



Environmentally Preferable Purchasing Guide

Greening Your Purchase of Cleaning Products

Cleaning products are necessary for killing germs and keeping the home and workplace in sanitary condition. But, cleaning products present several human health and environmental concerns. They may contain chemicals associated with eye, skin, or respiratory irritation, and other human health issues. Additionally, the concentrated forms of many cleaning products are classified as hazardous waste, creating potential handling, storage, and disposal issues for users. Reducing these human health and environmental effects is an important incentive for implementing an EPP cleaning products program.

Why Green Your Cleaning Products?

Environmental and Health Concerns

- Millions of tons of cleaning products are washed down drains every month. These products often contain toxic chemicals that can find their way into drinking water supplies or streams and lakes.
- The chemicals can be toxic to aquatic plants and animals. Some of these chemicals (e.g., phosphates) can cause nutrient-loading in water bodies, leading to adverse effects on water quality, flora, and fauna in the area.
- General-purpose cleaning products have been shown to contribute approximately 8 percent of total nonvehicular volatile organic compound (VOC) emissions in California, which contribute to smog formation, retard plant growth, and can cause respiratory distress in some people.
- Most people spend more than 90 percent of their time indoors; thus, exposure to indoor environmental hazards has led to many health concerns.

reported to Poison Centers nationally.

- The cleaning industry employs two to three million janitors; but due to very high turn-over, even greater numbers of people are affected.

Benefits of Buying Green

- Choosing less hazardous products can minimize harmful impacts to custodial workers, improve indoor air quality, and reduce water pollution.
- Buying cleaners in concentrates and returnable packaging reduces packaging waste.
- Buying less hazardous cleaners may reduce hazardous waste costs when it comes time to properly dispose of any leftover cleaners.
- Switching from traditional cleaning products to biodegradable, low-toxicity, or otherwise less harmful products can dramatically reduce the environmental impact of routine cleaning activities without sacrificing cleaning effectiveness.
- Some studies have suggested that improving indoor air quality in work environments can improve overall productivity by more than 8 percent.

(Adapted from Green Seal's *Choose Green* Report)

What's Inside:

- What Can You Do?
- Success Stories
- Contacts & Resources
- EPA's Purchasing Tool Suite

Produced by EPA's Environmentally Preferable Purchasing (EPP) Program, this is one in a series of purchasing guides aimed at helping procurement officials identify and purchase "greener" products and services. Check out all our EPP tools and resources at www.epa.gov/oppt/epp.

Magnitude of Potential Exposure

- Cleaning products are the chemicals most frequently involved in poisonings



It's Policy

The federal government has undertaken various initiatives to mandate the consideration of the environment in purchasing decisions. A growing number of state and local governments also have implemented green purchasing policies or programs. In 1995, EPA established the Environmentally Preferable Purchasing (EPP) Program to encourage federal employees to consider a broad range of environmental factors, such as reduced toxicity and lower VOC content, in their purchasing decisions. In 1997, the Federal Acquisition Regulation (FAR), which provides broad purchasing guidance to federal employees, was amended to support federal procurement of "green" products and services. In addition, executive agencies, under Executive Order 13101, have been directed to identify and give preference to the purchase of products and services that pose fewer environmental burdens.

Five Guiding Principles

To help government purchasers incorporate environmental considerations into purchasing decisions, EPA developed five guiding principles. These five principles are:

1. Include environmental considerations as part of the normal purchasing process.
2. Emphasize pollution prevention early in the purchasing process.
3. Examine multiple environmental attributes throughout a product's or service's life cycle.
4. Compare relative environmental impacts when selecting products and services.
5. Collect and base purchasing decisions on accurate and meaningful information about environmental performance.

For more information, go to the five guiding principles on EPA's EPP Web site at www.epa.gov/oppt/epp/fivegp.htm.

What Can You Do?

It can be challenging to evaluate the environmental attributes of cleaners. Some companies have changed their marketing schemes to use words such as "environmentally friendly" or "natural" on their product labels, even when their products continue to contain hazardous chemicals. So how can you make an informed purchasing decision?

Try this list of some of the attributes considered, in addition to price and performance, by some organizations when selecting environmentally preferable cleaning products. Many organizations incorporate some of these attributes into their cleaning service contract specifications. The list is arranged into simple lifecycle categories.

- Irritating artificial dyes and/or fragrances.
- Substances classified as known or likely human carcinogens by authorities such as the National Toxicology Program, the U.S. EPA, or the International Agency for Research on Cancer.
- Ozone-depleting compounds.
- Chemicals listed under the State of California's Safe Drinking Water and Toxic Enforcement Act (Proposition 65) as causing reproductive toxicity.
- Regulated hazardous materials (e.g. products classified as hazardous waste; products that trigger OSHA hazard communication requirements).

Natural Resource Use

- Avoidance of non-renewable resources, such as petroleum- or hydrocarbon-based materials.*
- Use of renewable resources, such as bio-based citrus, seed, vegetable, and pine oils.

Manufacturing/Product Content

Some organizations have applied these criteria to substances used in the manufacturing process as well as the final product.

- Company's environmental policy and reputation.
- Absence of potentially harmful chemicals, such as:

Product Packaging

- Concentrated formulas*
- Reduced packaging
- Packaging designed to reduce exposure to product
- Recyclable packaging
- Recycled-content packaging
- Refillable bottles
- Pump sprays rather than aerosols*
- Products shipped in bulk

Availability



As information about the risks posed by some cleaning products has emerged, consumers have begun to explore opportunities to use less harmful products. As a result, the industry has begun to produce new products that are less harmful to human health and the environment. These environmentally preferable cleaners are gradually becoming more widely available from vendors, distributors, and catalogs (see the “Contacts and Resources” section).

Performance

Many of the users of these new products report that performance is equal to, or even superior to, conventional products. However, when soliciting vendor proposals, performance issues should be addressed directly in the speci-

cations for cleaning products. Since improper use can affect the performance of cleaners, vendors should be required to provide training to maintenance staff on the proper use of their products.

Price



Products that appear to be priced higher than a traditional cleaner may actually be less expensive to use when the full cost of using standard products is considered. Such costs include worker training, environmental and workplace regulations, and left-over product disposal. If you buy cleaners with less-hazardous components, you can reduce these costs. Furthermore, concentrated products that have a higher purchase price may actually be cheaper to use when properly diluted. To make accurate price comparisons, assess the cost-per-application, not the cost-per-volume.

Product Use

- Acute toxicity—usually defined in terms of a single dose or short-term air concentration that can cause lethality (LD_{50}/LC_{50}).
- Effects on air quality (VOC content).
- Chronic toxicity (includes a wide variety of adverse effects that can result from long-term exposure to a substance).
- Corrosiveness (pH).
- Flashpoint (a higher flashpoint indicates a lower potential for flammability/combustibility; liquids with a flashpoint below 100 degrees F are considered flammable).
- Likelihood of exposure to concentrate.
- Skin and eye irritation potential.
- Effective with cold water instead of hot, which will help reduce energy use.

Product Disposal

- Aquatic toxicity.
- Biodegradability.
- Hazardous waste classification (is the product considered a RCRA hazardous waste by one or more criteria, e.g. acute toxicity, corrosivity, etc.?).

*More Information...

- The consumption of petroleum, a non-renewable resource, to be used for energy during manufacture and/or as a product component, can serve as an indicator of acid rain, climate change potential, air pollution, and associated human health risks, as well as risks to endangered species and fragile ecosystems.
- Choose pump-spray containers instead of aerosols. Pressurized aerosol products are usually high in VOC content. Aerosol propellants often produce a finer mist, so the product can more easily be inhaled by workers. Aerosol containers may be hazardous to workers if punctured. Also, any hazardous product left in an aerosol container makes the entire container a regulated hazardous waste, which means more expensive disposal.
- In general, concentrated formulas are preferred because they reduce the amount of packaging and the amount of energy used in shipping the product. However, concentrated products can present hazard issues that must be addressed to ensure worker safety and proper disposal.
- Disinfectant products serve an important function in certain areas. However, many of these products can present health or ecological concerns. Disinfectant products should be limited to applications where it is important to control infectious agents. Many types of general purpose cleaning do not require the use of disinfectants.

Success Stories

The City of Santa Monica, California

Santa Monica's green cleaning product purchases have eliminated the purchase of 3,200 pounds of hazardous materials annually. This translates into a saving of approximately 5 percent of annual spending on cleaning products when compared with the traditional products it was purchasing. The city's Web site includes a copy of Santa Monica's custodial products bid specifications, which many other purchasers have used as a basis for their own specifications. Go to Santa Monica's Web site at <<http://pen.ci.santa-monica.ca.us/environment/policy/purchasing/bidspecs.htm>>, or visit the EPP Program's case study on the city's success at <www.epa.gov/oppt/epp/pdfs/santa.pdf>.

Perrigo

Perrigo, a mid-sized company and the leading manufacturer of generic and "store brand" pharmaceuticals and personal care products, is saving more than \$35,000 annually after switching to green cleaning products. While part of the reported savings can be attributed to the fact that some green cleaning products are less expensive than the traditional ones, most of the reported and anticipated savings appear to result from new bulk purchasing opportunities, fewer workers compensation claims, and rising employee productivity. For more information, visit the EPP Program's case study, *Private Sector Pioneers*, at <www.epa.gov/oppt/epp/pdfs/privsect.pdf>.

The National Park Service

The National Park Service (NPS) used to buy more than 130 different cleaning products but has switched to a family of products it considers environmentally preferable. It now buys only 15 products. Purchasing a smaller number of products allows NPS to buy products in greater volumes and at a bigger discount than purchasing small quantities of a large number of different products.

Department of Interior Headquarters

The Department of the Interior (DOI) initiated a contract for custodial services using environmentally preferable cleaning products and supplies. DOI identified environmental attributes for the products that had to be met or exceeded in order to be considered. DOI also has used the Green Seal Environmental Standard for Industrial

Institutional Cleaners, GS-37. For more information, visit the Web site at <www.epa.gov/oppt/epp/ppg/case/doicase.htm>

City of Richmond, California

Janitorial contractors in Richmond, California, are expecting the switch to green cleaning products to reduce worker compensation claims. According to a study conducted by a consultant to the city, a cleaning chemical accident requiring medical treatment costs an average of \$615 per incident, excluding long-term disability costs. The study also reveals that one out of every 100 janitors has reported work-related injuries attributable to the cleaning products they use. The project team believes the actual number of incidents, however, is six injuries per 100 janitors, because many people are reluctant to report injuries, fearing disciplinary measures.

By switching to less toxic cleaning products, contractors in Richmond expect to reduce the number of incidents, their severity, and the cost per incident. The contractors anticipate that worker compensation insurance costs might decrease because the insurance premiums are based on the number and severity of claims. In addition, if the contractors make all the potential changes available to them, their use of hazardous materials will drop by 3,000 pounds per year. Finally, several purchasers have noted that the lower VOC content and reduced toxicity of green cleaning products help improve overall indoor air quality. This affects all employees, not just the janitorial staff, and could boost employee productivity, cut absenteeism, and promote the general well being of building occupants.

And more...

Other green cleaning product purchasers such as Ben & Jerry's; King County, Washington; the Commonwealth of Massachusetts; and the states of Minnesota and Vermont also have reduced environmental impacts by purchasing cleaning products each has determined to be environmentally preferable.

As these green pioneers have continued to demonstrate, purchasing cleaning products with reduced environmental impacts has significant advantages. From improving environmental performance to saving money, green cleaning products can outshine the competition.

Contacts and Resources

Commonwealth of Massachusetts

Contains extensive details on the process Massachusetts used to identify environmentally preferable cleaning products. It includes the actual specifications, Massachusetts' environmental ratings for specific products, and product pricing information provided by the vendors. The Web site address is www.state.ma.us/osd/enviro/products/cleaning.htm.

State of Minnesota

Provides comprehensive information on the process Minnesota used to evaluate the environmental preferability of cleaning products. Also includes links to and information about other related resources. For more information, go to www.moea.state.mn.us/lc/purchasing/cleaners.cfm.

King County, Washington

Includes excerpts from the county's 1996 environmentally preferable cleaning specifications. The site also includes links to other useful cleaning product resources. For more information, visit www.metrokc.gov/procure/green/.

Canada's Environmental Choice Program

Includes a copy of the specifications for earning Environment Canada's EcoLogo for industrial and commercial cleaners. The Web site address is www.environmentalchoice.com/products.cfm?cat=5.

Janitorial Products Pollution Prevention Project

Contains a series of helpful tools, including information on the risks associated with more than 100 cleaning product ingredients, a list of high-risk products, and risk evaluation forms. The site also includes a series of fact sheets highlighting the

pollution prevention opportunities associated with cleaning products, including recommendations about which chemicals to avoid. It also contains information on a 4-hour workshop entitled, "How to Select and Use Safe Janitorial Products."

Find information on the project at www.westp2net.org/Janitorial/jp4.htm.

U.S. General Services Administration Cleaning Products Catalog

Provides environmental attribute information on cleaning products available through the U.S. General Services Administration, one of the federal government's primary suppliers. For more information, go to <http://regions.fss.gsa.gov/r07/7fx/schedules/index.cfm>.

Green Seal

Contains Green Seal's environmental preferability standards for household cleaning products, as well as industrial and institutional cleaners. The Web site also includes the *Choose Green Report on Industrial and Institutional Cleaners*, which recommends 38 products from 21 companies that meet Green Seal standards. Visit www.greenseal.org for more information.

Washington Toxics Coalition

An organization dedicated to protecting public health and the environment by promoting alternatives to toxic chemicals. This Web site provides information about pollution prevention and includes publications, topics, and upcoming events. Visit www.watoxics.org for more information.

For additional information on environmentally preferable cleaning products, contact Jim Darr of EPA at 202 564-8841, or by e-mail at darr.james@epa.gov.

EPA's Purchasing Tool Suite

EPA's EPP Program has developed the following Web-based tools to help purchasers consider the environment, along with price and performance, when buying a product or service.

Cleaning Product Attributes Ranking Tool — An interactive tool that helps the user choose a greener cleaning product by prioritizing environmental attributes (e.g., skin irritation potential, VOCs, recycled packaging).

www.epa.gov/oppt/epp/cleaners/select/

Database of Environmental Information for Products and Services — A searchable database of product-specific information (e.g., environmental standards and guidelines or contract language) developed by government programs, both domestic and foreign, as well as third parties.

www.epa.gov/oppt/epp/database.htm

Promising Practices Guide for Greener Contracts — A series of short case studies highlighting successful strategies for incorporating environmental factors into a variety of product and service contracts.

www.epa.gov/oppt/epp/ppg/

General EPP Training Tool — Covers basic EPP principles and mandates, along with some more in-depth applications of EPP, in an entertaining and multimedia format.

www.epa.gov/oppt/epp/gentt/

Tips for Buying Green with the Government Credit Card — Tips to help government credit card holders make greener choices when buying products, such as cleaning products.

www.epa.gov/oppt/epp/creditcard.htm



United States
Environmental Protection Agency
(7409M)
Washington, DC 20460

Official Business
Penalty for Private Use \$300

**Greening Your
Purchase of
Cleaning Products**