Toxics in Your Home?

Look Under the Sink

Judy Prill and Mary Sherwin,
CT Department of Energy & Environmental Protection

In consultation with Joan Simpson, CT Department of Public Health
You will learn

- Major reasons for switching to green cleaning and home improvement products.
- Ways to determine if the ingredients in a product are potential hazards.
- How to implement green cleaning and other alternatives in the home.
Common household products contain hazardous ingredients?
True  

False
Many contain hazardous chemicals
  - Corrosive
  - Reactive
  - Flammable
  - Toxic

Produce fumes
Pollute air, water, land
Contribute to asthma, allergies
Possibly cancer-causing
Typical Products Found On the Workbench

- Antifreeze
- Glue
- Varnish
- Stripper
- Degreaser
- Stain remover
- Paint
- Paint thinner
- Wood preservative
- Pesticide
Chemicals:

- > 80,000 chemicals registered
- Only 10% known health & environmental effects
- Traditional testing is for immediate health and safety effects; single chemicals
- Exposure to complex mixture of chemicals
Hidden Dangers

- Leave behind harmful residues
  - Can affect children & pets

- 7.3% of all toxic exposures reported were from an exposure to cleaning products
  (U.S. Poison Control, 2010)
  - More than half of those occurred to children 5 years old or younger.
Disinfecting

- Ammonia: Fumes irritating & corrosive
  - Damage to eyes, liver, kidneys, and lungs due to no ventilation or repeated exposure.

- Bleach: Corrosive
  - Can cause severe skin & eye irritation
  - Most accidental poisoning of children <6 years old
  **Bleach + Ammonia = toxic gas**

- Phenols
  - Found in spray, liquid, and wipe disinfectants
  - Corrosive to eye, skin
Disinfecting

- Soap & Hot Water with mechanical action works for most situations.
- If need to disinfect:
  - Use least toxic disinfectant
  - Use appropriately
Risk – toxicity of disinfectants

Most toxic

Chlorine (Bleach) / Sodium Hypochlorite

Phenols (Disinfectants)

Ammonia (Quaternary ammonia)

Least toxic

Hydrogen Peroxide
Hazards of Solvents

**PRODUCTS:**

- Oil-based paints
- Varnishes
- Lacquers
- Glues & adhesives
- Degreasing/cleaning agents
- Spot removers
- Paint thinners and strippers
- Pesticides (insecticides, fungicides)

**HEALTH HAZARDS**

- Eye and skin irritant
- Headaches, nausea, dizziness
- Coughing, shortness of breath, asthma
- Repeated exposure may result in kidney, liver, lung, or nervous system damage
- Known carcinogen, mutagen, and teratogen

**Chemical:** Organic Solvents
What Can You Do?

- **Purchase safer products**
  - Read labels
  - Buy the least amount of product for the job
  - Avoid scented products
  - Avoid aerosols
  - Look at packaging
What to look for on labels

- Signal Words
<table>
<thead>
<tr>
<th>Danger Level</th>
<th>Signal Word</th>
<th>What the Product Label Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST DANGEROUS</td>
<td>POISON</td>
<td>Highly Toxic</td>
</tr>
<tr>
<td></td>
<td>DANGER</td>
<td>Extremely flammable, corrosive or highly toxic</td>
</tr>
<tr>
<td></td>
<td>WARNING</td>
<td>Moderate Hazard</td>
</tr>
<tr>
<td>LEAST DANGEROUS</td>
<td>CAUTION</td>
<td>Mild or Moderate Hazard</td>
</tr>
</tbody>
</table>
What to look for on labels

- List of ingredients
  - Not required to list, but good ones do
  - May see a partial list without hazardous materials listed
  - Active ingredient
What to look for on labels

- Look for
  - Health effects
  - Personal protective equipment (PPE) and disposal requirements
**MSDS** (Material Safety Data Sheet)

- List health effects
- Health Rating 0-1
- Ingredients – quaternary ammonia, phenol, chlorine
- Personal protective equipment (PPE)
- Where can you find a MSDS?
GLANCE HC

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: GLANCE HC

Product Use: Industrial/Institutional Cleaning Product. This product is intended to be diluted prior to use.

Code: 385062 & 3151537 & 6362 & 6790

MSDS#: 11-501-1001

Validation Date: 7/30/2003

Section 2. Composition and Information on Ingredients

Ingredients | CAS# | % by Weight | Exposure Limits | LC50/LD50
--- | --- | --- | --- | ---
Ammonium Hydroxide | 1320-21-8 | 1.5 | Not available | RCRA (LD50): Acute: 350 mg/kg (Rat); Not available | Not available

Section 3. Hazards Identification

Routes of Entry: Inhalation, Skin contact, Eye contact.

Potential Acute Health Effects:

Eye: Corrosive. May cause permanent damage to normal vision.

Skin: Corrosive. May cause permanent damage.

Inhalation: May cause irritation and severe effects to nose, throat, and respiratory tract.

Ingestion: Corrosive. May cause harm to mouth, throat, and stomach.

Medical Conditions: Persons with pre-existing skin disorders may be more susceptible to irritating effects. Individuals with chronic respiratory disorders such as asthma, chronic bronchitis, emphysema, etc., may be more susceptible to irritating effects.

See Toxicological Information (section II)

GLANCE NON-AMMONIATED GLASS CLEANER

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name: GLANCE NON-AMMONIATED GLASS CLEANER

Product Use: Industrial/Institutional Cleaning Product

Code: 3173541 & 3301438

MSDS#: 1-5-1-1001

Validation Date: 7/30/2003

Section 2. Composition and Information on Ingredients

Ingredients | CAS# | % by Weight | Exposure Limits | LC50/LD50
--- | --- | --- | --- | ---
Ethyl Alcohol | 64-17-5 | 0.1 | OSHA (United States), TWAC: 190 mg/m³ | Not available | Not available

Section 3. Hazards Identification

Routes of Entry: Inhalation, Skin contact, Eye contact.

Potential Acute Health Effects:

Eye: May be mildly irritating to eyes. Skin: May be mildly irritating to skin.

Inhalation: Slight irritation to nose.

Ingestion: None known.

See Toxicological Information (section II)
Use Safe Methods to Minimize Exposure

- Ventilate area
- Use a drip tray to eliminate spills
- Use Personal Protective Equipment (PPE) – gloves, eye wear
- Read and follow label directions
Proper Storage at Home

- *Leave products in their original container with label.*
- Store on high shelves or locked cabinets.
- Keep containers dry to prevent corrosion.
- Tightly seal anything with vapors or fumes, including rags used with flammable products.
What else can I do?

Try green cleaning!
“Green” Cleaning

- Means using non-toxic or less toxic cleaning products
- Healthier for you & your family
- Better for the environment
Green Store-Bought Cleaners

- Safer – 3rd party certified or Design for the Environment
- Many found in health food stores
- More now available in grocery stores (consumer-driven)
  - e.g., Seventh Generation, Dr. Bronner’s, Planet
    (CT DPH & CT DEEP do not endorse any products or companies.)
What to look for on labels

- Seals
  - Green Seal, Eco-Logo
    (3rd party certifiers)

- Logos
  - DfE
Environmental Impact

- Look for products that are:
  - Plant-based not petroleum-based
  - Concentrated
  - Pump-spray bottles
  - Packaged in recycled content containers
Beware of GREENWASHING

- Greenwashing means misleading consumers about the environmental practices of a company or the environmental benefits of a product or service.

- Look for quantifiable claims, not vague, feel-good terms. (e.g., phosphate-free rather than environmentally-safe)
What Can You Do?

• Clean less 😊

• Make Your Own
Homemade Cleaners

- Naturally milder
- Many work as well or better
- Some may need more “muscle”
  - Hard to match dissolving power of toxic chemicals
- Safer around kids
Making Your Own Cleaners

- Can find most ingredients in grocery store
- Others found in health food stores & on-line
- Getting started/making transition may take extra time (mixing & labeling).

Start simple.
Shopping List

- Vinegar
- Borax
- Liquid soap (dishwashing liquid)
- Baking soda
- Scrub pads
- Spray bottles
- Measuring cups & spoons
- Microfiber cloths
All Purpose Cleaner

Pour: 3 tablespoons of vinegar
    1 teaspoon borax
    2 cups of water into a spray bottle.

Shake to dissolve.

Add 1 teaspoon liquid soap (or dishwashing liquid) to the bottle.

Shake again.

Spray on surface, wipe clean.

For tough dirt, leave cleaner on for a few minutes and then wipe off.
Label and Storage

All Purpose Cleaner

For 3 Tablespoons vinegar, 1 teaspoon powdered dishwashing liquid, and 2 cups hot water into a spray bottle. Shake well until dissolved. Then add 1 teaspoon liquid soap (dishwashing liquid) to the bottle and shake well again. Spray on surface and then wipe down. Tough dirt leave cleaner on for a few minutes then wipe off. Avoid getting the cleaner in your eyes. Keep out of the reach of children.
Cost

- If Homemade
  - Products are one-tenth the store price
  - Don’t have to deal with as many types of cleaners

- If Store Bought “Green”
  - Typically slightly more expensive
Q: “I have been using bleach and ammonia for years and I haven’t had any problems. Why should I switch?”

A. Maybe none that you can notice
   - Chlorine Bleach is corrosive; Ammonia fumes are irritants and corrosive. Many are respiratory irritants.
   - Long term and cumulative effects; increased sensitivity
Q: “How can I make sure everything is disinfected if I change to less toxic cleaning products?”

A. Everything does not have to be disinfected. Your own family’s germs are the germs in the home. Only be concerned about disinfecting when someone is sick and then disinfect only in the “sick room.”
Proper Disposal

- *Do not* throw it out or dump down drain!
- Give to someone who won’t make the switch.
- Ask your retailer if they recycle or take back materials like used oil or paint.
- Check to see what your town accepts at the transfer station.
- Bring unwanted products to a Household Hazardous Waste Collection Day.

[www.ct.gov/deep/hhw](http://www.ct.gov/deep/hhw)
Recipes for Healthy Cleaners

All Purpose Cleaner - Pour 3 Tablespoons vinegar, 1 teaspoon borax and 2 cups hot water into a spray bottle. Shake until dissolved. Then add 1 teaspoon liquid soap (or dishwashing liquid) to the bottle and shake it again. Spray on surface and then wipe clean. For tough dirt, leave cleaner on for a few minutes and then wipe off.

Glass Cleaner - Pour 2 Tablespoons of vinegar and 2 cups of water into a spray bottle. Add 2 drops of liquid soap (or dishwashing liquid) and shake to mix. Spray on glass and wipe with lint-free cloth. Dry off with a second lint-free cloth.

Sink, Tub and Tile Cleaner - Sprinkle on baking soda, rub with wet sponge or scrub cloth and rinse. For mineral deposits, soak a cloth in vinegar and leave it on the deposit for about an hour and then clean off area. For soap scum deposits, spread liquid soap or clarifying shampoo on the surface and leave it for about an hour. The deposits will be softened and then can be cleaned away with a scrub cloth or a brush. For mold or mildew, make a paste of borax and water and put it on the surface to be cleaned. Leave paste on the area for about an hour and then scrub it off.

Toilet Bowl Cleaner - Squirt vinegar from squeeze bottle under the rim. Pour about 1/2 cup borax into the toilet and use a toilet brush to clean the bowl. For mineral deposits, leave mixture in toilet for at least an hour. Then use the brush again to clean. Use the all-purpose cleaner and a sponge or scrub cloth to clean the seat and outside of the bowl.

Oven Cleaner - Make sure oven is turned off. Make a paste of baking soda and water and put on the sides and bottom of the oven. Let it set overnight. Scoop out baking soda and then wipe clean with damp cloth. Use scouring pad for tough spots.
The Cleaning Caddy

Contains:
- Spray bottles (labeled)
- Measuring cups & spoons
- Squeeze bottle (vinegar)
- Dishwashing liquid
- Borax
- Box & shaker baking soda
- Scrubbing brush
Breathe Easy Pledge

- Make the commitment to TRY at least 1 alternative non-toxic cleaner
  - Sign pledge

- Take recipe card

- Agree to follow-up
  - Call, email

- Bring hazardous cleaners to HHW collection
Resources

- Household Alternatives for Reducing Toxic Products in Your Home
  www.ct.gov/deep/greencleaning

- Indoor Air Quality (IAQ) House
  www.epa.gov/iaq/iaqhouse.html

- EPA Healthy Homes Booklet
  www.epa.gov/ne/healthyhomes/pdfs/healthyhomes.pdf

- Household Products Database

- Women’s Voices for the Earth
Contact Information

- **CT DEEP**
  
  Mary Sherwin  
  [mary.sherwin@ct.gov](mailto:mary.sherwin@ct.gov) 860-424-3246
  
  Judy Prill  
  [judith.prill@ct.gov](mailto:judith.prill@ct.gov) 860-424-3694

- **CT DPH**
  
  Joan Simpson  
  [joan.simpson@ct.gov](mailto:joan.simpson@ct.gov) 860-509-7818