Photo credit: Bobbie Rose



Step-by-Step Cleaning for Child Care Programs

Cleaning means to remove dirt, dust, debris, and sticky substances by washing, wiping, scrubbing, or mopping hard surfaces with soap or detergent and water. Routine cleaning of toys, floors, cribs, cots, mats, play equipment, refrigerators, counters, and shelves is recommended for child care settings.

STEP 1 Gloves may be worn to protect skin. Always follow product label directions for personal protective equipment like gloves.



STEP 2 Spray the cleaning solution onto the surface.



STEP 3 Wipe the surface with a single use paper towel, a microfiber cloth, or a mop.



STEP 4 Rinse according to product label directions.



STEP 5 Allow the surface to air dry, or dry with a fresh paper towel or microfiber cloth.



Important note: Some cleaning products are ready-to-use and some are meant to be diluted with water. Always follow product label directions!



www.cdpr.ca.gov [RCCIPM 27 (4/22/20)]

cchp.ucsf.edu

Step-by-Step Sanitizing for Child Care Programs

Sanitizing means to kill germs at a level that reduces the risk of becoming ill from contact with germs on the surface. Sanitizing is used on food contact surfaces (dishes, utensils, cutting boards, high chair trays, tables), toys that children may place in their mouths, pacifiers, and mixed use tables. Choose an EPA registered sanitizer that is approved for use on food contact surfaces. **DO NOT USE SANITIZERS NEAR CHILDREN!**

STEP 1 Put on gloves.



STEP 2 Pre-clean the surface with soap and water. Surfaces should be clean before applying a disinfectant.



STEP 3 Apply the sanitizer. Spray away from people and provide ventilation.



STEP 4 Leave the surface wet for the appropriate contact (dwell) time stated on the product label. Set a timer to keep track of the time.



STEP 5 Allow the surface to air dry, or dry with a fresh paper towel or microfiber cloth.



Important note: Some sanitizers are ready-to-use and some are meant to be diluted with water. Always follow product label directions!

If sanitizing a food contact surface, you may need to rinse the surface with water after. Check the label. If required, use enough water to remove all of the sanitizer.



www.cdpr.ca.gov

Step-by-Step Disinfecting for Child Care Programs

Disinfecting means to destroy almost all germs that could make a person sick. Disinfecting is for toileting areas and high-touch areas that collect lots of germs (bathroom faucets and counters, diaper changing tables, toilets, sinks used in toileting routines, drinking fountains, doorknobs). Choose an EPA registered disinfectant, and use the product according to the label directions. **DO NOT USE DISINFECTANTS NEAR CHILDREN!**

STEP 1 Put on gloves.



STEP 2 Pre-clean the surface with soap and water. Surfaces should be clean before applying a disinfectant.



STEP 3 Apply the disinfectant. Spray away from people and provide ventilation.



STEP 4 Leave the surface wet for the appropriate contact (dwell) time stated on the product label. Set a timer to keep track of the time.



STEP 5 Allow the surface to air dry, or dry with a fresh paper towel or microfiber cloth.



Important note: Some disinfectants are ready-to-use and some are meant to be diluted with water. Always follow product label directions!



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Thank you!

Questions?

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