Cleaning for Health: Products and Practices for a Safer Indoor Environment

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INFORM

About INFORM
Non-profit research organization founded in 1974
Key program areas:
- Chemical hazards prevention
- Solid waste reduction
- Sustainable transportation

INFORM’s Environmental Purchasing Program at a Glance
Work with public institutions to reduce the purchase of products that contain highly persistent and bioaccumulative toxic chemicals (PBTs).

Less-toxic Products

Cleaning for Health
- Summarizes hazards of janitorial cleaning chemicals
- Recommends “model” specs
- Lists “greener” cleaners that meet performance specs
- Suggests practices to reduce exposure

www.informinc.org/cleanforhealth.php
Hazards of Cleaners

6% Cause Cancer, Ozone Depletion, or Global

35% Contain Ingredients that can Cause Blindness, Severe Skin Damage, or Damage to Organs Through

Health Hazards of Janitorial Cleaning Chemicals

- 6 out of every 100 janitors are injured on the job annually
- 20 percent of these injuries are severe chemical burns to the eyes and skin
- Some disinfectants (e.g., “quats”) can cause occupational asthma

Para-dichlorobenzene
Restroom Deodorizers

Para-dichlorobenzene:
- chronic exposure may cause harm
- inhalation may result in headache, swollen eyes, stuffy head, anorexia (loss of appetite), nausea, vomiting, and throat and eye irritation
- is a probable human carcinogen
- generates PBTs in manufacture

Building Maintenance Example: Urinal Blocks

- INFORM helped Erie County (New York) identify urinal blocks that do not contain para-dichlorobenzene.
- County tested two alternatives in a high-traffic office building, a library, and a park.
- Results led County to revise its janitorial contract to offer only “non-para” products.

Toxicity Reduction: 2,000 lbs of para-dichlorobenzene annually
“Contaminant Mercury” in Cleaning Supplies

- Chlorine-bleach is sometimes made in a mercury process
- Mercury in cleaning products can be flushed into the sewer system.
- Mercury concentrates in sewage sludge, surface water, and fish.

Key Things to Avoid

- Flashpoint below 200°F
- Toxic chemicals (on EPA’s TRI list)
- High volatile organic compound (VOC) level (legal limit for general purpose cleaners 10%)
- Aerosol cans/trigger sprays
- pH above 10 or below 6
- Skin, eye and respiratory irritants

Avoid Asthma-Triggering Ingredients

- Asthmagens are not identified on MSDS
- Asthmagens listed at AOEC website: http://www.aoec.org/aoeccode.htm
  Massachusetts model bid specification:
  The first to require vendors to disclose “asthmagens” in cleaning products.

Avoid Fragrances

- Many people are sensitive to fragrances
- When switching to fragrance-free products, educate users and occupants.
- Many people think it is not clean if it doesn’t smell “clean.”
Minimize Disinfectant Use

- Since all disinfectants are toxic:
  - Disinfect only where needed
  - Clean BEFORE disinfecting
  - Use gloves and goggles, if indicated
- Leave disinfectant in place for specified time

Reduce Exposure

- Avoid aerosols or spray bottles
- Provide protective equipment for workers:
  - Gloves
  - Goggles
  - Aprons
- Ventilate enclosed spaces
- Clean when other occupants away

Avoid the Need for Harsh Cleaners

- Assess: Where does dirt come from?
- Reduce Foot Traffic: place mats at doors and reminders to occupants
- Prevent Mold and Mildew: Repair leaks or other source of moisture, provide ventilation, or remove carpet
- Improve interior design: Specify flooring that does not need floor waxes and strippers

Adjust Cleaning Methods

- New products may require a different cleaning method.
- Non-acid bowl cleaners may need to sit in bowl for 10 minutes.
- Schedule checks instead of automatic cleaning if use of surface varies
Use Proper Equipment

- Proper equipment can reduce amount, strength or toxicity of product needed:
  - Reusable cloth rags
  - Adequate mop heads
- Non-traditional equipment such as fiber-reactive cloths do not require chemicals.

Use Portion Control Equipment

- Portion control equipment can range from measuring cup to electronic dispensing system
- Train custodians to use only amount of product needed
- Start with recommended dilution; then see if more dilute solution will do the job

Case Study: Hackensack University Medical Center

Greening the Cleaning Program
- Inventoried all cleaning products
- Evaluated toxicity & effectiveness
- Surveyed non-hazardous substitutes
- Replaced 18/22 cleaning products
  - No strong acids in all-purpose cleaners
  - No ammonia in glass cleaners
- Set up mixing stations
- Established hospital-wide instruction

http://www.dienviro.com/index.asp

Lessons Learned

“Greener cleaners”:
- Improve indoor air quality
- Protect health of workers and building occupants
- Are widely available
- Are competitively priced
- Meet performance specifications
Most facilities that successfully switch to less-toxic cleaners ask custodians to participate in decisions about which products to try.

Start by replacing products that already cause custodians health problems or that are not cleaning effectively.

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Get User Input

- Request and read “material safety data sheet” (MSDS)
- Require vendors to disclose ingredients of concern
- Ask questions
- Choose vendors that provide training on how to properly use their products

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Become a Cleaning for Health Project Partner

INFORM helps Partners to:
- Evaluate existing cleaning products
- Research availability/cost/performance of alternatives
- Prepare specifications
- Identify local vendors
- Address implementation issues

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Janitorial Products Pollution Prevention Project (JP4)
http://www.westp2net.org/Janitorial/jp4.htm

Safe & Effective Toilet Cleaning

Many toilet bowl cleaners contain acids and other chemicals that are harmful. Use the mildest product you can find, and always wear gloves and goggles to protect yourself.

Mistakes in toilet cleaning are relatively safe to use, and have only a small impact on the environment. Disinfectants require a bit more care, but are still fairly safe. Acid cleaners are the most dangerous of all.

Regular Toilet Cleaning: Use a strong non-acid, cleaning product for your daily toilet maintenance. You can use a disinfectant on it as well. Avoid Ammonium Chloride to kill germs. Some suppliers combine the cleaner and disinfectant into one product. You can use a combined cleaner-disinfectant only if the toilet fixtures are not too dirty to begin with.

Stain Removal: Sometimes lime stains won’t come off with your regular daily cleaner. Use a stronger concentration of the same solution. Your regular daily cleaner right at first.

Acid cleaners are very dangerous. Always protect yourself by wearing gloves and goggles.