Cancer & Environment Network of Southwestern Pennsylvania

ADD [ORGANIZATION] LOGO

CREATING HEALTHY SPACES FOR OUR COMMUNITY

A guide to green cleaning and disinfecting practices

This document reflects our [ORGANIZATION]'s commitment to creating healthy environments for CHOOSE AMONG OR CREATE YOUR OWN [people we serve], [people we work with], [our employees], and people who clean our facility. It provides information about toxic chemicals and health, summarizes institutional policies and best practices, and gives guidance for products to purchase to safely clean and disinfect the spaces where people gather.

Overview of the Project

Everyone should have the right to live, work, and play in clean, safe and healthy environments. Yet in Southwestern Pennsylvania, exposures to environmental chemicals are higher than in many places in the country. Also in our region, incidence rates for cancers that have strong links to toxic chemicals (bladder, breast, kidney, lung, leukemia and thyroid) are elevated, sometimes by more than 50% when compared with national rates. [EDIT PREVIOUS SENTENCES TO INCLUDE LOCAL DATA]. The air we breathe, the water we drink, and the products we use are putting us at higher risk of cancer.

At [ORGANIZATION], [MISSION AND INTRODUCTION TO ORGANIZATION]

To ensure that our community is equipped with a safe and healthy space to [PURPOSE OF SPACE], [ORGANIZATION] is implementing safer and environmentally healthy practices through a phased approach. Reducing toxic chemicals used to clean and disinfect our space is one important opportunity. According to the Environmental Protection Agency (EPA), cleaning and disinfecting products can irritate the eyes, skin, and lungs, and they may contain chemicals that contribute to other health problems, including cancers.

Third party certification systems provide tools for ensuring that products meet specific safety and efficacy standards. The primary goal of safer cleaning is to use products and methods that keep our spaces clean and safe without putting our health at risk.

To begin the process of implementing safer cleaning practices, [ORGANIZATION] consulted with the Cancer and Environment Network of Southwestern Pennsylvania (CENSWPA). CENSWPA is a network that brings together people, organizations, and communities to address environmental contributors to cancer. Using third party certification standards, CENSWPA has prepared a list of recommended products and developed a Safer Cleaning and Disinfecting Policy which includes guidance for how and where products are applied, and for storing and disposing of chemicals. A priority for the initiative has been to identify safer products that are not more expensive than the products they are replacing.

Physical spaces where people gather should be free (to the extent possible) of chemical exposures that put occupants at risk of health problems, including cancers. Implementing a safer cleaning and disinfecting policy, with attention to costs, is an opportunity to shift to safer materials, both to reduce health risks and to provide education and inspiration to promote healthy environments at home and in the community.

Cleaning and Disinfecting Basics

Cleaning, disinfecting and sanitizing are three different processes.

- Cleaning *removes* dirt, dust, crumbs and germs (bacteria, molds, mildews, viruses and other microorganisms).
- Disinfecting *destroys or inactivates* germs.
- Sanitizing reduces germs to a safe level and can be done either via cleaning or disinfecting.

Cleaning alone is often sufficient, but some spaces may need disinfecting to reduce transmission of germs, such as bathrooms or kitchens when raw meat is prepared. Disinfecting is critical for infection control in high-risk environments like hospitals, but typically not elsewhere unless there are special circumstances such as an outbreak of a virus and/or in spaces serving particularly vulnerable populations for whom the occurrence of specific diseases, conditions or factors such as age (e.g., the very young and the very old) make them more at risk from infection.

Products used to disinfect–called disinfectants–are more powerful than cleaners, as are "sanitizers" which are distinguished from disinfectants because they are designed for use on the body (e.g., hand sanitizers) rather than on surfaces. Disinfectants and sanitizers are designed to kill pathogens and therefore tend to be more toxic, so they should be used only where and when necessary. From here forward, we will distinguish between cleaners on the one hand and disinfectants on the other. There should be no need for a product called a sanitizer in the context of cleaning or disinfecting a space or surface, though sanitizers for the hands may be made available.

Often products combine cleaning chemicals and disinfectants. These products are not recommended for use as cleaning agents. For [ORGANIZATION], we propose the use of cleaning products in all common areas and disinfectants *only* where specified below in our Safer Cleaning and Disinfecting Policy. We anticipate two uses for disinfectants: 1) for the purposes of minimizing potential transmission of COVID-19 or other viruses; 2) in settings and on surfaces where microorganisms that could pose risks to health may be more prevalent. It is important to remember that disinfecting is effective only if the surface is cleaned first**.**

Health and Environmental Concerns with Cleaning and Disinfecting Products

Traditional products used to clean, sanitize and disinfect are associated with both short and long term **health effects.**

- **Asthma:** Evidence links frequent use of many ordinary cleaning supplies at home or on the job with development of asthma and other respiratory problems. Fumes from some cleaning products may induce asthma in otherwise healthy individuals.
- **Cancers:** Cleaning and disinfecting products can contain or generate carcinogens, such as 1,4-dioxane and formaldehyde. Studies have observed that cleaning workers are at higher risk of lung cancer.
- **Burns, poisonings, and contact or allergic skin reactions:** Some cleaning and disinfecting agents can cause chemical burns and poisonings as well as less severe skin irritations and allergies such as dermatitis. Severe physical reactions signal that consumers should take care anytime they use these products.
- **Birth defects:** Children born to women who held cleaning jobs while pregnant have an elevated risk of birth defects, according to a 2010 study by the New York State Department of Health.
- **Hormone disruption:** Cleaners and disinfectants can contain chemicals that function like hormones and so interrupt the normal functioning of the endocrine system, even at very low doses. This can lead to a range of health problems.

Chemical categories of concern

- **Antibacterial and antimicrobial chemicals:** Triclosan, Triclocarban, quaternary ammonium compounds such as benzalkonium chloride (ADBAC), Didecyldimethylammonium chloride (DDAC) are all toxic and should be avoided.
- **Fragrance:** Fragrance is a generic term used on product labels that emcompasses thousands of potentially toxic chemicals. Products labeled as “fragrance free” are a safer alternative.

In addition to human health concerns, cleaning and disinfecting products pose **environmental risks.**

- Surfactants used in conventional products biodegrade slowly or biodegrade into more toxic, persistent, and bioaccumulative chemicals, threatening aquatic life.
- Ingredients containing phosphorus or nitrogen can contribute to nutrient-loading in water bodies, leading to adverse effects on water quality.

- In addition to affecting indoor air quality, volatile organic compounds (VOC) in cleaning products can contribute to smog formation in outdoor air.

Additionally, the concentrated forms of some commercial cleaning products are classified as hazardous, creating potential handling, storage, and disposal issues for users.

Despite these concerns, labels on products used to clean, sanitize and/or disinfect often do not give consumers enough information about product ingredients to allow people to make informed decisions about which ones are safer and which ones might harm human health or damage environmental resources.

Safer Approaches to Cleaning and Disinfecting

Safer cleaning practices can be implemented in three ways. A transition to safer practices should include changes to all three.

- safer alternatives for **products** used to clean and disinfect;
- safer **methods of application** of products used to clean and disinfect;
- use of products to clean and disinfect in the appropriate **locations**.

Safer Products

Using certified safer cleaning and disinfecting products can help reduce these human health and environmental concerns. Factors taken into account by third-party certifications, such as UL EcoLogo, EPA Safer Choice, and Green Seal include:

- potential human health and safety impacts of the chemical ingredients;
- the ability of the chemicals to leach into the environment and impact ecosystems, waterways, and wildlife;
- the product's packaging and its disposal.

Also included in the certification process is an assessment of efficacy, ensuring that green-certified products used to clean and disinfect are both safe and effective.

Toxic chemicals are also found in other products used in the cleaning process, such as trash bags and paper towels. Certifications for lower human health and environmental risks help with choices among these products as well.

Safer Application

Many cleaning and disinfecting products come in the form of a spray that is applied to a surface. This mechanism allows the chemicals in the product to aerolosize and can be inhaled by people doing the cleaning or other occupants of the space. Breathing is the primary route of exposure

to hazardous chemicals, so spraying chemicals should be avoided wherever possible to minimize risks. Instead of spraying, products should be applied directly to a sponge, rag, or paper towel.

Another important step is to be sure that labels are followed. For example, if the product requires dilution, the dilution ratio should be followed precisely, and the product should be left on the surface for as long as recommended. Disinfectants in particular will not work unless they are allowed to "dwell" as recommended.

Safer Locations

Cleaning products should be used in all common spaces. Disinfectants should only be used in areas where transmission of viruses or exposure to microorganisms is more likely. In a community space, areas that need to be disinfected include: high-touch locations (for example, faucets, toilet flush handles and toilet seats in the bathroom); the kitchen when raw meat is being handled; any diaper changing station.

Where a disinfectant is used, the surface must be cleaned first–followed by disinfecting.

A note on COVID-19.

The best practices for keeping spaces healthy are also a foundation for minimizing risk of COVID-19; disinfecting high-touch locations, for example, will reduce risk of any transmissible virus. Having hand sanitizers available where vulnerable populations gather makes sense during surges of COVID or flu, especially where there is no immediate access to soap and water. It is important to select hand sanitizers that are effective yet less toxic.

[ORGANIZATION] Safer Cleaning and Disinfecting Policy

Effective date: [DATE]

This policy applies to all procedures for cleaning and disinfecting; and to purchases of products, equipment and services that occur inside and on the building site and grounds for [ORGANIZATION].

The primary goal of this policy is to enable [ORGANIZATION] to take an important step in ensuring that our space is healthy for people, including [POPULATION SERVED], as well as staff, guests, and people who clean the building.

The safer cleaning policy covers the three methods of safer practices outlined above:

- Safer products for cleaning and disinfecting
- Safer methods for application of products
- Use of cleaning and disinfecting products in the appropriate locations

The policy also provides guidance for safe storage and disposal of cleaning and disinfecting products. In addition, it addresses the paper and other products used during the cleaning process, as well as hand sanitizers which will be available in the space as needed.

Guidelines for Selecting Safer Cleaning and Disinfecting Products

Cleaning Products

The list of cleaning products approved for use by [ORGANIZATION] is in Appendix A. These products have been certified to meet strict standards. For information on the certification standards, see Appendix B.

Disinfectants

The list of disinfectant products approved for use by [ORGANIZATION] is in Appendix A. For information on the certification considerations, see Appendix B.

Hand sanitizers, and consumables and paper products used during cleaning

Appendixes A and B also include recommended products and certification standards for these categories of products.

For all these products, if approved products are not available, products that meet the relevant certification standards can be substituted.

Guidelines for Safer Methods of Application of Cleaning and Disinfecting Products

When possible, spraying products into the air should be avoided. Products should be blotted onto a cloth or poured directly into a cleaning tool when possible to avoid aerosolizing chemicals into the space. All instructions on product labels should be followed precisely (for example, diluting as prescribed; leaving the product on the surface for as long as recommended). To ensure that concentrated disinfectants are used and diluted to the proper ratio of product and water, a portion control device should be used and a practice implemented to ensure that the correct dilution ratio is achieved. Inexpensive test strips (under ten cents each) are available for many disinfectants.

Guidelines for Use of Cleaning and Disinfecting Products in Appropriate Locations

Approved cleaning products should be used in all areas of the [ORGANIZATION] space for regular cleaning.

In addition, approved disinfecting products should be used in the kitchen when raw meat is handled [REMOVE IF NOT APPLICABLE], at the diaper changing station, and on high touch areas, including door knobs and door plates throughout the space, as well as faucets, toilet flushing handles, toilet seats and other high touch areas of bathrooms. These areas should be cleaned first, followed by disinfecting.

Guidelines for Storage and Disposal of Chemicals

The following steps should be taken to ensure that storage and disposal of chemicals do not pose a risk to cleaning staff or building occupants.

Safe Storage

- Store cleaning and disinfecting products in a locked room or cabinet out of reach of children and with restricted access to staff.
- Inspect and test all emergency first aid equipment annually.
- Ensure that all Material Safety Data Sheets and chemical labels are up-to-date and easy to access.
- A maximum of ten (10) gallons of flammable liquids may be stored outside a flammable storage cabinet. This includes alcohol-based hand sanitizers.

Safe Disposal

- *Unused* cleaning and disinfecting products can be diluted and flushed down the toilet or drain.
- Hand sanitizer is flammable and should be treated as hazardous waste, with disposal at a city-organized hazardous waste day.
- Bottles should be recycled when possible. See these guidelines for Pittsburgh: https://pittsburghpa.gov/dpw/residential-recycling

Training

- Annual training on safe chemical products, application, locations, storage and disposal will be conducted for staff and volunteers.

Roles and Responsibilities

The responsible party for this policy is the [ORGANIZATION] [TITLE]. The responsible party will ensure that this policy is executed and that contracted cleaning vendor(s) are aware of and fully trained on the procedures outlined in this policy. If at any time updates are required to this policy, the responsible party will ensure that the appropriate individuals are informed of the updates. Many of the Resources listed in Appendix D will be updated regularly and can assist staff with updating the [ORGANIZATION] Safer Cleaning and Disinfecting Policy.

Appendix A: Recommended Product Lists

Cleaning Products and Soaps

Recommended Products	Third Party Certification	Product Name
Bathroom Cleaner	EPA Safer Choice	Toilet Bowl Cleaner, Free & Clear
Bathroom Cleaner	EPA Safer Choice	CLR PRO® RESTROOM CLEANER
Bathroom & Bowl Cleaner	EPA Safer Choice	Seventh Generation Zero Plastic TOILET BOWL FOAMING POWDER
Bathroom Cleaner	Green Seal	Green Select® Bathroom Cleaner
Dish Soap	EPA Safer Choice	ECOS PRO Dishmate Manual Dish Liquid, Free & Clear
Dish Soap	EPA Safer Choice	ECOS Dishmate Dish Soap, Free & Clear
Dish Soap	EPA Safer Choice	Dish Liquid - Free and Clear
Floor Cleaner	EPA Safer Choice	Green Earth Daily Floor Cleaner
Floor Cleaner	EPA Safer Choice	Seventh Generation 44814 Professional Free & Clear Neutral Floor Cleaner Concentrate - 2/Case

Hand Soap	EPA Safer Choice	Seventh Generation Hand Wash Free & Clean
Hand Soap	EPA Safer Choice & Green Seal	ECOS® Hand Soap Free & Clear
Windows/Glass Cleaner	EPA Safer Choice	ECOS Window Cleaner, Vinegar Earth Friendly Products
Windows/Glass Cleaner	EPA Safer Choice	Seventh Generation Glass Cleaner, Free & Clear

Disinfectants

Products recommended as of the writing of this document are below. This link provides additional recommendations and will be updated periodically.

*Cleaner/Disinfectant	EPA DfE	Lysol Brand Kills 99.9% of Viruses & Bacteria "Power & Free" Multi-Purpose Cleaner w/ Hydrogen Peroxide
*Cleaner/Disinfectant	EPA DfE	Quick Defense Peroxide RTU Disinfectant
*Cleaner/Disinfectant	Green Seal	Annihilyte Multi-Purpose Annihilare/Annihilyte Category: Industrial & Institutional Cleaning

		Products Standard: GS-53
*Cleaner/Disinfectant	Green Seal	Force of Nature Multi-Purpose Cleaner & Disinfectant Company: Force of Nature Category: Household Cleaning Products Standard: GS-52, GS-8
Disinfectants	EPA DfE	PURELL® Healthcare Surface Disinfectant

*These products should not be used for cleaning, because they contain disinfectants that are not necessary for all spaces. They can be used in spaces where disinfectants are needed.

Hand Sanitizers

Hand sanitizers approved for use at [ORGANIZATION] are those that meet the EcoLogo standard (see Appendix B). These include:

Purell Advanced Hand Sanitizer Green Certified Gel

This link contains additional useful information about hand sanitizers.

Consumables + Paper Products Used During Cleaning

Some consumables and paper products used during cleaning also contain toxic chemicals, so we have included a list of recommended products here with that in mind.

Bathroom Tissue	Green Seal	Dalia HD250 Jumbo Roll Tissue
Bathroom Tissue	Green Seal	Compact White Coreless High Capacity 2 Ply Bathroom Tissue
Paper Towels	Green Seal	Boardwalk Green Folded Towel https://certified.greenseal.org/product/boardwalk-green-fol

		ded-towel-essendant-boardwalk
Paper Towels	Green Seal	Renown Select Hardwound Roll Towel, Natural
Trash Bags	EcoLogo	Evolution Trash Bag Tall Kitchen DRAWSTRING
Trash Bags	EcoLogo	Evolution Trash Bags: White Rhino Super Tough Trash Bag

Note: If approved products are not available, products that meet the relevant certification standards can be substituted (see Appendix B).

APPENDIX B: Third Party Certification Standards

Cleaning Products

Cleaning products purchased must meet one or more of the following standards.

- Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes;
- UL EcoLogo 2792 (formerly CCD 110), for cleaning and degreasing compounds;
- UL EcoLogo 2759 (formerly CCD 146), for hard-surface cleaners;
- UL EcoLogo 2795 (formerly CCD 148), for carpet and upholstery care;
- Green Seal GS-40, for industrial and institutional floor care products;
- UL EcoLogo 2777 (formerly CCD 147) , for hard-floor care;
- EPA Safer Choice Standard;

Disinfectants

- Disinfectants should be on EPA's List N: Disinfectants for Use Against SARS-CoV-2 and formulated with the active ingredients recommended by EPA's Design for the Environment Logo for Antimicrobial Pesticide Products. (As of May 2020, the active ingredient list includes: Hydrogen Peroxide, Citric Acid, L-lactic Acid, Ethanol, Isopropanol, Peroxyacetic acid, and Sodium Bisulfate). Appendix A is a subset of List N recommended by organizations with expertise on hazards of toxic chemicals.

Hand Soaps

- no antimicrobial agents (other than as a preservative) except where required by health codes and other regulations (e.g., food service and health care requirements);
- Green Seal GS-41, for industrial and institutional hand cleaners;
- UL EcoLogo 2784 (formerly CCD 104), for hand cleaners and hand soaps;
- EPA Safer Choice Standard.

Hand Sanitizers

- UL EcoLogo 2783 (formerly CCD 170)

Consumables + Paper Products Used During Cleaning

Disposable janitorial paper products and trash bags must meet the minimum requirements of one or more of the following programs:

- EPA comprehensive procurement guidelines, for janitorial paper;
- Green Seal GS-01, for tissue paper, paper towels and napkins;

- UL EcoLogo 2771 Sanitary Paper Products, for toilet tissue and hand towels
- Janitorial paper products derived from rapidly renewable resources or made from tree-free fibers;
- FSC certification for fiber procurement;
- EPA comprehensive procurement guidelines, for plastic trash can liners
- UL EcoLogo Standard 126, Standard for Sustainability for Plastic Film Products

Appendix C: Companion Materials

A binder will be available to help implement the Policy. The binder should include:

- A list of cleaners and disinfectant products that are approved for use (these are in Appendix A)
- Product use chart
    - Photos of locations
        - what product(s) should be used, for what purpose (cleaning or cleaning followed by disinfecting).
        - How should it be applied?
        - How frequently should the space be cleaned?
    - Copies of safety data sheets for each product
- Responsibilities of Custodial Staff and Non-Custodial Staff
- Cleaning log
    - What spaces have been cleaned, when and by whom?
- First aid instructions
- Copies of emergency contact info for staff

Appendix D: Additional Resources

Beyond Pesticides

https://www.beyondpesticides.org

https://www.beyondpesticides.org/resources/antibacterials/disinfectants-and-sanitizers

Environmental Protection Agency

https://www.epa.gov/saferchoice

https://www.epa.gov/greenerproducts/identifying-greener-cleaning-products

https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals

Green Seal Certification

https://greenseal.org/programs/healthy-green-buildings/

COVID-specific guidelines

EcoLogo Certification

https://www.ul.com/resources/ecologo-certification-program

Toxics Use Reduction Institute

https://www.turi.org/Our_Work/Cleaning_Laboratory

Silent Spring Institute

https://silentspring.org/our-science/how-do-chemical-exposures-affect-our-health

Women's Voices for the Earth

https://www.womensvoices.org/safe-cleaning-products/safe-cleaning-fact-sheets/cleaning-products-health/