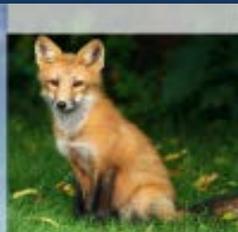




Connecticut Departments of Energy and Environmental Protection and Public Health



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Toxics on the Workbench



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

Joan Simpson, CT Department of Public Health



Connecticut Department of Energy and Environmental Protection

Did You Know?

Home improvement products can be quite harmful to your health!



Typical Products Found On the Workbench



Typical Products Found On the Workbench

- Oil-based paints
- Varnishes and waxes
- Paint thinners (turpentine, mineral spirits)
- Paint, floor, & varnish strippers
- Stains & wood preservatives
- Adhesives, glues, epoxies, caulk
- Metal polish
- Mothballs
- Pesticides- insect sprays, rat/mouse poisons, weed killers
- Car waxes and polishes
- Antifreeze, windshield washer fluid
- Lubricants/degreasers



Home Improvement Products

- Many contain hazardous chemicals
 - Corrosive
 - Reactive
 - Flammable
 - Toxic
- Pollute air, water, land



Home Improvement Products

- Contribute to asthma, allergies

Possibly:

- Cancer-causing (Carcinogen)
- Genetic mutations (Mutagen)
- Birth Defects (Teratogen)



Do *you* know which products may contain harmful chemicals ?



10 Kids Drink Windshield Wiper Fluid At Daycare

JON GAMBRELL

React >



A daycare center for fluid in a refrigerator highly toxic alcohol th

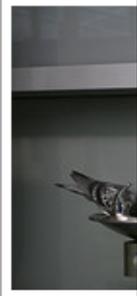
LITTLE ROCK, A Aid and placed in

Doctors estimate pediatric pharmac

Only one child re induce comas an

NYC School Kids Drank Antifreeze-Laced Water Because It Tasted Sweet

By Chris Morra



(mjar81)

"Probably be

All 71 childre screw-up cre

"The compa understatem

For now, students are being provided with bottled water.

Pet owners lock up cats indoors as anti-freeze killer claims 48th victim

Cat owners are locking their pets indoors after a criminal dubbed the 'Cold Cat Killer' is believed to have struck for the 48th time.

TIMELINE OF CAT KILLINGS

- 1 **March 2008** Four cats die in Beech Road, Bridgwater
- 2 **April 2008** Seven cats found dead in the Bower area of Bridgwater
- 3 **May 2008** One cat from Coleridge Road, Bridgwater, found dead
- 4 **August 2008** Six cats from Bath Road, Bridgwater, die
- 5 **November 2010** One cat found dead in Burgage Road, Stogursey. Owner Emma Guy claims she has found evidence of another 15 other recent cat deaths in the village.
- 6 **April 2012** Two cats found dead in Priorswood Road, Taunton
- 7 **April 2012** Another 12 cats found dead in Lyngford Place, Lyngford Square and Massingham Park, in Taunton

Graphic mapping the cat killings across Somerset

'I didn't like it... but I drank it out of bravado': Couple nearly die after drinking antifreeze they thought was vermouth

By DAILY MAIL REPORTER
UPDATED: 09:13

Comments

A couple who th bottle of vermouth died after drinking out to be antifree

Retired teachers Spurgin, both 66 after drinking the lemonade.

Mrs Spurgin, wh economics, dec 'horrible' and on while Mr Spurgin glass 'out of bra admitted he was

Doctors warned come close to d fatal mix-up left t failure

November 24, 2010, 12:25 pm | 3 Comments

Candy, or Mothballs? E.P.A. Cautions Public

By MIREYA NAVARRO



Mothballs that look like candy?

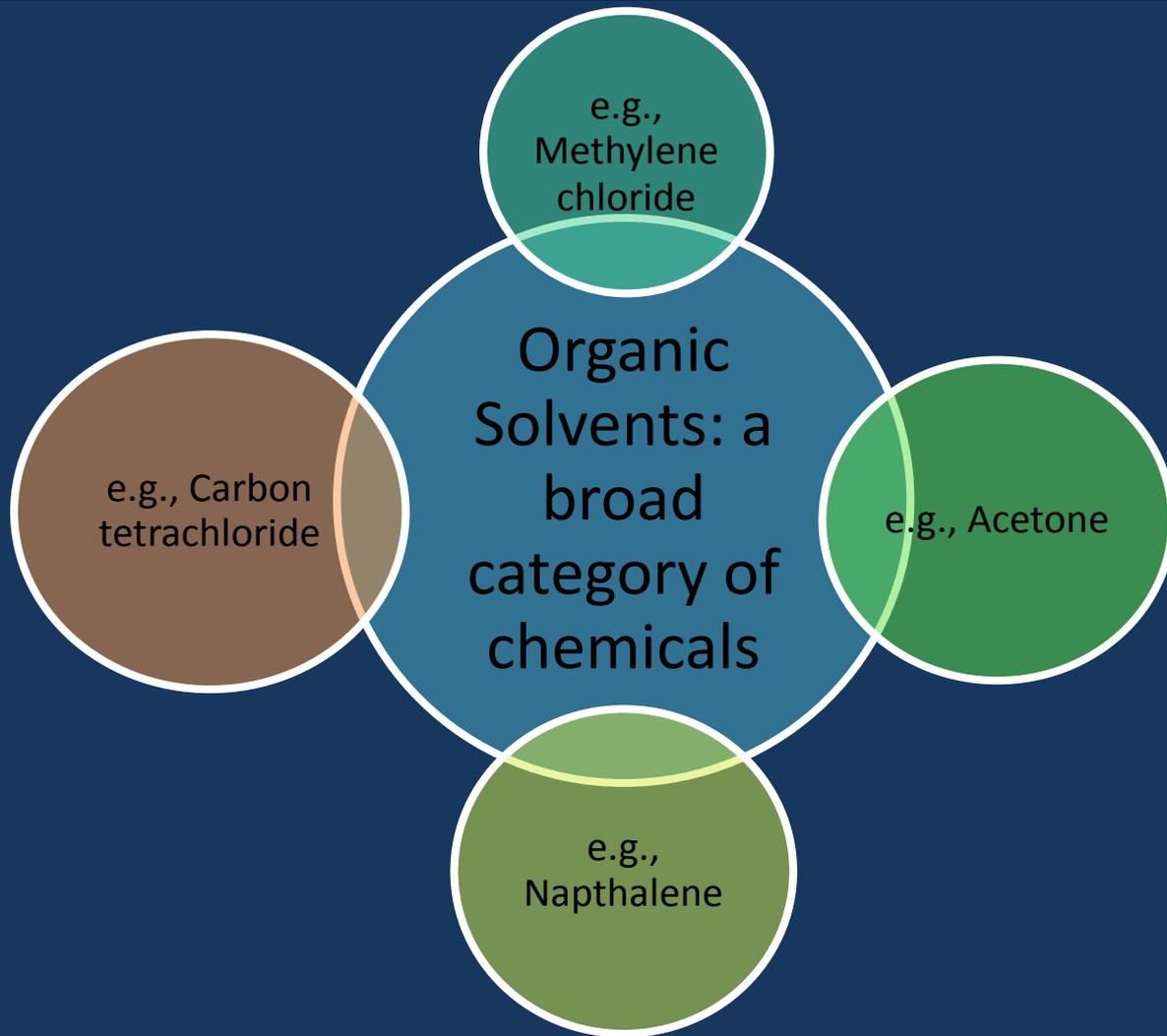
This week the Environmental Protection Agency [warned the public](#) about mothballs

imported from China that could be mistaken for sweets because of their brightly decorated packaging.

Sold as Fuji Lavender Moth Tablets, the mothballs were not registered with the E.P.A. as required by federal law and their sale is illegal, officials said. The product is suspected of containing the toxic chemical



A little chemistry....





Products:

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

Chemical: Organic Solvents

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





Products:

- Paint and varnish strippers
- Pesticides

Chemical: Methylene Chloride

Health Hazards

- Classified as a potential cause of cancer by EPA and Consumer Product Safety Commission.
- Decreases blood cells ability to carry oxygen





Products:

- Epoxies and glues
- Mothballs
- Pesticides

Health Hazards

- Breakdown of red blood cells, leading to hemolytic anemia
- Liver damage

Chemical: Naphthalene



Mothballs: a continuing danger

- Naphthalene used to be primary ingredient, now paradichlorobenzene is used instead
- Paradichlorobenzene can cause headaches, nausea, irritation to the eyes, nose and throat, and liver and kidney damage





Products:

- Antifreeze
- Window washing fluid
- Some furniture strippers

Chemical: Ethylene Glycol

Health Hazards:

- Absorbs through skin easily
- Ingestion may cause damage to nervous system, liver, kidneys, heart, and brain. Could lead to death.
 - Keep out of reach of children, bright color and sweet smell of antifreeze can be mistaken as juice.



Volatile Organic Chemicals (VOCs)

- Most of the chemicals that have been mentioned are also VOCs
 - Gasses that evaporate easily
- Often found in aerosol sprays as propellants
- VOCs that enter the atmosphere contribute to the creation of ground-level ozone





Products:

- Paints
- Varnishes
- Some glues and adhesives

Chemicals: VOCs such as formaldehyde

Health Hazards:

- Respiratory irritant and allergic reactions
- Fatigue, dizziness, nausea
- Liver, kidney, and nervous system damage





Products:

- Car batteries
- Boat batteries
- Lawn-mower batteries
- Toilet bowl cleaners

Chemical: Sulfuric Acid

Health Hazards

- Highly corrosive, dangerous to skin and eye contact
- Inhalation can irritate respiratory track and mucus membranes
- Ingestion causes serious burns to throat and stomach





Products:

- Pesticides
- Used motor oil
- Paints
- Wood preservatives

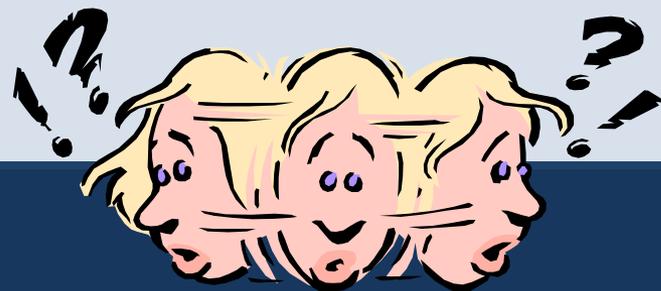
Chemicals: Heavy Metals such as, copper, zinc, lead, and cadmium

Health Hazards

- Acute exposures: nausea, vomiting, abdominal pain, headaches, hypertension, and difficulty breathing.
- Chronic exposures: damage to central nervous system, birth defects, learning disabilities, arthritis, memory loss



So, what can you do?



- Minimize your exposure
- Dispose of used products properly
- Look for signal words on labels
- Buy safer alternatives
- ***Make*** safer alternatives



How to Minimize Your Exposure

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



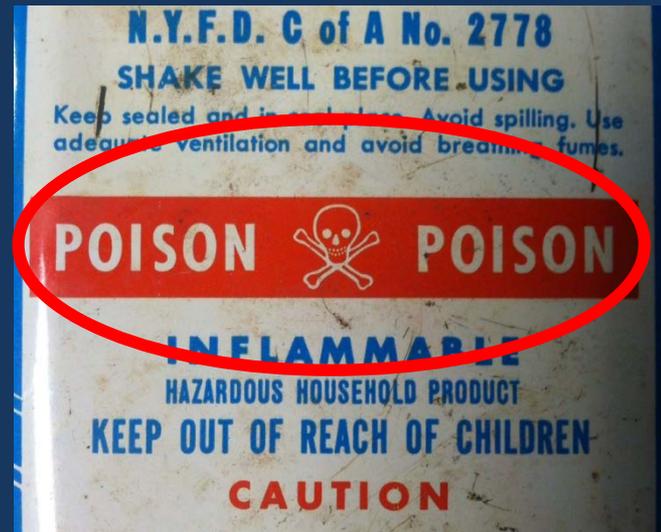
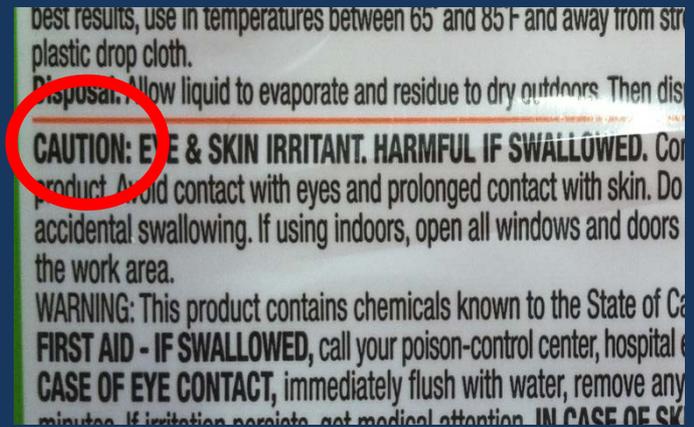
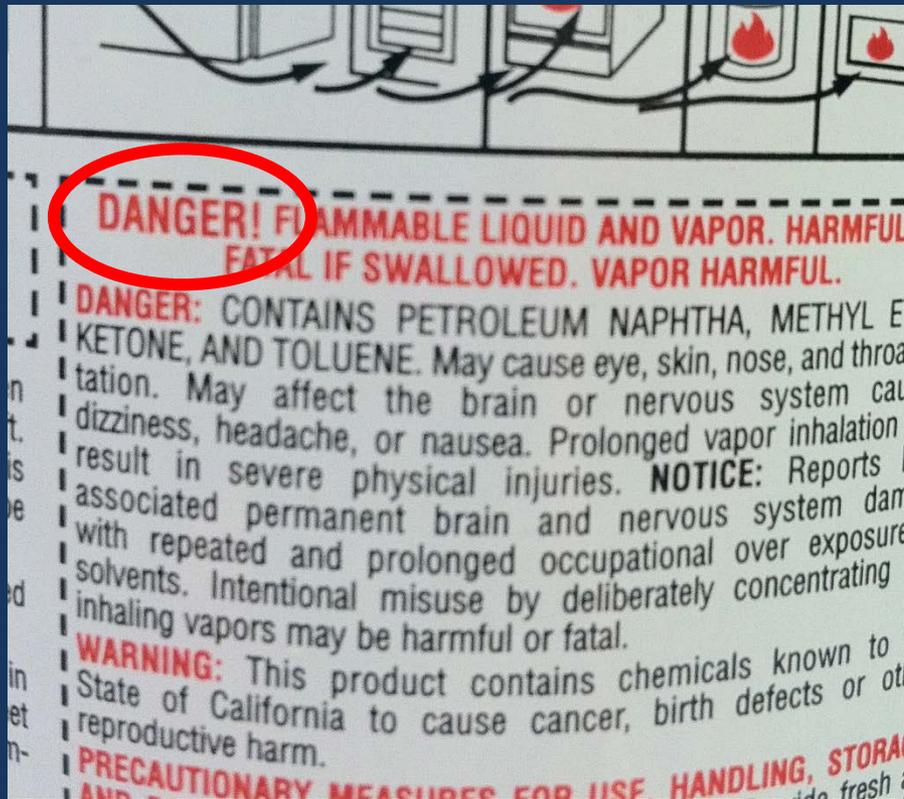
Proper Disposal

- *Do not* just throw it out!
- Ask your retailer if they recycle or take back materials like used oil or paint.
- Some items can be brought to a municipal transfer station--check to see what your town accepts.
- Bring unwanted products to a Hazardous Household Waste Collection Day.
- Connecticut residents check out: ct.gov/deep/hhw



What to Look for on Labels

- Signal Words



What to Look for on Labels

Danger Level	Signal Word	What the product label means	Products on which you may find the signal word
MOST DANGEROUS	POISON	Highly Toxic	Antifreeze, pesticides
	DANGER	Extremely flammable, corrosive or highly toxic	Varnish/paint strippers, Windshield wiper fluid,
	WARNING	Moderate Hazard	Engine Degreaser, Paint, Thinners, Mothballs
LEAST DANGEROUS	CAUTION	Mild or Moderate Hazard	



Safer Alternatives

- Antifreeze made with propylene glycol
- No or low -VOC (volatile organic chemicals) products
 - Check the label for this information
 - Avoid aerosols
- Cedar blocks/chips instead of mothballs
- Integrated Pest Management (IPM)
- Vegetable or mineral oils for metal polish
- Sandpaper, a scraper or heat gun for stripping paint from small items



Safer Alternative: “Water-based”

- Oil-based and solvent-based products contain many of the organic solvents that are hazardous to human health; these are the chemicals that produce the strong “fresh paint” odor
- Choose water-based paints, stains, sealants, strippers, adhesives and glues instead of oil-based or solvent-based ones
 - Water-based products contain significantly fewer organic solvents



Buying Safer Alternatives

- Look for products with green certification labels, e.g., Green Seal
- Some commercial brands have separate lines of eco-friendly products
- Buy only enough product for the job



While in the Store

- You may not be able to get environmental information about products while you are in the store
- Salespeople might describe the environmental implications of products in unique or unexpected ways
 - e.g., “This paint has less of an odor” probably means that the paint has fewer VOC’s
- Be persistent and try to get as much information as possible; ask direct questions
- If you are not satisfied with what information you’ve received about a product while in the store, call the company or check their website



Make Your Own Recipes

Home-made BBQ cleaner

¼ cup washing soda, 1 gallon warm water. Dissolve washing soda in warm water. Saturate a sponge with the mixture and wipe down BBQ areas that need de-greasing. Rinse homemade cleaner off thoroughly. Excess should not be stored -- discard all leftovers.



Make Your Own Recipes

Home-made Organic Pesticide

4 cloves garlic, 5 ½ quarts of water, 2 teaspoons natural powdered soap. Crush cloves of garlic into a fine dust, and then boil them in half a quart of water for 15 to 20 minutes. Let cool. Filter out the water into a glass container. Add soap. This will help the mixture to stick, without harming the plants. Dilute in 5 quarts of water, or use 1 part garlic mixture for 10 parts water. Add to a spray bottle and apply to plants 2 or times a week. This mixture does not kill insects but repels them from plants.

Home-made Tarnish Remover

6 tablespoons salt, 6 tablespoons flour, white vinegar. Mix all ingredients together to make a paste of equal parts salt and flour with a few tablespoons of white vinegar. Apply to your favorite brass candlesticks or copper bowl with a soft cloth and rub. Rinse with water and dry.



Make Your Own Recipes

Home-made Milk Paint with Lime

- 1 gallon nonfat milk
- 2 1/2 ounces “Type S” lime (dry powder available at hardware stores)
- 2 1/2 cups water
- Natural pigment (more or less depending on desired color; available in powdered form at artist supplies stores)
- 6 cups whiting (powdered chalk)

Leave milk in a warm place for a few days to curdle. Then pour through a colander lined with cheesecloth. You should have about 2 cups of curds. Mix curds and lime powder in a blender; this substance is the “binder” Add a little water if the mixture isn’t blending well. Strain to remove any lumps. Add water to the binder immediately after it is prepared. Dampen and crush pigments. Add them to the mixture a little at a time until desired color intensity is achieved. Stir in filler.

Read more: <http://www.motherearthnews.com/diy/make-safe-natural-paint.aspx?PageId=4#ixzz2XQKzWRtA>



Useful Resources

- The National Institute of Health's Household Products Database
<http://householdproducts.nlm.nih.gov/>
- The Environmental Protection Agency's Design for the Environment website
http://www.epa.gov/dfe/product_label_consumer.html#consumers
- Washington Department of Ecology's Toxic Free Tips
<http://www.ecy.wa.gov/toxicfreetips/hazSubA-Z.html>
- The Pollution Control Agency of Minnesota's page on reducing Toxics in your home <http://www.reduce.org/toxics/index.html>



Recap

1. Many home improvement products contain chemicals harmful to your health
2. Know what harmful ingredients are in your products
 - Read labels or MSDS sheets
 - Take proper precautions during use
3. Purchase or make your own safer alternatives
4. Store products safely away from children, heat, & moist surfaces

