CLEANING WITH CAUTION

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King County Local Hazardous Waste Management Program
Why are we concerned about cleaning chemicals?

- About 6 out of every 100 professional janitors are injured by cleaning chemicals every year.
- One third of the cleaning products contain ingredients that can harm you.
- Knowing about chemical hazards and safer alternatives can help you clean more safely and effectively.

How can you tell the product is dangerous?

Read the label and follow the directions.

Look for signal words on labels.

- CAUTION / precaución / iska ilaaly
- WARNING / advertencia / digid
- DANGER / peligro / khatar
- POISON / veneno / sun

How can you get chemical exposure?

**Routes of exposure**

- Eyes
- Nose
- Lungs
- Mouth
- Skin
Protect yourself

1. Gloves
2. Dust Mask
3. Safety Glasses
4. Ventilation
5. Read and follow product labels and instructions.

The most dangerous cleaning products in the home.
- Oven Cleaners
- Drain Cleaners
- Acid-based Toilet Cleaners

Do you mix cleaning products together?

Clorox/Bleach + Ammonia = Dangerous Gas

Hazardous cleaning chemicals and you

Glycol ethers (2-Butoxyethanol, ethylene glycol monobutyl ether)
Through skin — anemia, low birth weights, reduced fertility.

Sodium Hypochlorite (bleach) and Sodium Hydroxide (lye)
Through eyes and lungs — corrosive, poisonous.
Hazardous chemicals in the environment

Dibutyl Phthalate (in plastics manufacturing)
Animal studies: developmental effects, reproductive effects, reduced weight, anemia, and liver damage.

Nonyl Phenol Ethoxylate and Octyl Phenol Ethoxylate (in soaps and lawn chemicals)
Extremely toxic to aquatic organisms, and endocrine interference.
No human information is available.
Animal studies: mimics estrogen. Reduces fertilized eggs, normal embryo and survival.

Some products look like food
Keep similar cleaning products separated from food.

These are the same.
Clorox, cloro and bleach are the same product with the same ingredient, sodium hypochlorite.

MSDS for Household Products

1. Use the internet.
2. Call the manufacturer. Phone number is on the label.
Cleaning tips review

- Protect yourself: use gloves, safety glasses, and dust masks.
- Keep the area well ventilated.
- Never mix cleaning products together.
- Never mix bleach/cloro with other cleaners.
- Read and follow label instructions.

And More Cleaning Tips Review

- Avoid buying “Warning”, “Danger” & “Poison” products.
- Use products labeled “Caution”
  For cleaning: use white vinegar, baking soda, hydrogen peroxide, and lemon juice.

Alternative Products

Green Cleaning Kit and Recipe
- Vinegar - Vinagre
- Baking Soda - Bicarbonato de Sodio
- Bon Ami
“Green” products available

Look for logos.

Logos and seals from certifying organizations.

Fragranced Products

- Perfumes and fragrances can contain hazardous chemicals.
- May contain hundreds of chemicals.
- Primarily synthetic chemicals derived from petroleum.
- Many of the chemicals are classified toxic or hazardous.
What is in a Fragrance?

Manufacturers are not required to list chemicals or test for health and environmental effects.

We don’t know.

Do you need Fragranced products?

- Avoid products with any fragrance, perfume, or scent.
- Avoid air fresheners and deodorizers. Open a window.
- A clean house does not smell like cleaning products; it has no smell.

How fragrances can affect human health.

- Headaches, cognitive difficulties, dizziness, memory loss, loss of consciousness, seizures, blurry vision
- Asthma attacks, breathing difficulties, congestion
- Fevers, joint and muscle pain, lethargy, sore throat, nausea, gastrointestinal problems, rashes
- Immune system weakened, thyroid dysfunction, vocational disability

Information from Dr. Anne Steinemann's “Shelf to Sound”.

Products that contain Fragrances

Fabric softeners

Ingredients list on label:
Biodegradable fabric softening agents (cationic).

Actual Chemicals Found
(Laboratory Analysis by Dr. Anne Steinemann)
- *chloromethane
- *acetaldehyde
- 2,4-dimethyl-1,3-cyclopentanedione
- 3-methyl-2-buten-1-ol acetate
- aterpinolene
- diethoxy methane
- 1,5-dimethyl-1,4-cyclohexadiene
- linalool
- aterpinene
- ethanol
- d-limonene
- methoxy ethane
- α-pinene
- gamma-terpinene coeluted with 2,7-dimethyl-2,7-octanediol
Products that contain Fragrances

Dryer sheets

Ingredients list on label:
Contains biodegradable cationic fabric softening agents and perfume.

Actual Chemicals Found
(Laboratory Analysis by Dr. Anne Steinemann)
• linalool
• ethanol
• benzylacetate
• d-limonene
• α-pinene
• benzyl alcohol, α-methyl acetate
• β-pinene
• dimethyl-3-cyclohexene-1-carboxaldehyde
• methylbenzoate
• acetone

Air fresheners

Ingredients list on label: No ingredients listed.

Actual Chemicals Found (Laboratory Analysis by Dr. Anne Steinemann, "Shelf to Sound")
• d-limonene
• 3-methoxy-3-methylbutanol
• linalool
• benzyl alcohol, α-methyl acetate
• β-pinene
• ethanol
• acetone
• cis-limonene oxide
• limonene oxide

Fabric softener, dryer sheet, and air freshener - common chemicals

• Chloromethane - suspected carcinogen
• Acetaldehyde - suspected carcinogen
• Linalool
• d-limonene - skin and eye irritant, dermal sensitizer
• Acetone – skin and lungs irritant, may cause liver damage
Air fresheners
Baking soda absorbs odors, place a few open boxes throughout the home.

White vinegar dilute in water and wipe on surfaces or spray in the air.

Fabric softener
Add ½ cup baking soda to the rinse cycle.

OR

Add ¼ cup white vinegar in the rinse cycle.

Cooking odors
Use vinegar to remove cooking odors.
Place a bowl with vinegar on the counter.
Información Útil
Poison Control Center: 1-800-222-1222
Household Hazardous Waste Line: 206-296-4692
Business Waste Line: 206-263-8899

References:
"Chemical Hazards from Cleaning Products", Washington State Labor and Industries, on-line Safety Training Tools Module 1, ppt. Website: www.lni.wa.gov/Safety/TrainingTools/online
"Janitorial Cleaning", Hawaii Department of Health, Pollution Prevention (P2) in Action fact sheet, Website: www.hawaii.gov/health/environmental/waste/p2wasteinfo
Design for the Environment (Dfe), US EPA, Website: www.epa.gov/dfe
"Janitorial Products, Pollution Prevention Project", Western Regional Pollution Prevention Network, Website: www.wrppn.org/janitorial
Agency for Toxics Substances and Disease Registry (ASTDR) http://www.astdr.cdc.gov/toxfaqs/tf.asp?id=4&Sid=1
"Shelf to Sound", Steinemann, Anne, University of Washington Professor, Civil and Environmental Engineering and Public Affairs