

CLEANING PRODUCTS

A Two-Minute Briefing on Key Business Environmental Issues

The Big Picture

Commercial and industrial cleaning products can contain a brew of toxic chemicals and can cause injury to those who use them, as well as for anyone else in the products' breathing space. Janitors and building maintenance workers cite safety as their number-one job concern. Products safer for human users also are safer for the environment and can replace more-toxic products.

Context

Six out of every 100 janitors have lost-work time injuries each year, including eye injuries or irritations, skin irritations or burns, and respiratory problems resulting from the inhalation of chemical fumes. The most dangerous cleaning products cause cancer, contribute to global warming, or are ozone-depleting substances. Many commonly used products can cause blindness, burn skin, interfere with the endocrine system of humans and animals, and, through the skin or inhalation, damage the kidneys, liver, developing fetuses, and the nervous system. Other products may irritate the skin and eyes, degrade indoor air quality, and add zinc or hydrocarbon to the building's sewage discharge. Most businesses can reduce risk of injury from chemicals by replacing the most dangerous cleaning products with safer ones, by reducing the total number of chemicals used, and by following safety measures. Environmental benefits are equally important, but for many businesses, they are a secondary reason for using safer chemicals.

Getting Down to Business

Commitment from management is essential in making the change from conventional cleaning products to greener products. Businesses must also educate users with on-site demonstrations and follow-up education.

- **Polaris Building Maintenance** in California previously used more than 30 cleaning products, mainly petroleum-based. After working with its vendors to reformulate the products, Polaris now uses 10 water-based cleaning products. Polaris retrained its entire janitorial crew to work with the reformulated products. Initially not all employees wanted to change the products they used. However, company management strongly supported the changeover, and in time the entire janitorial crew adopted the new products.

- **Santa Clara County** (Calif.) worked with 47 maintenance contract organizations employing 6,800 janitors and custodians. Each year these workers use chemical products that contained 400,000 pounds of hazardous materials. The project found that by changing to safer chemicals, using fewer products, and utilizing other techniques, the amount of hazardous materials could be reduced by 131,000 pounds per year.

Key Players

- **Federal and local governments** are initiating pilot projects to test and demonstrate the effectiveness of environmental cleaning products. Results of these pilot projects can help businesses determine which products to choose and how to implement the changeover.

- **Product vendors** often can reformulate current products to reduce or eliminate hazard chemicals. Cleaning products must meet standards in order to label themselves "environmental." In the United States, that includes meeting the requirements for labeling established by Green Seal; accepted products can display the Green Seal label.

The Upside

- **Worker safety** can be greatly improved by using less-toxic cleaning products.
- **Less harmful impact on the environment.** Traditional cleaning products contribute to global warming, ozone depletion, and can add dangerous chemicals to building sewage discharges.

Reality Check

- **More effort may be required to clean.** Many environmental products need more surface exposure time in order to clean and may need more effort from the user.
- **Workers may express initial resistance to switching products.** Thorough education is necessary to show users how to properly use products. Generally, even though some environmental products may require more effort to use, workers often embrace the safety aspect.
- **Local stores or product vendors often don't carry** environmentally preferred cleaning products because of the perception that these products carry a lower profit margin or are in sufficient demand. Buyers may have to investigate alternative sources of these products.

Action Plan

Two segments of business can make use of environmental cleaning products: janitorial and custodial contractors or building maintenance workers; and manufacturers, which can implement more environmentally benign cleaning practices in their manufacturing and clean-up processes.

General facility cleaning:

- Commitment and support from management.
- Involvement of purchasing agents.
- Assessment of current chemical products —

determine which should be discontinued immediately, and which are less harmful to health and to the environment.

- Replacement of high-toxic products with less toxic ones — find products without toxic chemicals, and with other environmental attributes such as recycled packaging.
- Proper education of end-users on use of new products by qualified instructors.
- Reduced chemical use — clean only when needed, rather than by schedule, dilute toxic chemicals and use chemicals sparingly.
- Other cleaning reduction strategies — limit dirt entry into the building with cleanable floor mats, increase carpet vacuuming.
- Safety in storage and mixing of chemicals — don't store incompatible chemicals near each other, wear safety goggles, rotate stock, and follow all product safety measures.

Manufacturing cleaning processes:

- Use aqueous cleaning, rather than solvent-based cleaning. The wastewater discharge from aqueous cleaning must be properly disposed of and/or treated.
- Use supercritical carbon dioxide (SCCO₂) cleaning for precision cleaning applications in which parts have intricate geometries or for applications in which parts are sensitive to water or high temperature. High initial capital costs make this technology prohibitive to most users.

Leads

- **Janitorial Products Pilot Project** (<http://www.westp2net.org/Janitorial/jp4.htm>) worked with janitors in several California cities to assess products used and then developed alternatives. The project's Web site contains fact sheets on cleaning, such as toilet cleaning, floor stripping,

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and carpet cleaning — details which products to use and how to use them safely. Also on site: information on 100 common janitorial product ingredients and their risks and information on what to look for in products.

- **City of Santa Monica** (<http://www.ci.santa-monica.ca.us/environment/policy/purchasing/bidspecs.htm>) custodial products bid gives sample bid language for advocating for environment- and health-safe products.

- **U.S. Environmental Protection Agency** (<http://www.epa.gov/opptintr/epp/cleaners/select>) cleaning products pilot project identifies and compares environmentally preferable cleaning products. Web site contains purchasing decision wizards, which help the user choose a cleaning product by selecting which environmental and safety attributes they wish to focus on.

- **U.S. Environmental Protection Agency EnviroSense** (<http://es.epa.gov/ssds/ssds.html>) contains databases of solvent replacements.

- **Pacific Northwest Pollution Prevention Resource Center Web site** (206-223-1151 office@pprc.org; <http://www.pprc.org/pprc/p2tech/p2tech.html>) contains technical reviews of manufacturing cleaners, links to sources of information about solvent alternatives, and resources for finding products.

Bottom Line

Buying environmentally preferable cleaning products can require changes in how cleaners are purchased and used, but such changes can pay multiple dividends, in both environmental impact and improved worker health and safety and morale.