WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

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Turning the Tide

On Toxics in the Home

A Guide to Safer Alternatives and Proper Disposal of Hazardous Household Products

Toxicity Rating

		Probable fatal dose for a 150 pound person
6	*Super Toxic*	A taste (less than 7 drops)
5	*Extremely Toxic*	Between 7 drops and 1 teaspoonful
4	*Very Toxic*	Between 1 teaspoonful and 1 ounce
3	*Moderately Toxic*	Between one ounce and 1 pint
2	*Slightly Toxic*	Between 1 pint and 1 quart
1	*Practically Nontoxic*	More than 1 quart

Poison Control Centers

- Central Washington: 1-800-572-4400
- Eastern Washington: 1-800-572-5842
- Southwest Washington: 1-800-542-6319
- Northwest Washington: 1-800-732-6985

24-hour statewide emergency spill number: 1-800-262-5990

SEATTLE POISON CENTER
1-800-732-6985

Turning the Tide on Toxics in the Home:

A Guide to Proper Disposal of Hazardous Household Products, Precautions, and Safer Alternatives

WASHINGTON STATE DEPARTMENT OF ECOLOGY

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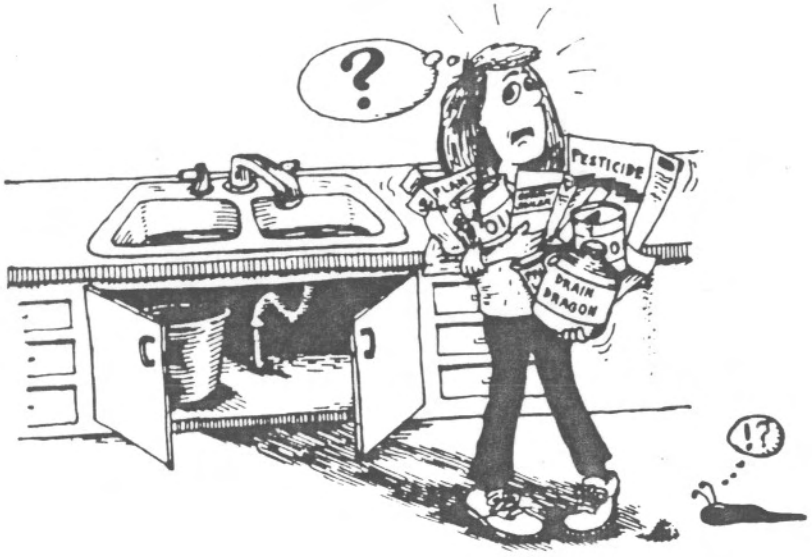

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David Zink, February 1990
Illustrated by *Tim Schlender*

Disclaimer:
The purpose of this guide is to provide information about safer alternatives to many presently used products and practices. An effort has been made to present information based on the most appropriate technology available, drawn from a variety of sources, in as concise and useful a format as possible. This is a compilation, not a scientific treatise. The Washington State Department of Ecology cannot assume any liability for the effectiveness or the results of the procedures or materials described. Use caution with all cleaners, solvents, pesticides, and other chemicals, and keep them out of reach of children and the mentally impaired.

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Introduction: Hazardous Waste In The Home

"Teach your children what we have taught our children, that the earth is our mother. Whatever befalls the earth, befalls the sons of the earth... The whites, too, shall pass; perhaps sooner than all other tribes. Contaminate your bed, and you will one night suffocate in your own waste."

- Chief Seattle, 1854.

13.9 million pounds of hazardous waste per year! Does this sound like some huge industry that needs lessons on reducing wastes? Not this time. This is a conservative estimate of the quantity of household hazardous wastes that we in Washington state put into our household garbage cans in 1988! Many of our hazardous wastes are recycled or disposed of properly. However, much is burned, buried, flushed down the drain, and poured onto the ground or into storm drains. Even though the amount of hazardous waste coming from an individual home may be small, these small amounts from many homes can add up to a *big* problem!

A substance is hazardous if it is:

- *Toxic: directly or indirectly poisons living things.*
- *Ignitable: capable of catching fire.*
- *Corrosive: capable of chemically eroding another substance, such as skin, cloth, or metal.*
- *Reactive: capable of participating in a chemical interaction or transformation. .*

We tend to think that household products offered for sale must be safe to use and to dispose of. Unfortunately, many household products contain hazardous ingredients that can harm people and the environment. When these products are no longer needed or wanted, they become household hazardous wastes. Along with household hazardous material comes a responsibility to dispose of the waste properly.

Even though most of these products weren't available 100 years ago, it's difficult to imagine how people could get along without them. Although they help us out in many ways, we need to be aware that these products and their leftovers can be dangerous. Some of the dangers associated with hazardous household products and wastes are:

■ Household hazardous wastes disposed of carelessly damage our environment.

■ Improperly disposed hazardous wastes can come back to haunt us. For example, household hazardous waste disposed of in a landfill may work its way down to the drinking water supply.

■ In the event of a house fire, accumulated aerosols and other flammable products may ignite or explode. This increases the intensity of the fire and the threat to occupants, neighbors, and firefighters. Burning toxic materials produces toxic fumes.

■ Household hazardous wastes disposed of in the trash can injure sanitation workers, and damage garbage trucks and landfill equipment. Splashes of acid can cause burns or blindness; mixtures of certain materials produce dangerous fumes, explosions, or fires.

■ Hazardous wastes disposed of down a drain can damage septic tank function or pass unaltered through a community wastewater treatment system, polluting receiving waters.

■ What happens to you, your family, or pets when exposed to toxic chemicals? Acid and lye can burn skin, eyes, or respiratory passages. Caustic fumes breathed into your lungs can cause breathing difficulty and lung damage. Pesticides and solvents can depress the central nervous system. The effects are both physical and mental: weakness, confusion, dizziness, irritability, light-headedness, headaches, nausea, profuse sweating, tremors, and convulsions. Cancer can develop as the result of repeated exposures to some chemicals.

■ Indoor air pollution is a very real concern because we spend 80 percent to 90 percent of our time inside. Indoor air may be 10 to 100 times as polluted as outside air.

Safety Tips

What steps can we take to minimize the hazards associated with household chemicals?

■ Learn about the uses and dangers - the "pros" and "cons" -of the product before you buy it. If the label directions are unclear, ask the dealer before buying the product. Watch for the words "Danger," "Warning" and "Caution." The signal word "Danger" indicates the product is extremely flammable, poisonous, or corrosive. "Warning" is of intermediate concern, while "Caution" is the mildest of the three categories. All three of these warning signal words mean serious business! Be a smart shopper: if the choice is between two toxic products, choose the less toxic one.

■ Most toxic ingredients contained in household products have been assigned a toxicity rating. Use the Toxicity Rating Chart on inside front cover to help you choose the least-toxic product available for the job.

■ Wear clothing other than your everyday clothes when working with hazardous products. Wash and rinse separately. Line-dry, if possible: the high dryer temperature could ignite any remaining flammable vapors.

■ Avoid breathing hazardous mists or vapors. If possible, work outdoors. If you must work inside, open windows for more ventilation.

■ Wear protective equipment appropriate to the particular job and to the material you are using. Using the right gloves, goggles and respirator in good condition (no holes), could save your health, sight, maybe your life!

■ Do not wear soft contact lenses when working with solvents. They can absorb and trap the solvent next to the eye.

■ Do not eat, drink, or smoke while using hazardous material. Wait until after you clean up, even if you are using gloves.

■ Never mix different hazardous products unless specifically directed. Explosive or poisonous chemical reactions can occur. For example, mixing ammonia with chlorine bleach will produce a highly toxic gas.

■ Keep leftover hazardous products in their original containers. Keep labels intact for directions to follow and a list of contents to refer to in case of an accidental poisoning. Put caps and lids back on tightly. **NEVER** put them into old food containers or even store them near foods or medical supplies.

■ Store products in a safe location: back away from the shelf edge and out of children's reach. Put "Mr. Yuk" stickers on containers of hazardous products and teach children to stay away from these products. Post the telephone number of the nearest Poison Control Center by your telephone. Call immediately if an exposure occurs.

■ If a spill of a hazardous substance occurs, contact your local fire department, health department, or the Department of Ecology's Hazardous Substance Information Line (1-800-633-7585) for advice. **For emergency spills only**, call the Division of Emergency Management 24-hour spill number: 1-800-262-5990.

■ Select water-based products instead of solvent-based, whenever possible.

■ Avoid using more of a product than the label recommends. Twice as much does not work twice as well.

■ If you do not have any excess left over, you will not have a disposal problem. Remember "B.U.G.": **B**uy only what you need, **U**se it all up, or **G**ive it to somebody who will.

■ Stop and think before you dispose of any potentially hazardous waste. Would you want this substance in your drinking water or in the environment? If the answer is "NO," take a little time to find out the correct disposal method.

■ If pregnant, avoid exposure to any toxic chemicals. Many household products are untested for their effects on the unborn.

Prevent Water Contamination:

■ *Use only the amount of a product required for the job.*
■ *Use hazardous products as infrequently as possible.*
■ *Never bury household waste.*
■ *Never dump waste on the ground.*
■ *Never pour wastes down a storm drain.*

Guide to Product Ingredients, Proper Disposal, Precautions, and Safer Alternatives

This alphabetical guide provides information on hazardous ingredients, properties, proper disposal of, and safer alternatives to common house-hold chemical products. Some toxic chemicals are now banned from use as ingredients in certain products. However, there are still many products on our shelves that were manufactured prior to these bans. Refer to the table on the inside front cover for an interpretation of the toxicity ratings.

The best currently-available disposal options are listed in order of preference. You will see that a household hazardous waste collection project is frequently mentioned as one of the preferred options. If your county has yet to sponsor a household hazardous waste collection event, or a fixed collection and storage facility, call your local elected officials to encourage them to plan such a program.

After you have properly disposed of your hazardous material, check this guide for health and environment-friendlier alternatives to try next time. Keep in mind that even these less toxic alternatives may present hazards if not used properly.

Aerosols

Examples of toxicants: *methylene chloride (a known carcinogen), organic solvents, nitrous oxide, o-phenylphenol, propane.*

Toxicity rating: *2-4. Ignitable, Explosive. Intentionally inhaling aerosol gases for "kicks" has resulted in many deaths. Today, the two main propellants are nitrous oxide (associated with brain damage and may cause cancer) and propane (highly flammable).*

Disposal:
Best: Use it up in a well ventilated area, following label instructions or share with someone who will; turn the can upside down out-of-doors and hold down the button to dispel any remaining propellant. Empty containers can be disposed of in the garbage.
2nd Best: Store in a safe place for a household hazardous waste collection project. *NEVER* burn aerosol cans or place them in a trash compactor.

Alternatives:
- Use non-aerosol (pump-spray, roll-on, or liquid) products.

Air fresheners/Deodorizers

Examples of toxicants: *methylene chloride, formaldehyde, o-phenylphenol, sodium sulfate, isobutane, propane, p-dichlorobenzene.*

Toxicity rating: *1-4.*

Disposal:
Best: Following label instructions, use it up in a seldom-used room or share with someone who will; turn the can upside down out-of-doors and spray out any remaining propellant; dispose of the empty can in garbage.
2nd Best: Store in a safe place for a household hazardous waste collection project.

Alternatives:

General:
- Open windows and doors for at least a few minutes every day.
- Locate the source of the odor problem and take corrective action.
- Repair house to correct moisture problems. Add vents, vapor barriers, detour water drainage away from the house, etc.

For a room:
- Place pure vanilla on a cotton ball in a saucer, place in car, room, or refrigerator. Reported to remove even skunk odors.
- Set out a dish of vinegar, or boil 1 tablespoon of white vinegar in 1 cup of water to eliminate unpleasant cooking odors.
- Simmer cinnamon and cloves.
- Set out herbal bouquets in open dishes.
- Burn scented candles.

For carpets:
- Baking soda will absorb smoking, cooking, pet, and other odors that settle into carpetting.

For a sink garbage disposal:
- Grind used lemons in the disposal.
- Pour baking soda in the disposal.

For the refrigerator:
- Leave an open box of baking soda in the refrigerator.

For cutting boards:
- Use a baking soda paste and let stand 15 minutes to remove odors like onion and garlic.

Most air fresheners/deodorizers do not freshen the air at all. Instead, they desensitize your sense of smell, coating your nasal passages with an oily film, or mask the unpleasant odor with another odor.

Ammunition

The primary danger associated with ammunition is accidental discharge. The risk is especially great when children of any age view ammunition as something to play with. Use of improper ammunition can also cause accidents: be certain that the ammunition used is the proper size for the weapon . Store in a cool, dry location secure from heat, flame, and children.

Disposal: Contact your city or local police department.

Antifreeze

Example of toxicant: *ethylene glycol.*

Toxicity rating: *3.*

Disposal:
Best: Recycling programs are available in some areas. For details, phone 1-800-RECYCLE.
2nd Best: Bring in to a household hazardous waste collection project.

■ In some locations, if your home is connected to a central sewer system, it is preferable to flush small amounts of diluted antifreeze down an inside drain. Before doing this, obtain permission from your sewage treatment plant operator.

■ Avoid leaving puddles of antifreeze as animals are attracted by the sweet smell and taste and can be easily poisoned.

■ Call your local health department to find out which method is recommended in your area. **NEVER** pour antifreeze down a storm drain or ditch , or flush it into your septic tank.

Alternative:
■ Propylene Glycol-based antifreeze is significantly less toxic than Ethylene Glycol-based. Ask for it when you buy antifreeze. .

Three ounces of antifreeze can kill an adult if taken internally.

Art supplies

Examples of toxicants: *cadmium, uranium, cobalt, chromium, lead, hexane, formaldehyde, asbestos, toluene, benzene, arsenic, silica.*

Toxicity: *1-5. Ignitable, Carcinogenic, Respiratory Irritants. When using art supplies containing toxic ingredients, follow label directions carefully, with good ventilation*

Disposal:
Best: Hold unused supplies for a household hazardous waste project. Dispose of dry, empty containers in garbage.
2nd Best: Glazes that contain lead or uranium can be solidified by firing and then disposed of in garbage.

Alternatives:
■ Choose water-based inks, paints, glues, and cements.

■ Use supplies without lead, chromium, cadmium, or other toxic pigments.

Art supplies can contain materials banned from other products.

Extreme care should be exercised when purchasing and using art supplies.

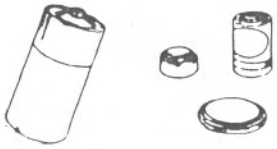
Batteries
vehicle

Examples of toxicants: *sulfuric acid, lead.*

Toxicity: *3-4. Corrosive.*

Disposal:
Best: Trade in your old battery when purchasing a new one: you will pay five dollars more if you don't. For larger quantities, call 1-800-RECYCLE for recycling locations near you. *NEVER* dispose of car batteries in the garbage: you could be subject to a $1000. fine!

Alternative: None.



Batteries
household

Examples of toxicants: *mercury, cadmium, silver, lead.*

Toxicity: *2-5. Corrosive.*

Disposal:
Best: Several counties in Washington have household battery collection sites at retail stores, recycling centers, etc. Call 1-800-RECYCLE for details. Encourage your local recycler to start accepting household batteries.
2nd Best: Hold for household hazardous waste collection project.

Alternatives:
■ Use rechargeable batteries.

■ Avoid battery-operated products.

Bleaches
laundry

Examples of toxicants: *sodium hypochlorite, sodium perborate, hydrogen peroxide, oxalic acid.*

Toxicity: *3. Corrosive, Irritant.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; rinse empty jug and dispose of in the garbage or use it for art projects.
2nd Best: If you are unable to use up the bleach and cannot share it with a friend, small amounts can be flushed down an inside drain if your home is connected to a central sewer system. Using chlorine bleach at normal household levels will not impair septic tank function.

> **NEVER** *mix chlorine bleach with ammonia. When combined, these compounds produce poisonous fumes!*

Alternatives:
- You can cut the amount of chlorine bleach used by half if you add 1/2 cup baking soda to top-loading machines or 1/4 cup to front-loaders.
- Use oxygen bleaches, or borax, 1/2 cup per load.
- Hydrogen peroxide, in a standard 3 percent solution is an oxidizing bleach, safe enough to also use as a medicinal disinfectant.
- Try lemon juice to "freshen" clothing.

Chemistry sets

Examples of toxicants: *acids, bases, heavy metals.*

Toxicity: *1-4. Reactive, Corrosive, Ignitable .*

Disposal:
Best: Store in a safe place for a household hazardous waste collection project.

Alternatives:
Choose less hazardous experiment sets, suitable for the intended user's age level. Avoid excessively dangerous chemicals.

Cleaners/Detergents
general household

Examples of toxicants: *ammonia, chlorinated trisodium phosphate, sodium dichloros-triazinetrione, ethoxylated ethyl alcohol, phenols, xylenols, sodium hypochlorite, sodium carbonate, hexachloroethane.*

Toxicity: *2-4. Corrosive.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; rinse and dispose of the empty container in the garbage.
2nd Best: Small amounts of liquid cleaners can be flushed down an inside drain. Small amounts of powder/solid cleaners can be put into a heavy bag (something that won't break open during garbage handling) and disposed of in garbage.
3rd Best: Hold for a household hazardous waste collection project.

Alternatives:

For general cleaning:
- Use baking soda, whiting (powdered chalk, available at many hardware stores and paint stores), or a non-chlorinated scouring powder.
- Combine 1/4 cup soap flakes, 2 teaspoons borax, 1/4 cup whiting, and 1 1/2 cups boiling water, mix together, store in a squeeze bottle.
- Use a mixture of 1/2 cup vinegar and 1 cup - 1 quart of warm water.
- A pumice stick, available at many hardware stores, contains no harsh detergents or other chemicals. It will effectively clean ovens, racks, barbecues, grills, removes rust from garden tools, and handle many other tough cleaning jobs.
- Use soap and water, baking soda, and lemon juice.

> *The average person in the U.S. uses 40.6 pounds of household cleaners each year.*

> **"Mother Earth's All-Purpose Cleaner":**
> *1/2 cup household ammonia*
> *1/2 cup white vinegar*
> *1/2 gallon water*
> *1/4 cup baking soda*
>
> *According to* Mother Earth News, *"cleans everything from carpets to walls and woodwork."*

San Diego Environmental Health Department All-Purpose Cleaner:
1 quart warm water
1 tsp. liquid soap
1 tsp. borax
squeeze of lemon or splash of vinegar

can be used for many cleaning jobs including countertops, floors, walls, rugs, and upholstery.

For washing dishes by hand:
■ Borax is a good grease-cutter and disinfectant.

■ To remove coffee and other stains on dishware, scrub with baking soda.

For automatic-drip coffeemakers:
■ To remove mineral deposits and unclog coffeemakers, pour in one cup of vinegar and run through as you would water, then run through two pots of water to remove vinegar taste. (To keep odor down, you may choose to do this under your kitchen exhaust fan.)

For cleaning windows:
■ Combine 2 tablespoons of vinegar with 1 quart warm water; store the mixture in a spray bottle.

For laundry:
■ Use laundry soap flakes (look for words "pure, natural *soap*", and "contains no phosphates" on the label) instead of detergents. Add 1/2 cup of borax as a water softener if needed.

■ White vinegar is a versatile laundry helper. By adding 1-2 cups (the softer your water, the less you'll need) to the washer's final rinse, you will eliminate soap residue and get your wool and cotton blankets soft and fluffy as new. Vinegar helps break down uric acid, so adding 1 cup to the rinse water is especially good for your baby's clothes.
(**WARNING:** Do not use vinegar if you add chlorine bleach to your rinsewater: it will produce toxic fumes.)

■ To pre-treat shirt collars and oily/greasy spots on clothing, apply any liquid soap, rub with a wet bar of soap, or spritz with "Mother Earth's All-Purpose Cleaner".

■ Reduce the amount of detergent used, and make up the difference with baking soda, for cleaner, softer clothes.

For cleaning floors:
■ *Vinyl floor:* 1/2 cup white vinegar, or 1/4 cup borax with 1 gallon water. Polish with club soda.

■ *Wood floor:* damp mop with mild vegetable oil soap.

■ To remove black heel marks, rub with a paste of baking soda and water.

■ to remove crayon marks, rub them with a damp cloth containing toothpaste. (will not work well on wallpaper or porous surfaces.)

For toilet bowls, etc.:
■ Scrub with a solution of 1/2 cup borax in 1 gallon water.

Cleaners/Polishes
automotive

Examples of toxicants: *alkyl aryl sodium sulfonate, dimethyl ketone, petroleum naphthas.*

Toxicity rating: *3.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; dispose of the empty container in the garbage can.
2nd Best: Hold for a household hazardous waste collection project.

Alternatives:

For car wash:
■ Use 2 tablespoons of mild dish detergent or 1/4 cup soap flakes plus 2 gallons of warm water.

For cleaning tires:
■ Scrub the tires with a brush using mild dish detergent and baking soda.

For cleaning chrome:
■ Apply a paste of baking soda and water to the chrome surface with a sponge; let the paste set for a few minutes, then rinse and wipe dry with a soft cloth. Most glass cleaners work well on chrome.

For windows, windshields, headlights:
■ If glass has a buildup of dead bugs, combine 1/2 cup whiting (powdered chalk, can be purchased at hardware and paint stores), 1/4 cup baking soda, 1 cup fuller's earth (powdered clay or kitty litter) and water to make a paste. Apply the mixture to the glass with a sponge and polish with a dry, lint-free cloth.

■ Combine 2 tablespoons of white vinegar or lemon juice with 3 cups of water; store in a spray bottle.

Degreasers
automotive and garage

Examples of toxicants: *toluene, xylene, methylene chloride, carbon tetrachloride, perchloroethylene.*

Toxicity rating: *3-4.*

Disposal:

Best: Use it up according to label instructions in a well ventilated area; after letting container air out (out-of-doors), dispose of the empty container in garbage. *Do not* contaminate used crankcase oil with solvents: this could change used oil from a readily recyclable resource into a hazardous waste which is an expensive disposal problem.
2nd Best: Give to a service station, auto shop class, or neighbor to use up.
3rd Best: Hold for a household hazardous waste collection project. *NEVER* dispose of down the drain or in garbage.

Alternatives:

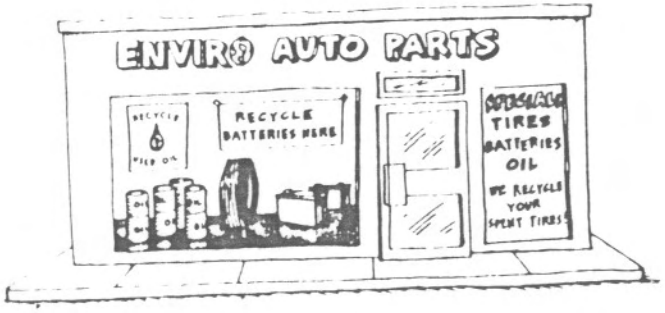
■ Select citrus or vegetable oil based products with " Non-toxic", "Biodegradable", and "Non-Flammable" on the label. These are effective, yet much safer.

For grease spots on the garage floor:

■ Sprinkle kitty litter or cornmeal on the spot; after allowing it to sit for several hours, sweep up and dispose of in the garbage.

For battery terminals:

■ Use a baking soda and water paste to clean away corrosion; after reconnecting the clamps to the terminals, wipe with petroleum jelly to prevent future corrosion.
A well ventilated area is (1) outdoors or (2) a room with the windows open and an operating exhaust fan sized for the room.



Disinfectants

Examples of toxicants: *formaldehyde, phenols, sodium borate, aromatic hydrocarbon solvents, quaternary ammonium.*

Toxicity: *3-4. Irritant, Flammable.*

Disposal:

Best: Use it up according to label instructions or share with someone who will; place empty container in the garbage.
2nd Best: Rinse small amounts of diluted disinfectants down an inside drain if your home is connected to a central sewer system; place empty container in the garbage. If your home has an on-site sewage system, flushing more than a quart of household-strength disinfectant could impair its function, so hold the disinfectant for a household hazardous waste collection project.

Alternatives:

■ A relatively safe household disinfectant can be prepared by dissolving 1 pint of soap flakes into 6 cups of hot water, then adding 1 pint of pine oil. See the *Natural Formula Book for Home and Yard* , Dan Wallace, editor.

■ Use 1/2 cup borax plus 1 gallon of hot water. To inhibit mold or mildew, do not rinse off borax solution.

■ Rubbing alcohol is another excellent, yet relatively safe, disinfectant. Apply with a sponge and allow it to dry. Use in a well-ventilated area.

Drain cleaners

Examples of toxicants: *sodium hypochlorite, trichlorobenzene, lye (sodium or potassium hydroxide).*

Toxicity: *3-4. Corrosive.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; dispose of the empty container in garbage.
2nd Best: Dispose small amounts down an inside drain with lots of water.

Alternatives:

■ An ounce of prevention will save you pounds of trouble. Use a drain strainer to trap food particles and hair, collect grease in cans instead of pouring it down the drain; pour a kettle of boiling water down the drain weekly to melt fat that may be building up.

■ Pour 1/2 cup of borax in the drain and follow with 2 cups boiling water.

■ For a bad clog, remove the trap and clean out the obstruction with a plunger and/or a plumber's snake.

■ Pour 1/2 cup of baking soda, followed by a 1/2 cup of vinegar; cover drain and let sit 15 minutes; rinse with 2 quarts of boiling water. A good preventive measure is to give your drains a weekly baking soda and vinegar treatment: it will also help keep them smelling fresh.

Chemical fertilizers give soil a short-term boost, but extended overuse can leave long-lasting, residues that cause depletion of beneficial microbial life in the soil and have other unanticipated side-effects. If you must use synthetics, also add organic matter and compost.

Fertilizers
chemical

Examples of toxicants: *ammonium sulfate, potassium chloride, ammonium phosphate, nitrogen, pesticides.*

Toxicity: *1-5.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; dispose of the empty bag in garbage.
2nd Best: If the fertilizer does not contain pesticides, put container in a heavy bag, tie, and dispose of in garbage. If the fertilizer contains pesticides, hold for a household hazardous waste collection event.

Alternatives:

■ Grass clippings, dead leaves, and non-meat kitchen wastes are a valuable resource: don't waste them, *compost* them! Use of compost can improve a garden's soil structure and stability, while slowly releasing nutrients essential for good plant growth. For more information, contact your county's WSU Cooperative Extension, King County Recycling and Composting Information Line (296-4466), or Seattle Tilth Association, a compost education group (633-0451).

■ The most important step to a healthy lawn or garden is to determine your soil's nutritional needs. Your county Cooperative Extension program can refer you to labs that can test your soil for any nutrient or mineral deficiencies, and provide other information on how to get your soil into shape.

■ Use peat moss, green sand (glauconite), bone meal, blood meal, kelp-meal, fish-meal, fish-emulsion, and chicken, rabbit, or steer manure in various combinations, with composted leaves and other yard wastes. Natural amendments release nutrients gently over a longer period of time than synthetics.

If you *do* use inorganic fertilizer:

■ Use a slow-release fertilizer with 50% of the nitrogen in insoluble form.

■ Calculate and apply carefully - no more than 1 lb. of nitrogen per 1,000 square feet.

■ Don't apply if heavy rain is predicted.

■ Use caution on slopes, lawn edges, etc., so fertilizer will not wash into a lake or stream. Excessive amounts of organic fertilizers can also pollute water.

Fingernail polish/remover

Examples of toxicants: *acetone, ethyl acetate, phenol, toluene, xylene, formaldehyde resin, tricresyl phosphate, benzene.*

Toxicity: *3-4. Ignitable.*

Disposal:
Best: Use it up according to label instructions in a well ventilated area; dispose of empty, dry bottle in garbage.
2nd Best: Let contents evaporate outside in a place that children and pets cannot reach; when contents have evaporated, replace cap and place in garbage.

Alternative: Leave your nails unpolished.

Gasoline *is probably the most dangerous product commonly found around the house because of its volatility and toxicity. Sparks and flames can ignite gasoline fumes at great distances from the container. Avoid inhaling fumes when fueling your car or lawnmower. If you must store gasoline:*
- *Store no more than 10 gallons, the less around,the safer you'll be.*
- *Use only self-venting containers approved by a nationally recognized testing lab (like UL) and always leave an air space for expansion. In the wrong container, gasoline can be more destructive than dynamite.*
- *Store at ground level, not up on a shelf. In the summer, in a closed garage or shed, temperatures up on shelves can be much higher, and create a dangerous pressure level in the container. Don't store in your car's trunk, and keep out of direct sunlight.*
- *Store by garage or shed door so fumes may be vented outside. Remove some weather stripping from door bottom so fumes can escape & not build up to a dangerous level.* ***Never*** *store gasoline in a basement! Washers, dryers, any motor-driven machinery can be ignition sources. If these are not installed at least 18 inches above ground level, don't store gasoline in the same building. Keep gasoline away from your furnace!*
- *If possible, store in a storage shed separate and well away from any living areas. Avoid inhaling fumes when fueling your car or lawnmower.*

Dumping gasoline and/or oil into sewers, storm drains, or any body of water is illegal in Washington State (RCW 90.48.080).

Gasoline

Examples of toxicants: *petroleum hydrocarbons, tetraethyl lead, benzene.*

Toxicity rating: *3-4. Ignitable, Highly Volatile, Extremely Flammable.*

Disposal:
Best: Use it up as an engine fuel. Old gasoline can often be run through a lawnmower if diluted with fresh gasoline.
2nd Best: If unusable, store the gasoline in a safe place for a household hazardous waste collection project. Storing gasoline in your home storage shed can be extremely dangerous.

Alternatives:
None, if you choose to drive a vehicle. You can limit your use of gasoline by choosing a fuel-efficient vehicle and maintaining it properly.
- Conserve fuel by walking, bicycling, taking the bus, carpooling, more efficient trip planning, and not allowing gasoline to become contaminated or old.
- For cleaning grease or dirty oil from parts, use a nontoxic degreaser.

Handcleaners
mechanic/painter

Examples of toxicants:
Mechanic handcleaners: *petroleum distillates, butylated hydroxytoluene, methionine, ethoxylated alcohols, ethanolamines, acrylic acid, naptha.*

Painter handcleaners: *mineral spirits, propylene glycol, p-chloro-m-xylenol.*

Toxicity: *2-4.*

Disposal
Best: Use it up according to label instructions; wash hands with soap and warm water after each application; dispose of the empty container in garbage.
2nd Best: Give it to a service station or shop class to use.

Alternatives:
- Keep your hands clean by wearing nitrile or other gloves suited to the job.
- Massage hands with a few drops of baby oil, margarine or butter; wipe dry; wash with soap and water.
- Try a lanolin and glycerin-based, nontoxic hand cleaner.

Medicines

Examples of Toxicants: *An extremely varied array of potentially hazardous substances can be found in our medicine cabinets and elsewhere around our homes.*

Precautions:

- Post your poison control center phone number right next to your phone.
- Keep all medicines, over-the-counter or prescription, in the original container, with the name of the drug and recommended dose on the label.
- Discard medicine after expiration date.
- No medicine should be taken on a regular basis without a doctor's advice. Do not exchange with friends or neighbors: a mishap could occur due to mistaken identity of a drug.
- Keep medicines to be kept in a cool, dry place *out* of the bathroom.
- Pregnant women and nursing mothers should not take any drugs, no matter how ordinary, unless approved by their doctor.
- Children should not take medicines intended for adults without doctor's approval. Store all medicines with child-proof cap in place.
- In cases of suspected poisoning, do not induce vomiting unless the poison control center tells you to do so. Some substances can cause severe damage if they come back up.

Disposal:

- Store in child-proof area, turn in at a household waste collection project.

Children are more susceptible to chemical poisoning because of their lower body weights and still-developing nervous systems.

Moss killer

Examples of toxicants: *Copper sulfate, zinc chloride, sodium pentachlorophenate, ammonium sulfate, zinc sulfate, ferric and ferrous sulfates.*

Toxicity Rating: *3-4. Corrosive. These chemicals are toxic to other plants and mammals, including people. Use a sprinkler can or tank sprayer, not equipment or techniques that produces an ultra-fine mist that drifts off-target. Read and follow directions.*

Disposal:

Best: Use them up according to label directions. Save products for a household hazardous waste event.

Alternatives

Structural demossing

- Zinc-galvanized or copper flashings and ridges will be effective for moss control to about 10-15 feet down from the ridge on most roofs.
- Normal corrosion from bare copper wires stretched every 10 feet horizontal will provide some moss control.

Lawn demossing

- Generally, presence of moss may be caused by low soil fertility, too much shade, frequent light watering, accumulation of thatch or mats of old grass clippings, or any combination of these. Unless the basic problems are corrected, any attempt at control will be incomplete and/or temporary.
- Infrequent and heavy watering encourages deeper grass rooting and will help dry out moss.
- Thatch your lawn and rake out the moss.
- Regular fertilizing will help develop healthier turf. Some lawn fertilizers contain a moss control agent.

Mothballs/Moth crystals

Examples of toxicants: *naphthalene, p-dichlorobenzene.*

Toxicity: *3-4. Poisonings have been reported after dressing infants in clothing that had been stored with naphthalene. Never use mothballs or flakes as air fresheners.*

Disposal:

Best: Use them up according to label instructions in a seldom used room; safely store any remaining mothballs/moth crystals in a heavy bag for a household hazardous waste collection project.

Alternatives:

■ Periodically shake out woolens. Discard or donate woolens, leathers and feather products that are no longer used to avoid contaminating newer material.

■ Wash clothing and clean furniture from yard sales thoroughly before bringing into your house: they may contain moth eggs.

■ Before storing, dryclean woolens and double-wrap in tightly sealed plastic bags .

■ Store seasonal woolens in very tight containers when not in use.

Motor oil
(Used)

Examples of toxicants: *lead, zinc, petroleum hydrocarbons, polyaromatic hydrocarbons*

Toxicity: *3-4. Ignitable.*

Disposal:

Take to a nearby oil recycling station or call the Recycling Hotline (1-800-RECYCLE) for the station closest to you. Recycle used oil separate from other liquids. Do not mix carburetor cleaner, solvents, antifreeze, degreaser or gasoline with used motor oil. Turn the oil filter upside down and drain remaining oil overnight. Wrap the drained filter in newspaper and dispose of in garbage.

■ **Never** pour motor oil on the ground, in a ditch, down a storm drain, or down an inside drain.

■ **Never use** absorbent-containing "easy-change" boxes to catch your crankcase oil. Since these cannot be recycled, the oil is wasted by disposal in a landfill. Used oil there may threaten our ground water supply.

Alternatives:

■ Have your oil changed at a service station that has its oil recycled.

■ Ask for rerefined oil. This will help improve the market for used oil, advance oil recycling efforts, help decrease reliance on foreign suppliers, and slow the rate of resource depletion.

A Few Facts About Motor Oil:

■ *Waste motor oil dumped down a storm drain or washed off a driveway into a ditch can flow into the nearest stream, lake, river, or directly into Puget Sound, damaging water quality and wildlife.*

■ *One pint of motor oil can produce a slick of approximately one acre on surface water.*

■ *One quart of motor oil can foul the taste of 250,000 gallons of water - more water than 30 people drink in their lifetimes!*

■ *Less than 300 parts of oil per million parts of water can ruin the taste of fish, and only one PPM will exposed Dungeness crab larvae.*

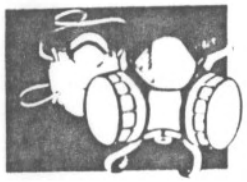
The U.S.Environmental Protection Agency warns those who handle motor oil to minimize skin contact with used oil. Used oil has been found to cause cancer in laboratory animals.

Safety Equipment

GOGGLES

Paints & Solvents	Solvents (such as paint thinner, paint and varnish removers)
Garden	Pesticides
Hobbies	Photographic solutions
	Particulates from sanding or grinding
	Swimming Pool Chemicals
	Welding (requires special goggles)
Cleaners	Ammonia
	Aluminum cleaners
	Disinfectants
	Drain cleaner and openers
	Oven cleaners
	Septic tank cleaners

RESPIRATORS



PRODUCT	CARTRIDGE	FILTER
Paint and Solvents		
Aerosol spray paints	organic vapor*	& paint spray
Lacquer thinner	organic vapor	
Paint and varnish removers	organic vapor	
Turpentine	organic vapor	
Varnishes	organic vapor	
Garden		
Pesticides, dust		pesticide
Pesticides, spray	pesticide	& pesticide
Flea Powder		pesticide
Hobbies		
Dusts (from wood, stone pigment, clay, fiber, shell, and bone)		dust or dust and mist
Photography solvents	organic vapor	
Printmaking solvents	organic vapor	
Soldering, welding	high efficiency	& dust, mist, & fumes
Cleaners		
Aluminum cleaner (with hydrofluoric acid)	acid gas	
Ammonia &amine gas	ammonia	
Lye	organic vapor	
Oven cleaner	organic vapor	
Septic tank cleaner	organic vapor	

* Organic vapor cartridges remove solvent vapors.

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GLOVES

PRODUCT	TYPE OF GLOVE 1	2	3	4	5	6	7
Paints and Solvents							
Lacquer thinner					■		
Paints (oil-based)			■			■	
Paints (water-based) acrylics, latex, lucite	■	■	■	■	■	■	■
Paint thinner & mineral spirits		■	■		■	■	
Paint and varnish remover						■	
Tar (asphalt & roofing)		■	■		■	■	
Turpentine		■	■		■	■	
Wood filler and putty					■	■	
Wood stains & varnish		■	■		■	■	
Garden							
Fertilizer	■	■	■	■	■	■	■
Pesticides: weed killers	■	■				■	■
Pesticides: animal killers		■				■	
Automotive							
Battery acid		■	■	■			
Car wax					■	■	
Gasoline, Motor oil, and Transmission fluid					■	■	■
Kerosene &diesel fuel		■	■		■	■	
Windshield wiper fluid	■	■	■	■	■	■	■
Hobbies							
Adhesives &cements					■	■	
Dyes, fiber reactive				■	■		
Photographic solutions (Black &white developers,stop baths, and fix baths)	■	■				■	■
Swimming Pool Chemicals		■	■	■			
Cleaners							
Acetone (ketones)	■	■	■	■			
All-purpose and Ammonia-based cleaners	■	■	■	■	■	■	■
Aluminum cleaner (with hydroflouric acid)		■	■	■			
Ammonia	■	■	■	■	■	■	■
Bleach		■				■	■
Degreasing solutions						■	■
Detergents	■	■	■	■	■	■	■
Disinfectants & Deodorizers	■	■	■	■	■	■	■
Drain cleaners & openers		■	■		■	■	
Furniture polish		■	■		■	■	
Isopropyl alcohol	■	■	■	■	■	■	■
Lye		■	■		■	■	
Oven cleaner		■	■		■	■	
Septic tank cleaner		■	■		■	■	
Shoe polish						■	
Spot removers						■	
Toilet bowl cleaner	■	■				■	■
Upholstery, rug, and carpet cleaners		■	■		■	■	

Glove types:
1. Natural Rubber or Latex glove
2. Neoprene Rubber glove
3. Latex/Neoprene glove
4. Butyl Rubber glove
5. Buna-N or NBR Rubber glove
6. Nitrile glove
7. Polyvinyl chloride glove

Oven cleaners

Examples of toxicants: *methylene chloride, petroleum distillates, glycol ethers, sodium hydroxide (lye).*

Toxicity: *2-4. Caustic.*

Disposal:

Best: Use it up following label directions or share with someone who will. Dispose of empty container in garbage. If the oven cleaner is in an aerosol can, dispel any remaining propellants (out-of-doors) and dispose of the empty can in garbage.
2nd Best: Hold for a household hazardous waste collection project.

Alternatives:

■ **Prevention:** Put a sheet of aluminum foil on the oven floor, underneath, but not touching, the heating element.

■ Pour lots of salt on fresh spills in the oven and scrape them off after the oven cools - before they bake hard.

■ Mix 3 tbsp. of washing soda with 1 quart warm water, or mix 2 tablespoons liquid soap and 2 teaspoons borax with warm water. Spray on, wait 20 minutes, then clean. For tough stains, scrub with very fine steel wool pads and baking soda.

■ Use a baking soda, salt, and water paste. Consumer's Union chemists have declared a commercial baking-soda based oven cleaner non-toxic: look for it.

■ Mix 2 tablespoons liquid soap, 2 teaspoons borax, and warm water; leave on oven for 20 minutes; scrub with steel wool and nonchlorine scouring powder.

■ Rub very dirty areas with a stick of pumice.

■ Use an oven cleaner that does not contain lye.

Paint
oil based/stain/spray

Examples of toxicants: *kerosene, lead, mercury, titanium dioxide, mineral spirits, toluene, xylene, methylene chloride, lithopone.*

Toxicity: *3-4. Ignitable, Carcinogenic.*

Disposal:

Best: If it does not contain lead, use it up in a well ventilated area or give to someone who will (such as a theater, sign-maker, or nonprofit group). After letting residual paint dry up outside, leave the lid off so your hauler can see the container is empty and dry, and dispose of in garbage.
2nd Best or Best if Contains Lead: Hold for a household hazardous waste collection event, or take it to a designated household hazardous waste collection and storage site. (Phone 1-800-RECYCLE for information)

Alternatives:

■ Choose water-based over oil-based paint: latex paints are free of the flammable and toxic solvents found in oil-based products.

■ Determine the amount of paint that you need for the job and buy only that amount.

Look for these key words on the paint can to help you determine whether the paint is water-based or oil-based:
■ **water-based:** *"clean up with soap and water", "latex"*

■ **oil-based:** *"Clean up with mineral spirits", "contains petroleum distillates", "combustible: keep away from heat and flame", "harmful or fatal if swallowed"*

Find your Poison Control Center's telephone number and post it near your phone for use in an emergency.

Paint
water-based

Examples of toxicants: *mercury, lead, pentachlorophenol, chlorinated phenols, ethylene glycol, alkyd resins.*

Toxicity: *2. (if it contains lead or pentachlorophenol, 3-4)*

Disposal:

Best: If the paint does not contain lead (generally if manufactured since 1973), use it up or share with someone who will (such as a theater or nonprofit group). After letting residual paint dry up outdoors, leave lid off and dispose of in garbage. (Air drying can take a long time in wet, cold weather -if possible, wait until summer.)
2nd Best: If the paint does not contain lead, paint it out on cardboard, let it evaporate in the can, or pour it out in a large box lined with plastic and containing shredded newspaper. After the paint is hard, wrap the container and box in newspaper and dispose of in garbage.
3rd Best or Best if Contains Lead: Hold for a household hazardous waste collection event, or drop off at a fixed facility for household hazardous waste collection.

Alternatives:

- Buy only what you need and use it up while it is still good.

- Use whitewash (a combination of hydrated lime, water, and salt, which lacks heavy metal pigments, alkyd resins, and other chemicals common in paint) for fences, barns, basements, and outbuildings. Use a dustmask when mixing.

a 1987 study, sponsored by the U.S.Environmental Protection Agency, found that 27 percent to 43 percent of all house-hold hazardous wastes disposed of in landfills were paint products. Lead content is not always indicated on the label. A good rule of thumb is that the older the paint, the higher the probable content of this toxic metal.

Paint strippers

Examples of toxicants: *methylene chloride, benzene, phenols, toluene, acetone, carbon tetrachloride, methanol. Strong alkali-based products are also available.*

Toxicity: *3-4. Wear proper protective gear. Don't use anything containing these toxicants if you are pregnant. Ignitable. Alkali-based are corrosive.*

Disposal:

Best: Read the label instructions before starting the job. Use it up in a well ventilated area or share with someone who will. Let the empty container air out (out-of-doors) and wrap scrapings in several layers of newspaper before disposing of them in the garbage can.
2nd Best: Hold for a household hazardous waste collection project, or bring it to a designated household hazardous waste collection and storage site.

Alternatives:

- Some old paints contain lead. Taking precautions against breathing lead-bearing dust, use a hook scraper, push scraper, rasp, abrasive block, heat gun or sandpaper to sand off the paint.

- Safer strippers, containing less toxic ingredients, and bearing a "caution" advisory are available.

Methylene chloride *is suspected of causing cancer in humans. It also aggravates heart conditions. The Consumer Product Safety Commission requires that products containing this chemical carry a statement of risk on the label. Read the label carefully before selecting:*
- *degreasers and cleaning fluids*
- *paint strippers, thinners, and adhesive removers*
- *stain removers*
- *solvents*
- *household adhesives and glues*
- *spray shoe polish and water repellants*
- *glass frosting and artificial snow*
- *spray paints and primers*
- *wood stains and varnishes*
- *cleaning fluids*

Avoid using anything containing methylene chloride around children. Follow the safety tips on page IV.

Paint thinners

Examples of toxicants: *toluene, xylene, acetone, naphthalene, methanol.*

Toxicity: *2-3. Do not use these products if you are pregnant. Ignitable.*

Disposal:
Best: Let paint particles settle out, then filter off the clear thinner and reuse. Let the sludge dry out; wrap in newspaper; and dispose of in garbage.

Let very small amounts (less than 1 cup) evaporate out-of-doors in a protected area. Larger amounts should be held for a household hazardous waste collection project.

Alternatives:
- Avoid paint thinners by choosing water-based paints.

Always follow label directions.

Home permanent wave solution
hairstyling

Examples of toxicants: *ammonium thioglycolate, amines, ammonium lauryl sulfate, vinyl acetate, diethylenetriamine, phenacetin.*

Toxicity: *3-5.*

Disposal:
Save for a household waste collection project or turn in at a designated collection site.

For a few pints, pour down drain. For larger quantities, contact your water treatment plant first.

Alternatives:
- Use ammonia-free hair styling products.

Be wary of so-called "inert" ingredients in pesticide formulations. Highly toxic chemicals such as benzene, carbon tetrachloride, formaldehyde, methylene chloride, and pentachlorophenol are sometimes among those "inerts."

Pesticides

Do Not Use! These pesticides are banned from household use: *Aldrin, Chlordane, Cyanides, DBCP, DDT, Dieldrin, Heptachlor, Kepone, Lindane, Mirex, Silvex, 2,4,5-T, Toxaphene, Arsenates, Sodium Arsenite, Creosote, Pentachlorophenol (PCP).*

Most Commonly Used Pesticides: *Resmethrin, Pyrethrin, Carbaryl, Diazinon, Baygon, Malathion, Metaldehyde, Glyphosate, Benomyl, Captan, Chlorpyrifos, 2,4-D.*

Toxicity: *For most commonly used pesticides: 3-5. (This rating system is consistent with the Gosselin system used throughout this guide. (See inside front cover) The United States EPA uses a different system in which pesticide toxicity ratings range from 1-4, with 4 being the least toxic.)*

Disposal: Even small amounts of carelessly discarded pesticides can kill fish, birds, or other animals.
Best: If it is not a banned product, use it up according to label instructions. Cut open the empty paper or cardboard container and shake out contents into the spray tank. Use extra caution and a respirator to avoid breathing the pesticide dust. Discard completely empty box into garbage.

Triple-rinse plastic and glass containers with water. Containers with plastic or foil liners should also be rinsed. Add all rinsate to the sprayer and spray it on the target area in a manner consistent with the pesticide label directions. Wrap empty container in newspaper and discard in garbage.
Best if a Banned Product: Turn in at a designated household hazardous waste collection and storage site or hold for a collection event.

Alternatives:
In general, keep home and yard clear of food sources and decaying plants. Plug holes where pests enter your home. Keep your plants healthy by fertilizing (organically), cultivating, and watering them. Rotate plants in your garden plot. Pick off insects by hand or dislodge them with water spray.

Take a little time and observe what's going on in your garden. Identify the pest and learn its habits. Decide what level of damage is acceptable to you and monitor pests carefully. Remember that outdoors, a certain population of what we call pests is natural, and chemicals kill good insects as well as "bad" ones. Use physical control methods first and chemicals last: try picking caterpillars off by hand, or use a flyswatter around the house: do not reach for the spray can first. When pesticides must be used, mix only enough to treat the plants affected. Small, half-gallon sprayers or trigger sprayers are often all the homeowner needs.

If you require the services of a pest control business, select one that specializes in least-toxic techniques.

Washington State University Cooperative Extension offices and the Washington Toxics Coalition have information available on Integrated Pest Management (IPM), an approach that focuses on prevention by considering the ecosystem as a whole.

For ants (nonstructural pests)

■ Block point of entry. Kill ants in house with soapy water.

■ Clean up all sources of food. Keep in ant-proof containers.

■ Use commercial sticky barriers to block ants.

■ Sprinkle boric acid and/or other approved desiccating dusts on trails and where ants are found in nooks and crannies.

For carpenter ants and termites:

■ Prevent moist wood by adequate home maintenance. Repair leaky gutters. Place plastic sheeting on ground surface of crawl space as a vapor barrier. Improve ventilation of damp areas.

■ If building in a known problem area, consider using non-wood building material.

■ Remove potential sources of ant nests and access close to house: remove decaying stumps and wood debris, eliminate wood/earth contact of house structure.

■ Check firewood carefully for insects before bringing it inside. Monitor for insect activity as it warms up.

For caterpillar pests (loopers, leafrollers, and cutworms):

■ Remove from plants by hand. Many caterpillars hide during the day and feed only at night. Night hunting with a flashlight, with physical removal and destruction, may prove useful.

■ Apply Bacillus thuringiensis (a commercially available bacteria) to them during warm weather when they're actively feeding. Most effective when these pests are small.

■ Apply a nuclear polyhedral virus like Elcar - a commercially available virus specific for corn earworm.

■ Encourage natural predators: build birdhouses and set up birdbaths to attract swallows and other allies.

■ Accept low levels of damage. Is perfect fruit necessary?

■ Some insects can be washed from plants with a strong hosing.

■ Gently sponge or mist/spray leaves with soapy water. There are commercially available low-toxicity insecticidal soaps on the market. This method can also be effective on mites, if done correctly.

For fleas on pets: follow these steps:

■ 1. If possible, establish one sleeping area for your pet.

■ 2. Vacuum at least weekly all areas where pets have access and dispose of vacuum bag. Wash bedding materials.

■ 3. Restrict pet access from bedrooms, attics, basements, and hard-to-clean areas.

■ 4. Bathe pet with shampoo or use flea comb regularly.

■ Use flea soap or a citrus extract product (without other insecticides) in conjunction with steps 1-4 to kill fleas in house if problem becomes severe.

■ Growth regulators (like methoprene or phenoxycarb) prevent egg and larvae from developing, but are nearly nontoxic to mammals. Formulations are readily available at pet stores.

■ If you *must* use insecticidal sprays, the safest is pyrethrin, resmethrin, or another low-toxicity pesticide.

For insects on plants:

■ Use resistant plant varieties wherever possible. Ask your Cooperative Extension Service for advice.

■ Wash insects from outdoor plants with a strong hosing, preferably in the morning.

■ Mix up a solution of liquid soap and water in a pump-spray bottle at the ratio of 2 1/2 teaspoons per quart. Spray infested leaves with soapy water, then rinse off with plain water after a few minutes.

■ Use floating row covers such as Reemay or Agronet as a preventive measure against root maggots and similar pests. These are cheesecloth-like fabrics that act as a barrier to egg-laying adults.

■ Place tobacco on potted plant soil. This helps control indoor infestations of a variety of pests that hatch from eggs deposited when plants are outside.

■ Place a large handful of pipe or cigarette tobacco in 4 quarts of warm water. Let stand 24 hours. Dilute and apply with a spray bottle. Nicotine is deadly to mammals in high concentration: use *caution* when handling.

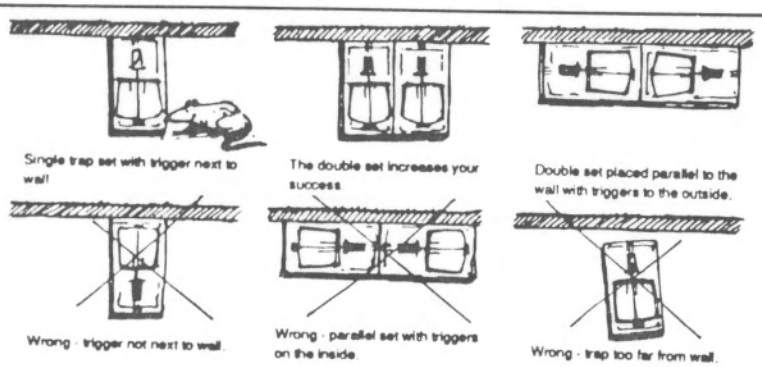
> *"When you kill a beneficial insect, you inherit its work."*
> *-Carl Huffaker.*

For mice and rats:

■ Sanitation is crucial: litter encourages rodents. Use garbage cans with tight-fitting lids. Clean up food scraps. Store food in metal containers rodents cannot readily gnaw through.

■ Glue boards or sticky traps are gaining in popularity, especially where toxicants are not desirable. They are most effective in dry locations which are free of dirt and dust.

■ Use traps baited with peanut butter with a oatmeal and honey mixed in.



Mice and rats tend to have established "runways" along wall edges. For maximum trap effectiveness, place the bait-end of the trap about 1/4 inch away from the wall. To reduce chances of the rodent escaping the trap and becoming trap-shy, allow the animal to take the bait at least once prior to setting the trigger.

■ Baits containing warfarin are lethal to rodents, yet relatively safe for household use.

For moles and gophers:

■ Moles are voracious insect-eaters that daily consume their weight in cutworms, wireworms, sowbugs, other garden pests, and earthworms. Unlike gophers, who eat roots of our garden crops, and can kill young trees, moles are beneficial for the most part. Do you really want to do them in?

■ One widespread folk remedy, unfortunately not very well-founded, is to place rolled-up sticks of fruit gum in mole tunnels. Wear gloves to mask your scent when you unwrap the gum. Moles love it, so the story goes, but it totally obstructs their digestive tract.

■ Scissor traps are the only effective means of mole control, according to WSU Cooperative Extension. Two types are available. The Swedish type are made of aluminum and are easier to set.

■ For gophers, use Macabee-type spring traps or boxtraps, available through most hardware and farm supply stores. Set in burrow runways.

■ WSU Cooperative Extension bulletin #1028 discusses mole control in detail. For a more information on gopher control, see extension bulletin #1404.

***Pest Control: the Good News!** Losing the battle with bugs? WSU Cooperative Extension has offices in every county seat in our state. For some of the best information available, check your county government listings and give them a call. Washington Toxics Coalition in Seattle also has a wealth of useful information and was very helpful in preparing this section.*

For mosquitoes:

■ Clean up or remove potential breeding sites and refuse like tires, cans, crumpled up plastic mulch; anything that can hold water for larvae.

■ Fix leaky plumbing that may be creating pools in your home's crawl space or puddles near your home.

■ Use well-fitting screens on windows and doors to prevent mosquitoes from entering your home.

■ Bacterial formulations such as Bactimos are selectively effective against certain mosquito species.

■ Citronella-based insect repellants are a good choice for infants, small children, those allergic to DEET, and pets. It is a natural plant extract.

For cockroaches:

■ Cleanliness is essential. Clean up food particles and avoid leaving your pet's food out for extended periods. Remove harborage like newspapers, garbage bags, and other clutter that roaches love to hide under.

■ Check over appliances well before you bring them into your home. You could bring in an infestation!

■ Plug or caulk cracks and holes.

■ Roach traps and "hotels" are safe and effective.

■ Silica dust makes a good repellant, and can kill them by dessication.

■ Sprinkle a registered boric acid product under appliances and in nooks and crannies in affected area. (Boric acid is moderately toxic. Place it only where inaccessible to children or pets.)

For slugs and snails:

■ Garter snakes, and some species of ground beetles, salamanders, and ducks all feed on snails and slugs.

■ Place bowls of beer around the garden. Slugs will crawl up the side to get to the beer. The beer will anesthetize the slug, which then drowns.

■ If you garden in raised beds, tack copper strips, roofing felt or other repellant material to the outer frame.

■ Clean up area around garden to remove hiding places and food sources. Keep grass and weeds that could be used to get around barriers cut back. Remove bricks, boards, or pots slugs can hide under.

■ Using tweezers, wooden chopsticks, or a skewering device, "hand pick" at night or when cool or wet. Collect in a jar or can, then flush away, or otherwise dispose. Pay kids a "slug bounty" to pick them up.

■ Instead of metaldehyde (toxic to mammals), try sprinkling sawdust, diatomaceous earth (available at garden or landscaping shops), ashes, or lime around affected area. This makes an irritating, drying surface that slugs find unattractive.

■ If you use slug bait, put into pet- or child-proof container or under boards. (metaldehyde is toxic to small mammals.)

For weeds:

■ Pull weeds by hand when they first begin to appear. Be sure to get roots and all! Hire youth and get them involved.

■ Grow a healthy lawn to out-compete weeds.

■ Cover bare areas with ground covers. **Read the label**. Some herbicides should never be used in vegetable gardens.

■ Cinnabar moth caterpillars, senecio seed flies, and flea beetles are natural controls of the weedy noxious and toxic invader, the tansy ragwort. Learn to recognize these allies: do not kill them!

■ Cover garden with garden fabric, plastic, or mulch in the fall to prevent weed germination. Alfalfa hay makes a good mulch.

If you feel you must use a commercial pesticide, wait until it's not windy or rainy. Do not overwater after use as the pesticide can run off with the excess water into a nearby stream or storm drain. Apply herbicides directly to individual weeds: do not broadcast over a wide area. Do not use herbicides for preventive or continuing maintenance. Pesticides can kill birds, honeybees, pets, fish, and other "non-target" species.

Photographic chemicals

Examples of toxicants: *boric acid, sodium thiocyanate, ammonium hydroxide, trichloroethane, silver, hydrochloric acid.*

Toxicity: *2-4 (intensifiers and reducers can contain materials with toxicity ratings of 6). Corrosive.*

Disposal: If your home is connected to a sewage treatment plant, check with the plant manager for instructions. In some cases, small amounts of the liquid from black and white film developing can be flushed down the toilet or sink if the home is connected to a central sewage treatment plant. If your home has a septic tank or you are developing color film, hold your waste for a household hazardous waste collection event.

For information regarding business-related waste disposal, phone the hazardous substance information line at 1-800-733-7585.

Alternatives:

None, although equipment is commercially available for reclaiming the silver from photographic chemicals. Call 1-800-RECYCLE for details.

Polishes/Waxes
wood furniture and floors

Examples of toxicants: *petroleum distillates, synthetic polymers, silicones, trichloroethane, phenol, naphthas, mineral spirits.*

Toxicity: *3. Ignitable.*

Disposal:

Best: Use it up according to label instructions in a well ventilated area or share with someone who will; dispose of the empty container in garbage.
2nd Best: Hold for a household hazardous waste collection project.

Alternatives:

■ For unfinished wood, apply mineral oil sparingly with a soft cloth.

■ Polish with a mixture of 3 parts olive oil and 1 part white vinegar *or* a mixture of 1 part lemon oil to 2 parts vegetable, olive, or mineral oil. Leaves furniture looking and smelling good.

■ Rub toothpaste on wood furniture to remove water marks; polish with a soft cloth. (Non-gel toothpaste can also be used to plug nailholes prior to painting.)

■ For scratches, mix equal parts of lemon juice and salad oil. Rub into scratches with a soft cloth until they disappear.

Polishes
metal

Examples of toxicants: *tripolyphosphate, oxalic acid, phenolic derivatives, sulfuric acid, phosphoric acid, thiourea, naphtha, petroleum distillates, denatured alcohol.*

Toxicity rating: *3-4. Corrosive, Combustible.*

Disposal:
Best: Use it up according to label instructions or share with someone who will; rinse out or evaporate empty container, flush rinsate down the drain, and recycle the can.
2nd Best: Very small amounts (less than 1 cup) of polish containing phosphoric acid can be washed down a sink or toilet with water; rinse the empty container and dispose of it in garbage. In general, hold unused metal polishes for a household hazardous waste collection project.

Alternatives:

For silver:
- Place a sheet of aluminum foil in the bottom of a pan, add 2-3 inches of water, 1 teaspoon baking soda, 1 teaspoon salt, and bring to a boil. Add silver pieces, boil 2-3 minutes, making sure water covers all silver. Remove silver, rinse, dry, then buff with a soft cloth.

For watch crystals:
- Toothpaste can be used as a watch crystal scratch-remover and polish.

For copper and brass:
- Make a paste of lemon juice and salt, rub with a soft cloth, rinse with water and dry.
- To retard tarnish, rub brass with a cloth moistened with olive oil after polishing.

For chrome:
- Wipe with a soft cloth dipped in apple cider vinegar; rinse with water and dry.
- To make chrome fixtures shine brightly, rub them with newspaper after they have been wet. Wearing gloves will help you keep the printer's ink off your hands.

For stainless steel:
- Use baking soda, olive oil, or mineral oil for shining.
- To clean and polish, moisten cloth with vinegar and wipe clean.

Polishes
shoe

Examples of toxicants: *trichloroethylene, methylene chloride, nitrobenzene, mineral spirits, silicones.*

Toxicity: *2-4. Ignitable.*

Disposal:
Best: Use it up according to label instructions in a well-ventilated area or share with someone who will; let the empty container air out before disposing of it in the garbage.
2nd Best: Hold for a household hazardous waste collection day.

Alternatives:
- Avoid products containing the toxicants listed above.
- Apply olive oil, beeswax, or cold-pressed nut oil to leather and buff with a chamois cloth to shine.
- A dab of petroleum jelly rubbed into patent leather gives it a glistening shine and prevents cracking in the winter.

Pool/Spa chemicals

Examples of toxicants: *chlorine, bromine, soda ash, hydrochloric acid, muriatic acid, calcium chloride, copper-based algicides, polyphosphonate.*

Toxicity: *2-4. Caustic.*

Disposal:
Best: Use it up according to directions; put empty container in garbage.
2nd Best: If your home is connected to a central sewer system, call your sewage treatment plant operator too see if small amounts can be flushed down an inside drain with liberal amounts of water. If the home has a septic tank, hold for a household hazardous waste collection project.

Alternatives:
- Use these chemicals sparingly.

Be cautious using old products as they may contain chemicals that are now banned.

Rug/Carpet cleaners

Examples of toxicants: *butyl cellusolve, ethylene glycol, monobutyl ether.*

Toxicity rating: *2-4.*

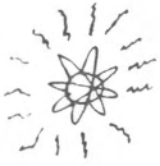
Disposal:
Best: Use it up according to label instructions or share with someone who will; dispose of the empty container in garbage.
2nd Best: Hold for a household hazardous waste collection project.

Alternatives:

For general cleaning:
- Use a soap-based, non-aerosol rug shampoo; vacuum when dry.

For spills:
- Cotton towels and rags are more absorbent than synthetic fabrics.
- Pour club soda, clear water, or soapy water immediately onto spill.
- Pour a thick layer of salt on red wine spills: get as much salt into contact with the wine as you can to absorb it, then sponge up salt after it has absorbed the spill.

To neutralize odors:
- Sprinkle baking soda liberally over affected area, let sit overnight, then vacuum.



Smoke detectors
ionizing type

Hazard: Radioactive material is contained in some battery-powered, ionization-type smoke detectors.

Disposal:
Best: Send back to manufacturer.
2nd Best: Hold for a household hazardous waste collection project.

Alternatives:
- Choose nonionizing, photoelectric-type detectors.

Soot remover/Creosote destroyer

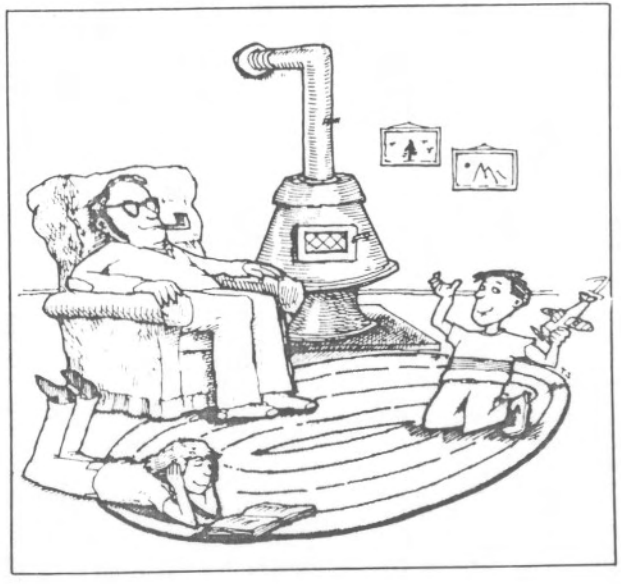
Toxicant: *Cupric chloride*

Toxicity: *4. Irritant.*

Disposal:
Best: Use it up according to label directions. Rinse out empty container, flush rinsate, recycle the can.
2nd Best: Bring it to a household hazardous waste collection project.

Alternatives:

Prevention:
- Burn dry, clean wood. Firewood should be seasoned (dried) at least 6-8 months before use.
- A hot fire will burn the wood more completely and cleanly.
- Watch your chimney. If you can see smoke, the air supply to your fire should be increased.
- Do not damper too far. Smoldering fires cause the most soot and creosote buildup, as well as pollute our air.
- Follow operating instructions for your wood stove.
- Use a flue brush.



Stain/Spot removers

Examples of toxicants: *sodium hypochlorite, perchloroethylene, naphtha, petroleum distillates, isoamyl acetate.*

Toxicity: *2-4. Ignitable.*

Disposal:
Best: Use it up according to label instructions in a well ventilated area or share with someone who will; let container air out (out-of-doors) before disposing in garbage.
2nd Best: Hold for a household hazardous waste collection event.

Alternatives:
The following are relatively safe options for removal of tough stains. The main idea is to treat the fabric right after the spill, before the stain has set. See Additional Resources list for a helpful reference.

■ Some stain removers and treatments will damage certain fabrics. Before you use any stain remover, test it on some unexposed portion of the article to make sure it won't harm the fabric.

■ Rub the stain with a cornstarch paste; brush off when dry.

■ Apply a paste of detergent, soap, or baking soda and water to the stain; allow to penetrate a few minutes before rubbing clean and rinsing.

■ Borax: Dissolve 1/4 cup in 3 cups of cold water. Sponge it on and let it dry, or soak fabric in the solution prior to washing it in soap and cold water.

Wet Spotter", used to remove many kinds of stains:
1 part glycerin
1 part liquid dishwashing detergent
8 parts water

store in a plastic squeeze bottle, shake well before each use.

■ Hydrogen peroxide or rubbing alcohol. Removes blood, chocolate, and other stains. Safe for all fibers, but dyed fabrics should be tested for color-fastness.

■ White vinegar: Safe for all fibers, but changes color of some dyes. Good on cola, perspiration, pet stains, and other nonoily stains, and for de-yellowing silk or wool. Also useful in removing grease stains from suede.

■ "Tamping".Use the type of brush used for applying shoe polish, with nylon bristles, cut square so they're all the same length.Start with a new brush and use it only for this purpose. The tamping action is similar to driving a tack with a small hammer: raising the brush 2-3 inches above the fabric and tapping it down lightly and squarely, without bending the bristles. The amount of tamping a fabric can take without damage depends upon how tightly woven it is.

■ Glycerin. Used to prepare "wet spotter", also good in removing ballpoint ink stains.

■ Use a professional dry cleaner for stubborn stains.

■ For more on stain removal, contact your WSU Cooperative Extension office, home economics section.

For mildew:
■ Use vinegar.

For stains on light wood:
■ Use toothpaste for grease and oil stains:

■ Rub french chalk or white chalk into the stain .

For rust:
■ Saturate with lemon juice and rub with salt. If possible, dry in direct sunlight, then wash.

For stuck-on chewing gum:
■ Rub with ice. Gum will flake off.

For ink stains:
■ "Tamp" with lukewarm glycerin.

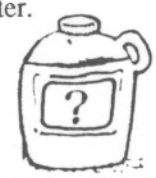
■ Make a paste of cream of tartar and rub on stain. Let paste dry, then brush off. Repeat this treatment if the stain is not entirely lifted.

Thermometer
medical

Example of toxicant: *metallic mercury*

Disposal: in case of breakage, use a wooden toothpick or piece of cardboard to push mercury droplets together and into a covered container. Do not vacuum: that will tend to break up the mercury into tiny droplets and scatter them. After the mercury has been collected in a well-sealed, secure container, hold for a household hazardous waste collection project.

Alternative:
Choose a flex-tape, electronic, or other non-mercury thermometer.



Toilet bowl cleaners

Examples of toxicants: *sodium hydroxide, sodium acid sulfate, sodium acid oxalate, hydrochloric acid, chlorinated phenols*

Toxicity: *3-4. Corrosive.*

Disposal:
Best: Use it up according to directions or share with someone who will; dispose of the empty container in garbage.
2nd Best: Flush small amounts down the toilet with plenty of water.

Alternatives:
- Clean often with baking soda or vinegar.
- Make a paste of borax and lemon juice; spread the paste on the toilet and let set for at least 2 hours; scrub with a stiff brush; flush.
- Use a non-chlorinated scouring powder.

Manufacturers of consumer products are not required to tell the public whether or not their products contain chemicals associated with long-term health effects.

Transmission fluid

Example of toxicants: *petroleum distillates*

Toxicity: *2. Ignitable.*

Disposal:
Take it in to be recycled. Call the Recycling Hotline (1-800-RECYCLE) for the recycling station nearest you.

Alternative:
None if you drive an automobile.

Tub and Tile cleaner

Examples of toxicants: *phenol, glycol ethers, phosphoric acid*

Toxicity: *2-3.*

Disposal:
Best: Use up according to label instructions, with good ventilation or share it with someone who will use it safely. Dispose of the empty container in garbage.
2nd Best: Small amounts can be washed down an inside drain - use lots of water. If you have more than a small quantity of unusable product, hold for a household hazardous waste collection project.

Alternatives:
- Wipe up with full-strength vinegar-dampened sponge, then use baking soda as a scouring powder. Rub with a damp sponge, then rinse thoroughly with clean water.

For cleaning grout:
- Combine 3 cups of baking soda and 1 cup warm water; scrub into the grout and rinse well with clean water.
- Spritz or pour on vinegar, wipe away after it bubbles awhile.

For removing stains from porcelain:
Make a paste using 3 tablespoons borax and 1 tablespoon of lemon juice (or 3 tablespoons of cream of tartar and 1 tablespoon of hydrogen peroxide); scrub stain with a nylon pad and rinse with water.

For mildew:
- Scrub with a paste of lemon juice and salt (or white vinegar and salt).

Wood preservatives

Products Banned From Being Sold: *Pentachlorophenol, creosote, arsenic compounds, tributyl tin.* These are **restricted-use pesticides.** These chemicals are no longer sold for general use, but products treated with them are still sold to the general public. If you have a deck or outdoor furniture treated with these chemicals, the EPA advises sealing it with at least two coats of shellac or another sealant.

Examples of toxicants: *copper oleate, naphthenic acid, mineral spirits.*

Toxicity: *4*

Disposal:
Best: Use up non-banned wood preservatives according to label instructions; after letting the empty can air out (out-of-doors), dispose of it in the garbage.
2nd Best: Share non-banned wood preservatives with a neighbor or farmer who will use safely. If you have a large quantity left over, try advertising it at the local feed store or grange.
3rd Best Or Best If Banned: (Store in a safe place for a household hazardous waste collection project. **DO NOT** burn wood treated with preservatives: it is illegal, and the fumes will be toxic.

Alternatives:
■ Wood must contain 20% moisture content before it can support the growth of fungi, the primary agents of wood decay. Wood plus moisture equals decay! Corrective steps to allow the wood to stay dry will stop decay in its early stages. Once the moisture source is removed, even the uncommon "dry-rot" fungi will die after a month's drying of the infected wood.

■ Choose cedar (*not* old growth) as it contains natural resins that prevent decay in the presence of fungi or insects.

■ Choose borax-based wood preservatives.

■ In general, take the time to choose the least toxic product for the job you need to do.

■ Buy pressure-treated lumber: the preservative penetrates the wood more effectively than by hand-application, and the chance of a toxic spill and exposure is minimized.

For substances regulated by the U.S. Consumer Product Safety Commission: any manufacturer, distributor, or retailer who sells a banned product (or one that is banned after the sale) is required to buy back the product when it is returned.

For More Information:

Federal Agencies:

For product information.
Consumer Product Safety Commission
909 First Ave., Seattle, WA 98104
Telephone #: (206) 442-5276
Toll-free #: 1-800-638-2772

For toxic subtances and pesticides information.
Environmental Protection Agency
1200 Sixth Ave., Seattle, WA 98101
Telephone #: (206) 442-1918

For National Pesticide Information Line.
Toll-free #: 1-800-858-7378

For information for farmers and gardeners seeking to reduce chemical use and convert to low-input, sustainable agriculture.
U.S. Department of the Interior
Appropriate Technology-Transfer for Rural Areas Program
Telephone #: 1-800-346-9140

Washington State Department of Ecology

Washington State Department of Ecology
Mail Stop PV-11
Olympia, WA 98504

For waste reduction, recycling, and household hazardous substance information.
Recycling Information Line
Telephone #: (206) 438-7541
Toll-free #: 1-800-RECYCLE

For information on hazardous substances and Community Right-to-Know Information.
Hazardous Substance Information Office
Telephone #: (206) 459-6322
Toll-free #: 1-800-633-7585

For zoning and planning guidelines for local household hazardous waste and small quantity generator waste management.
Household Hazardous Waste Management Planning
Telephone #: (206) 438-7233 or (206) 459-6308

For information about waste management grant programs for local governments.
Household Hazardous Waste Grants
Telephone #: (206) 438-7561

For "How-to" guidelines on collection days and fixed facilities for collecting household hazardous waste.
Household Hazardous Waste Collection Programs
Telephone #: (206) 459-6303

Other Washington State agencies:

For pesticide regulations.
Chemical and Plant Services
Department of Agriculture
406 General Administration Bldg.
Olympia, WA 98504-0641
Telephone #: (206) 753-5064

Statewide 24-hour emergency spill hotline.
Division of Emergency Management
Department of Community Development
Telephone #: 1-800-262-5990

For information on gardening, pest control, home economics, and many other subjects.
Washington State University Cooperative Extension Office
(In your county seat: check your county government phone listings)

For information on hazardous chemicals in the work place, protective gear, etc.
Worker Right-to-Know Program
Department of Labor and Industries
Mail Stop HC-402
Olympia, WA 98504
Toll-free #: 1-800-423-7233

For health effects of chemicals.
Toxic Substances Section
Department of Social and Health Services
Mail Stop LD-11
Olympia, WA 98504
Telephone #: (206)586-4501

For information on water quality and pollution in Puget Sound.
Puget Sound Water Quality Authority
217 Pine St., Suite 1100
Seattle, WA 98101
Telephone #: (206) 464-7320
Toll-free #: 1-800-54-SOUND

For label interpretation, registrations, and pesticide regulations.
Extension Agrichemical Specialist
WSU-Pullman, WA 99164-6432
Telephone #: (509)335-2995

Other Organizations

For information on composting and related topics.
Seattle Tilth
4649 Sunnyside North
Seattle, WA.
Telephone #: (206)633-0451

For information on pesticides, other toxic materials, and safer alternatives.
Washington Toxics Coalition
4516 University Way N.E.
Seattle, WA 98105
Telephone #: (206)632-1545

Additional Resources

The following resources contain a wealth of information about household hazardous wastes, health effects of household chemicals, precautions, and safer alternatives to hazardous products.

Artist Beware: The Hazards and Precautions in Working with Art and Craft Materials. Michael McCann. Watson-Guptill Publications, N.Y. 1979.

Bug Busters: Getting Rid of Household Pests Without Dangerous Chemicals. Bernice Lifton. McGraw-Hill, N.Y. 1985.

Concepts of Integrated Pest Management in Washington State. WSU Cooperative Extension bulletin EM 0753.

Empty Pesticide Container Disposal. Washington State Department of Ecology, Solid and Hazardous Waste Program, Olympia, WA.

The Encyclopedia of Natural Insect and Disease Control. Roger B. Yepsen, Jr., ed. Rodale Press, Emmaus, PA. 1984.

Get Smart About Toxics: A Training Manual for Refuse Collectors on Household Hazardous Waste. Environmental Health Coalition and County of San Diego, CA, 1989.

Guide to Hazardous Products Around the Home. Household Hazardous Waste Project,901 South National Ave., Box 108, Springfield, Missouri 65804.

Hazardous Wastes from Homes. Enterprise for Education, Inc., Santa Monica Mall, Santa Monica, CA 90401, 1986.

Home Safe Home "Alternatives" factsheets. (A 16-part series dealing with pesticides, cleaners, paints, solvents, and other toxic household products; disposal, safe use, and alternatives.) Washington Toxics Coalition, 4516 University Way N.E., Seattle, WA 98105.

Making the Switch: Alternatives to Using Toxic Chemicals in the Home. Golden Empire Health Planning Center, P.O. Box 649, Sacramento, CA 95812. Feb., 1988.

Mother Earth News. P.O. Box 70, Hendersonville, NC.

The Natural Formula Book for Home and Yard. Dan Wallace, ed., Rodale Press, Emmaus, PA. 1982.

Nontoxic and Natural: How to Avoid Dangerous Everyday Products and Buy or Make Safe Ones. Debra Lynn Dadd. Jeremy P. Tarcher, Inc., Los Angeles, CA. 1984.

The Nontoxic Home: Protecting Yourself and Your Family from Everyday Toxics and Health Hazards. Debra Lynn Dadd. Jeremy P. Tarcher, Inc., Los Angeles, CA. 1986.

Organic Gardening. (Extension bulletin 0648) Art Antonelli, et. al. Washington State University, College of Agriculture, Cooperative Extension, 1982.

Pest Control for Organic Vegetable Growers. Alan T. Eaton. University of New Hampshire, Cooperative Extension Service, Durham, NH 03824.

Pest Management Study Manual for Pest Control Operators. (WSU Extension Bulletin #MISC-0096).

The House Mouse: Its Biology and Control. (WSU Cooperative Extension Bulletin #1401).

The Rat: Its Biology and Control. (WSU Cooperative Extension Bulletin #1377).

Removing Stains from Fabrics. (Pacific Northwest Extension Bulletin 166, available through your local Cooperative extension office.) 1979.

Stepping Lightly on the Earth. Greenpeace Action, 1436 U. St.NW, Suite 201-A, Washington, DC 20009.

Toward Hazardless Waste: A Guide for Safe Use and Disposal of Hazardous Household Products. Municipality of Metropolitan Seattle and the Seattle-King County Department of Public Health. 1985.

Wood Heating and Air Pollution. Washington Department of Ecology, Air Quality Program. Olympia, WA.