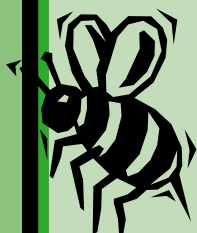

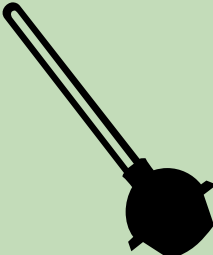


A Guide to TOXICS USE Reduction

START REDUCING
HAZARDOUS PRODUCT
USAGE AT HOME AND AT WORK



Minuteman Hazardous Household Products Facility,
Hartwell Avenue, Lexington, Massachusetts.

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- Toxic Waste Generation Starts on Your Street
 - Alternatives to Household Chemicals
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 - Toxics Use Reduction in the Workplace
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Toxic Waste Generation Starts on Your Street

The Minuteman Household Hazardous Products facility is located on a closed landfill. By bringing your household products here, you help keep toxic materials out of landfills and out of the environment.

But you can take even more effective steps to reduce, even eliminate hazardous wastes from your home and workplace. How? By limiting the amount of toxic products you use. Many industries now work successfully to reduce the amount of toxic materials they utilize.

Your home or business can too.

Toxics Use Reduction Works

Many people believe that there is no way to replace the materials they use to clean and maintain their homes, lawns, and cars. However, many common substances can be used to replace hazardous products. For other toxic materials, careful usage and product selection helps to minimize the impact of such substances on the environment.

Toxics Use Reduction, (TUR) is a pollution control concept now widely applied in many industries in Massachusetts. TUR has helped many companies significantly alter their manufacturing or research practices. In the process, many materials once thought to have been essential to product development have been substituted or eliminated completely. These efforts have led to dramatic reductions in the amount of toxic waste generated by industry in this state. This same principle can be easily applied in your own home—or at your place of work.



Toxics Use Reduction in Your Home

The average home generates between 15-20 pounds of toxic material every year. Many of these wastes can pose a great risk to your family's health.

Toxics Use Reduction (TUR) eliminating, reducing, or substituting toxic products for less hazardous methods – is the most effective means of preventing household products from entering the waste stream. The following pages offer many effective alternatives to household products, and ways to eliminate the use of herbicides, pesticides, and other common chemicals.

How to Reduce Hazardous Chemicals in Every Household



Every home contains hazardous materials and wastes. Kitchens, baths, storage closets, workrooms, and studios all hold many different materials that may be harmful to you, the environment, and to the people who handle your residential trash.

- **before you buy**

Before you purchase or use a product, read the label. Find out if there are alternatives to the product, or if you can find a less toxic substance for the project involved. The best way to keep toxic products out of your home? Don't purchase them.

- **buy small amounts**

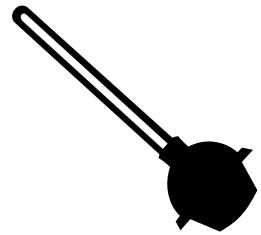
Check labels to find non-hazardous substitutes. Don't mix products together. Store in original containers.

- **try alternative cleaners**

Effective cleaners can be made out of non-toxic products like baking soda and vinegar. Check the chart on the following page to find alternatives to common cleaning products.

- **paint wisely**

Use latex paint instead of oil or acrylic-based paints, and buy only what you need. Older paint may contain lead or mercury. Some stores will accept unopened paint cans, while other stores will transfer old paint to a recycling center. Paint can also be donated to local community centers, theatre groups, schools, or house rehabilitation programs.



- **try mechanical, non-chemical methods**

Use a plunger or snake to clear drains, instead of caustic chemicals. Use traps instead of pesticides.

Caution

- do not mix chemicals
- keep products in their original containers
- never combine chlorine bleach with other chemicals, especially ammonia

- **re-use paint thinners when possible**

Allow paint solids to settle to the bottom of the container for a few weeks, then pour off clear thinner.



Reduce Waste from your Car

- Recycle or dispose of oil, batteries and tires.
- Consider special filters to keep oil cleaner, synthetic oil (lasts longer) or recycled antifreeze.
- Give away rather than discarding unused fluids.
- Use autos with air conditioner coolant that is non-ozone depleting, for example, R-135.
- Check hoses and engine for leaks.

- **minimize cleaner usage**

Use foil to minimize oven cleanups, and clean spills immediately with baking soda and water.



ALTERNATIVES TO COMMON HOUSEHOLD PRODUCTS

AIR FRESHENER

Simmer cinnamon and cloves

ALUMINUM SPOT REMOVER

2 tablespoons cream of tartar in one quart hot water

BLEACH

Borax

BRASS POLISH

Worcestershire sauce

CAR BATTERY CORROSION

Baking soda and water

CHROME POLISH

Apple cider vinegar to clean, baby oil to polish

COFFEE CUP STAIN REMOVER

Moist salt

COFFEE POT CLEANER

Vinegar

COPPER CLEANER

Lemon juice and salt

DEGREASERS

Borax on a damp cloth

DRAIN OPENER

Put a handful of baking soda and 1/2 cup vinegar down the drain. Cover the drain, sealing in the bubbles as they agitate and loosen your clog. Wait 15 minutes. Rinse with boiling water, follow with plunger.

FIBERGLASS STAIN REMOVER

Baking soda paste

FLOOR CLEANER

1 cup vinegar in 2 gallons of water

FURNITURE POLISH

1 tablespoon lemon oil in 1 pint of mineral oil

GLUE OR ADHESIVE SOLVENTS

Soak in white vinegar

HAND CLEANER-PAINT/GREASE

Baby oil

INK SPOT REMOVER

Cold water with 1 tablespoon cream of tartar and 1 tablespoon of lemon juice

OIL STAIN REMOVER

White chalk rubbed into stain before laundering

LINOLEUM FLOOR CLEANER

1 cup white vinegar in 2 gallons of water

MILDEW REMOVER

Equal parts of vinegar and salt

OVEN CLEANER

2 tablespoons liquid soap with 2 teaspoons borax in warm water

PHOTOGRAPHIC CHEMICALS

Donate any unused chemicals in original containers.

PERSPIRATION SPOT REMOVER

Baking soda

PET ODOR REMOVER

Cider vinegar

PORCELAIN STAIN REMOVER

Baking soda

REFRIGERATOR DEODORIZER

Open box of baking soda

RUG/CARPET CLEANER

Club soda

RUST REMOVER (CLOTHING)

Lemon juice and salt and sunlight

RUSTY BOLT/NUT REMOVAL

Carbonated beverage

SCOURING POWDER

Baking soda

SHOE POLISH

Olive oil or beeswax and chamois buffing cloth

SINK OR GARBAGE DISPOSAL DEODORIZERS

Used lemons or baking soda

SILVER POLISH

1 quart warm water and 1 tablespoon baking soda with a piece of aluminum foil and 1 tablespoon salt.

SPOT REMOVER

Club soda, lemon juice or salt

STAINLESS STEEL POLISH

Mineral oil

TEA STAIN REMOVER

Pour boiling water on stain

TOILET BOWL CLEANER

Paste of borax and lemon juice

TUB AND TILE CLEANER

1/4 cup baking soda
1/2 cup white wine vinegar in 1 quart white vinegar in warm water

UPHOLSTERY SPOT REMOVAL

Club soda

WATER SOFTENER

1/4 cup vinegar

WINE STAIN REMOVER

Salt

WINDOW CLEANER

2 tablespoons vinegar in 1 quart warm water; adjust vinegar as necessary.

WOOD POLISH

3 parts olive oil with 1 part white vinegar; almond or olive oil (interior unvarnished wood only)

Hobbies and Craft Materials

Household cleaners and auto products are not the only source of toxic waste. Many hobbies and crafts require the use of toxic materials – paints, spray paint, adhesives and photography chemicals – to name a few. When purchasing these materials, buy only the amount that you plan on using. Ask the retailer about recycling used and unused chemicals and paints. Make sure to use these products in a well-ventilated area.

Mercury-containing Devices: Fluorescent Lights, Thermostats



Fluorescent lights are a major source of mercury in the environment. When the lamps are discarded in the trash, the mercury-containing film in the lights end up in landfills or incinerators. Bring your lamps to a recycling center or to a hazardous household products facility that accepts fluorescent materials. Thermostats may also be a source of mercury, and should be disposed of properly as well.

Herbicide and Pesticide Use

Some of the most dangerous materials generated from households are pesticides and herbicides, which are used both inside and outside the home. Many of these products contain chemicals that are dangerous to human health or can cause significant damage to the environment. Through new practices like integrated pest management or changing your lawn care methods, the use of such chemicals can be reduced, even eliminated completely.

Herbicide and Lawn Care Chemicals

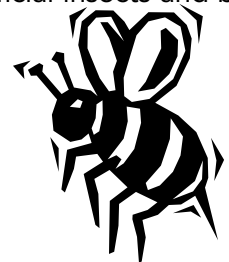
Homeowners often spend a good part of the spring and summer, and many chemicals, keeping their lawns looking great. However, much of this effort, and the toxic wastes generated in the process, could be eliminated through more effective lawn care practices. Before buying another bag of fertilizer, or spraying with a weed killer this year, try implementing some of the following practices when you work on your lawn:



To find out more about lawn care alternatives, consult "A Homeowner's Guide to Environmentally Sound Lawn Care" published by the Massachusetts Department of Food and Agriculture, Pesticide Bureau.



- **minimize chemical usage**
Many packaged lawn products ask you to apply a series of chemicals, some of which aren't even necessary for your lawn.
- **use native plants**
Grow local plants and grasses, which are less susceptible to local pests and diseases.
- **cut lawn less often**
Very short grass needs more water, and can die during dry weather. Also, thicker grass helps crowd out weed growth, without using herbicides!
- **minimize shady spots**
Reduce shady areas where weeds, fungi and pests like molluscs (snails) will grow.
- **aerate soil and maintain good drainage**
Try to eliminate wet areas where grass growth will be poor, and where pests can proliferate.
- **try hand weeding**
Or, let grass grow 2-3 inches to shade weed seedlings.
- **identify good and bad insects**
Use traps and barriers to control pests. Use plantings to attract beneficial insects and birds to control pests.



Integrated Pest Management

Spraying or baiting is effective in the short term for dealing with insects, rodents, and other pests. But, this practice exposes you and your family to dangerous materials— particularly if you use the products repeatedly. Instead of using pesticides, try to eliminate the problem at its source. This approach, called “integrated pest management” (IPM), lets you prevent pest infestations, and minimizes the use of toxic chemicals in your home.

- **seal up openings into your home**

Ants, flies, bats and mice are easily attracted to your home if they have easy access.

- **eliminate food and water sources**

Do not feed wild animals by spreading birdseed on lawns. Keep food and trash off floors.

- **look for alternative pest preventatives**

including bait or mechanical traps.

- **use as little pesticide as possible.**

Most household pesticides are fairly powerful; a little goes a long way.

- **maintain good drainage**

Wet areas are breeding spots for insects and molluscs (garden slugs and snails) in and around your home and garden.



ALTERNATIVES TO COMMON INSECTICIDES



ANTS

Keep counters clean, do not leave food products open. Wipe up ants and trails with soapy water. Caulk and seal all openings into house. Place chili powder near entry points.

COMMERCIAL FERTILIZER

Compost



INSECT REPELLENT

Remove any standing water around your house, including bird baths. Encourage mosquito predators such as birds, frogs, turtles, ants, spiders, dragonflies and praying mantis. Check all the screens around your windows, repair or replace damaged screens. Use citronella candles.

PET FLEA KILLER

Gradually add brewers yeast to the pet's diet.

FLYING INSECT PESTICIDE/PEST STRIPS

Well watered pot of basil.

GARDEN NEMATODE REPELLENT

Plant marigolds.

MOTHS

Clean all clothing prior to storage. Vacuum closets thoroughly. Store clothes in sealed bags. Use cedar wood chip sachet instead of mothballs.

PANTRY MOTHS

Some herbs have been found to repel insects. Try using bay leaves, coriander, dill, cinnamon, lemon peel, or black pepper. Vacuum and wash shelves regularly.

PLANT PESTICIDES

Place soapy water on leaves then rinse.

ROACH REPELLENT

Place chopped bay leaves and cucumber skins along floors and corners.

SLUG AND SNAIL KILLER

Lay broken sea shells around plants to keep slugs away. Fill a shallow pan with stale beer and place in the infested area. Overturn clay pots and snails will seek shelter in them from the heat; collect and destroy. Lay boards between rows of planted vegetables; snails will often attach themselves to the underside; collect and destroy. Plant onion and marigold plants.



Toxics Can Be Reduced, Substituted, Even Eliminated

If you think there's no replacement for chemicals you use at home, or at work, take a look at how major corporations reduced the levels of toxic materials they used and produced.

Raytheon Corporation

Reducing toxic chemical usage is a priority at Raytheon. This company's innovative reduction methods have been successful in all phases of manufacturing.

- Virtually eliminated the use of ozone-depleting solvent cleaners through material substitution and manufacturing process modifications.
- Reduced water usage by 50% through a closed-loop re-circulating system for concentrated rinse waters.
- Removed 98% of compounds in air emissions through closed-top process tanks.
- Substituted dry powder coating systems for paints containing smog-producing solvents.
- Reduced solvent usage through more efficient paint stripping methods.

Minuteman Hazardous Household Products Facility

The Minuteman Facility is the first regional center in Massachusetts for the collection of toxics generated by residents and small businesses. The collection services at the facility prevent common toxic materials from entering the environment. The Minuteman Facility is managed by eight participating towns, with support from Lexington DPW and the Mass. Department of Environmental Protection.

The Facility also serves as an education center on toxics use reduction.



Polaroid Corporation

Polaroid Corporation integrates pollution prevention and waste minimization initiatives throughout its product development process. Here are just a few of the successful programs in toxic use reduction to date:

- Eliminated chlorofluorocarbons (CFC's) in all manufacturing; gradually eliminating them in chillers.
- Packaging incorporates more than 3000 tons of recycled materials every year.
- Mercury has been removed from Polaroid manufactured batteries found in most film packs. A new, less volatile and toxic metal, indium, is now used. Scrap batteries can now be safely recycled.



Resources for Toxics Use Reduction

**U.S. Consumer Product Safety Commission,
Product Safety Information
800-638-2772**

**Toxics Use Reduction Institute,
Toxics use reduction information
978-934-3275**

**Mass. Dept. of Environmental Protection,
Public information
617-292-5515**

**Mass. Dept. of Environmental Protection,
HHW Regulations and Publications
617-292-5898**

**U.S. Environmental Protection Agency,
Pesticide Hotline – 24 hours
800-858-7378**

**Mass. Office of Technical Assistance for Toxic Use Reduction,
HHW management, pollution prevention
617-727-3260, ext. 696**

**Mass. Dept. of Food and Agriculture:
Pesticide Bureau Pesticide Management,
Publications on environmentally sound lawn care.
617-727-3020, ext. 118**

**Mass. Poison Information Hotline
800-682-9211**

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TURI is a multi-disciplinary research, education, and policy center established by the Massachusetts Toxics Use Reduction Act of 1989. The Institute sponsors and conducts research, organizes education and training programs, and provides technical support to promote reduction in the use of waste of toxic chemicals in industry and commerce.

