



A Green Cleaning Program for Connecticut Facilities

Legislation

Connecticut law requires state agencies to use green cleaners certified by the Green Seal or EcoLogo. Disinfectants, sanitizers, and other antimicrobial products are not currently regulated under this law.

Purchasing

Connecticut's Department of Administrative Services (DAS) has general information and a training video on their website about the "Environmentally Preferable Purchasing (EPP) Program." Connecticut DAS currently has contracts with vendors to provide EPP "Green Seal" or "EcoLogo" certified cleaning products, and disinfectants, disinfecting cleaners, sanitizers and antimicrobial products sanitizers. To access the contract for janitorial and custodial supplies and find lists of suppliers and specific cleaners, disinfectants and sanitizers, please visit the DAS website.²

A Green Cleaning Program

A comprehensive green cleaning program includes:

1. Environmentally preferable (third-party certified) cleaning products
2. Best practices
3. Advanced technology equipment
4. Implementation plan
5. Worker health and safety

1. Environmentally Preferable Cleaning Products

Third-Party Certification

Non-profit organizations that evaluate products using science-based criteria for health and environmental impacts are called third-party certifiers. They identify safer cleaning products and publish lists of these products.

The two certification agencies stipulated under Connecticut requirements are:



Look for the logos:

EcoLogo – a program of Underwriters Laboratory, based in Canada



Green Seal – a program based in the United States and used by many institutional purchasers



Third-Party Certified Cleaning Products

Third-party certified products are available in a growing list of categories including the following:

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| ✓ all-purpose cleaner | ✓ drain cleaner |
| ✓ floor finish and stripper | ✓ glass & window cleaner |
| ✓ hand soaps and hand sanitizers | ✓ heavy-duty cleaner |
| ✓ neutral floor cleaner | ✓ stainless steel cleaner |
| ✓ toilet bowl cleaner | ✓ whiteboard cleaner and markers |

Sanitizers/Disinfectants

Sanitizers and disinfectants are some of the more hazardous products used as part of a cleaning program. While environmentally preferable sanitizers and disinfectants are not currently regulated under Connecticut law, the following types of environmentally preferable sanitizers and disinfectants are available: ³

- **Acid-based sanitizers/disinfectants** – use an acid as the active ingredient. Generally these products do not require rinsing.
- **Hydrogen peroxide-based sanitizers/disinfectants** –combine an acid, such as acetic acid, with hydrogen peroxide to create a higher level of effectiveness.
- **Dry steam vapor technology** - for sanitizing and cleaning surfaces has been shown to be effective and is used by animal labs, major food chains, hospitals and the military.⁴ Heat has long been considered an effective way to kill microbes.

2. Best Practices

A green cleaning program is most successful when best practices are implemented so that everyone on the cleaning team knows what procedures to use and is trained in the proper use of chemicals and equipment. This ensures that there is consistency in the methods used to clean and that the health of workers is protected. Best practices may include the following:

- Written procedures for cleaning, sanitizing and disinfecting
- Training on cleaning products and equipment use

- Instruction and certification on blood-borne pathogens procedures
- Training and preparation on personal protective equipment (PPE)
- Education on chemical right-to-know programs

An important Best Practice involves gaining an understanding of the differences between cleaning, sanitizing and disinfecting. The Centers for Disease Control and Prevention (CDC) defines these activities as follows:

- “**Cleaners** or detergents are products that are used to remove soil, dirt, dust, organic matter, and germs (like bacteria, viruses, and fungi). Cleaners or detergents work by washing the surface to lift dirt and germs off surfaces so they can be rinsed away with water. The same thing happens when you wash your hands with soap and water or when you wash dishes.”
- “**Sanitizers** are used to reduce germs from surfaces but (do) not totally get rid of them. Sanitizers reduce the germs from surfaces to levels that (are) considered safe.”
- “**Disinfectants** are chemical products that destroy or inactivate germs and prevent them from growing. Disinfectants have no effect on dirt, soil, or dust.”


3. Advanced Technology Equipment

In addition to green cleaning products, there are ways to work more safely and improve cleaning by using some useful equipment and approaches.

Microfiber Cloths and Mops

Microfibers are polyester and nylon (polyamide) materials that are many times smaller in diameter than human hair and are used to make cleaning cloths and mop heads. Microfibers come in different grades. The preferred product is the ultra-fine microfiber with a denier measurement of 0.13. A denier is a measurement used to describe the fineness of a fiber.

- Microfiber mops and cloths can be used for the following cleaning tasks:

| | |
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| ✓ Dusting | ✓ Floor finishing |
| ✓ Glass and stainless steel cleaning | ✓ Removing biofilm |
| ✓ Wet cleaning | ✓ Wet mopping |
- The small-size allows for penetration of surface contours, such as cracks that conventional cloths or paper towels are not able to reach. The increased surface area and star shape fibers enable the cloths to absorb up to 7 to 8 times their weight in liquid. Absorption is mechanically increased by the scrubbing. These features also enable the microfiber to pick up grease and oil better than conventional cloths and mops.⁵
- Microfiber is superior at capturing microbes and breaking up biofilms that form where water may collect around sinks. The University of California, Davis Medical Center compared the amount of bacteria picked up by a cotton-loop mop and by a microfiber mop. The cotton-loop mop reduced bacteria on the floors by 30%, whereas the microfiber mop reduced bacteria by 99%.¹
- Cross-contamination in facilities can be reduced by using microfiber mops and cloths. 

Changing mop pads after each room reduces the opportunity for spreading microbes from one room to another. Microfiber cloths and mops are available in different colors so that a color-coding system can be implemented for specific uses.

- Microfiber mop systems are ergonomically designed for ease of use and to reduce injury. A University of Massachusetts Lowell study reported the risk of worker injury was reduced by two factors: 1) reduced weight, and 2) elimination of wringing.
- Microfiber cloths and mops can be washed and reused. A laundering system for microfiber should include:
 - *Washing:* Microfiber should be washed only with other microfiber materials because it can extract material, such as lint, from cotton or other fabrics during the washing and drying process. A mild laundry detergent is recommended. Bleach, fabric softener, or dryer sheets degrade the fabric and should never be used.
 - *Drying:* Microfiber can be line dried safely. If an automatic dryer is used, the setting should always be at **LOW**. The manufacturer's cleaning and maintenance instructions should be followed.

4. Implementation Plan

Involving staff members in transitioning to the new products and procedures will help ensure they understand and fully adopt the green cleaning program. Additionally, building occupants need to be aware of the transition and what changes they may expect. For example, smells and shine may be different with green cleaning. With the reduction of scented products, occupants may not recognize that an area has been cleaned. Floors may not be as shiny because the heavy metals that made the floors shine have been removed.

The following steps can assist in making the transition to a green cleaning program more successful:

- Involve the Environmental Health and Safety Committee in the process, such as reviewing new cleaning products and procedures. Initiate a pilot project and have staff members evaluate the cleaning products for their ease of use and efficacy. Their evaluation should be shared with all the staff members who will be using the products.
- Schedule trainings with the distributor on how to use the new cleaning products and equipment. Training should allow time for questions, demonstrations and hands-on application. It is helpful to have a translator for workers with English as a Second Language when possible.
- Monitor success through the acceptance of the new products by custodians and building occupants.
- Inform the public about the changes that have taken place through a newsletter, emails, or posters.

5. Worker Health and Safety

Training and safe work practices are important in green cleaning programs. Custodians may experience inhalation or skin exposures.

Custodial Job Hazards

Exposures can happen when a custodian breathes in fumes, or when materials spill or splash on skin or into eyes, nose and mouth. Biological exposures can happen during cleaning or waste removal when the custodian encounters unexpected sharp objects that may contain biological materials.

Biological and chemical exposure examples:

- Biohazard wastes and dusts; blood and needles, kitchen and animal wastes
- Chemical cleaning products including “green” products, disinfectants and sanitizers

Custodial work may include physical hazards as well.

Physical hazard examples:

- Lifting, bending, stooping, climbing
- Electric shock
- Trips and falls- uneven, wet and/or slippery floors, ladders
- Abrasions and cuts- waste materials and glass

Hazard control

After hazards are identified, they can be prevented or controlled. Listed in order of preference for protecting workers, hazard control in a green cleaning program may include the following:

- Substitution, elimination or replacing a conventional cleaning product with a less hazardous cleaning product, replacing conventional tools with ergonomically designed equipment
- Engineering - Physically removing contaminants from a worker; increasing ventilation/ airflow
- Administrative - Implementing trainings which may include: safe work practices; proper use of materials and products; blood borne pathogen first aid, ergonomics, fire emergency response, hazard identification and communication, personal protective equipment use
- Personal Protective Equipment (PPE) - the last line of defense includes skin (gloves and protective clothing), respiratory (respirator and/or dust mask) or eye (goggle) protection



- ¹ DAS Procurement - Environmentally Preferred Purchasing: <http://das.ct.gov/cr1.aspx?page=132>
- ² DAS contract for janitorial and custodial supplies: http://www.biznet.ct.gov/SCP_Documents/Results/6556/009_0049.pdf (Green cleaning products) http://www.biznet.ct.gov/SCP_Documents/Results/9462/010_0263.pdf (Disinfectants, disinfecting cleaners, sanitizers and antimicrobial products sanitizers)
- ³ US Food and Drug Administration. Code of Federal Regulations Title 21. Sec. 178.1010 Sanitizing Solutions. Available at: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcr/CFRSearch.cfm?fr=178.1010>
- ⁴ Sexton, J., MS, Tanner, B., PhD, Maxwell, S., BS, Gerba, C., PhD. *Reduction of microbial load on high touch surfaces in hospital rooms by treatment with a portable saturated steam vapor disinfection system*. 2011. Available at: <http://digitalreprints.elsevier.com/issue/40750>.
- ⁵ Microfiber.com, Fabric of the Future, “What is microfiber?” Available at: <http://www.microfiber.com/microfiber.html>.
- ⁶ Environmental Protection Agency, *Using Microfiber Mops in Hospitals*, Environmental Best Practices for Health Care Facilities November 2002. Region 9 Pollution Prevention Program. Available at: <http://www.epa.gov/region9/waste/p2/projects/hospital/mops.pdf>.

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