

Hazardous Materials Accidents

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Hazardous Materials Accidents

Hazardous materials are substances which, because of their chemical, biological or physical nature, pose a potential risk to life, health or property if they are released. Potential hazards can occur during any stage of use from production and storage to transportation, use or disposal. Production and storage occurs in chemical plants, gas stations, hospitals and many other sites. Hazardous materials accidents can range from a chemical spill on a highway to groundwater contamination by naturally occurring methane gas to a household hazardous materials accident. Radiological accidents involving a specific hazardous material will be covered in another section of this handbook. In addition to the information provided in the following pages, you should also refer to the General Family Preparedness section of this handbook.

Be familiar with the local warning and notification methods.

Contact your local emergency planning committee to find out where reportable quantities of extremely hazardous materials are stored and used in your area.

Ask about community response plans if there is a hazardous materials accident at a plant or facility, or a hazardous materials transportation accident.

Preparing for Hazardous Materials Accidents in the Home

1. Go on a home hazard hunt. Some cleaners can cause an explosion or fire if they come in contact with each other, water, heat or flames.
2. Make a list of the hazardous products you have in your home. List the name of the product and emergency care information.
3. Store hazardous household products according to safety recommendations.

Store hazardous materials in a safe, dry location.

Be sure all containers are closed to avoid spills and escaping vapors.

Store flammable products and corrosive products in separate locations. The label will indicate if the product is corrosive or flammable.

Place oily polishing rags or waste in covered metal cans.

Never store aerosols on or near fireplaces, radiators, space heaters, wood stoves, pilot lights, furnaces and kitchen appliances.

Keep herbicides and pesticides away from any heat source.

Store herbicides separately from pesticides. Herbicide vapors can contaminate other products.

Store pesticides and herbicides away from fertilizer. Their vapors can contaminate fertilizers. Periodically check hazardous product containers for deterioration and possible leaks.

Check periodically to be sure that labels on hazardous products are secure and readable.

Store hazardous products on high shelves or in locked cabinets to prevent poisoning of children and pets.

Do not store flammable liquids such as gasoline and kerosene in a garage or utility room attached to the house.

Never store flammable liquids or even a lawn mower filled with gasoline near a heat source such as gas water heaters, furnaces, radiators, space heaters, etc. Spontaneous combustion can occur if the flammable liquid vapors escape.

4. To prevent household hazardous materials from being spilled during a disaster such as a flood, fire or earthquake, take the following preventive measures:

Securely fasten shelves where hazardous materials are stored.

Store incompatible products in separate locations so they will not come in contact with each other.

Label the shelves where flammable products are stored.

Store hazardous materials in a metal cabinet to protect them from fire.

Dry off containers that get wet in a flood. Move them off damp shelves until the shelf material has dried thoroughly.

Check labels on wet containers and reglue or tape them securely before they come off completely.

5. Be aware of how different chemicals may react during mixed spills. Some common chemicals and their dangers are:

Kitchen

Cleansers (reactive) Detergents (reactive) Cooking oil (flammable) Aerosols (explosive in fire)

Bathroom

Aerosols (explosive in fire) Alcohol (flammable) Nail polish remover (flammable) Medicines (see label)

Bedrooms

Aerosols (explosive in fire) Gun ammunition (explosive in fire) Medicines (see label)

Workshops

Paints (toxic) Paint thinner (toxic, flammable) Adhesives (toxic, flammable)

Garage

Gasoline (toxic, flammable) Antifreeze (toxic, flammable) Brake fluid (toxic, flammable) Transmission fluid (toxic, flammable) Oil (flammable)

Laundry Room

Detergents (reactive) Cleansers (reactive) Bleach (reactive)

Gardening

Pesticides (toxic, reactive) Fertilizers (toxic, reactive, most flammable or explosive when mixed with gasoline)

General

Natural gas (flammable, explosive) Sewer gases from broken sewer pipes (toxic, explosive)

What to Do If a Hazardous Materials Accident Occurs

1. If you witness a hazardous materials accident, spill or leak, call 911, your local emergency number or the fire department as soon as possible.
2. Stay away from the incident site to minimize your chances of contamination.
3. If you are caught outside during an incident try to stay upstream, uphill and upwind. Hazardous materials can be transported quickly by water and wind.

In general, try to go at least 1/2 mile (10 city blocks) from the accident area.

If you are in a vehicle, close off ventilation and close the windows to reduce contamination or inhalation of the hazardous material.

4. If you are told to evacuate, do so immediately.

Before leaving your home or office, close all windows, shut vents and turn off attic fans to minimize contamination.

5. In some circumstances, it is safer to keep community residents inside. This is known as "in-place sheltering." If you are instructed to stay inside:

Follow all instructions carefully.

Seal entry routes as efficiently as possible. Close windows and doors and seal drafty places with wet towels, blankets or duct tape.

Turn off furnaces, air conditioners, vents and fans to keep fumes from entering the house.

If dangerous fumes do enter the home, take shallow breaths through a cloth or towel.

Quickly fill up your bathtub with a supply of uncontaminated water and turn off the intake valve to your home.

Stay in protected areas of the house (bathroom, stairwell, basement) where toxic vapors are less likely to penetrate.

Close all fireplace dampers.

Seal any gaps around window air conditioning units, bathroom and kitchen exhaust fan grilles and stove and dryer vents with tape and plastic sheeting, wax paper or aluminum wrap.

If local authorities warn of an outdoor explosion, close all drapes, curtains and shades. Stay away from windows to prevent injury from breaking glass.

6. Avoid contact with any spilled liquid materials, airborne mist or condensed solid chemical deposit.

Keep your body fully covered and wear gloves, socks and shoes, even though these measures may offer minimal protection.

7. Avoid eating or drinking any food or water that may be contaminated.

After a Hazardous Materials Incident

1. Do not return home until authorities say it is safe.
2. Upon returning home, open windows and vents, and turn on fans to provide ventilation.
3. A person or item that has been exposed to a hazardous material may be contaminated and could contaminate other people or items. If you have come in contact with or been exposed to hazardous materials:

Follow decontamination instructions from your local authorities.

Stay away from water or showers until you know if the material reacts with water.

Seek medical treatment for unusual symptoms that may be related to hazardous materials release. If medical help is not available immediately and you believe you may be contaminated, remove all of your clothing and shower thoroughly (unless authorities advise otherwise). Change into fresh, loose, warm clothing and seek medical help as soon as possible.

Place exposed clothing and shoes in tightly sealed container without allowing them to touch other materials and call local authorities to find out about proper disposal.

Advise others who come in contact with you that you may have been exposed to a toxic substance.

4. Report any lingering vapors or other hazards to your local emergency services.
5. Find out from local authorities how to clean up your land and property.

Reacting to a Hazardous Spill in Your Home

1. If the spill is large and too big for one person to control and clean up, call 911 or your local emergency number as soon as possible.
2. Keep the area of the spill from spreading. Set up barriers and ventilate the area if it is inside the home or garage. Keep children and pets away.
3. Check label for instructions about contact.

Wear rubber gloves and boots.

Wear long pants and a long sleeved shirt to avoid skin contact.

4. Clean up as soon as possible.

Don't flush the spill away with a hose.

If dust or powder is spilled, limit air movement in the area and pick up the material in a way that minimizes making the dust or powder airborne.

If liquid is spilled, cover it with an absorbent material such as kitty litter, paper towels or old rags. Sweep or scoop the solids and the original container into a plastic bag, also scoop up any contaminated dirt or gravel. Seal the plastic bag.

Scrub the area with detergent or water.

For very toxic liquid substances such as pesticides, cover again with absorbent materials and sweep or scoop up the absorbent into a plastic bag.

Scrub repeatedly until traces of the chemical are gone.

5. Place all cloths in a used plastic bag. Double bag, seal and label.
6. Completely rinse the area and any tools used.
7. Dispose of contaminated materials in an appropriate manner according to directions on the label.
8. If the spill is a very toxic product, decontaminate clothing and equipment to avoid contaminating your home and others. Follow the same decontamination procedures you would for a toxic spill outside the home.

Special Considerations for Agricultural Producers

In addition to the precautions and responses covered in the previous pages, the agricultural producer will want to consider the following measures. Also refer to the section on General Family Preparedness.

Prevent a hazardous materials accident by making sure agricultural chemicals are properly stored. Follow instructions on labels.

What to do if a Hazardous Materials Accident Occurs

1. Follow the same response procedures outlined in the first part of this section.
2. If livestock are downwind, downhill or downstream of the incident move them as far from the area as possible.
3. Do not enter the area or attempt to reach animals if you must pass the area of incident.
4. Refer to the Radiological Accidents section for information on protecting food and water sources.

After a Hazardous Materials Accident

1. Monitor animals for signs of illness that may be associated with the accident.
2. Contact local authorities for information on the cleanup of land and animals.

Information in this document was compiled by the Texas Agricultural Extension Service and Hazard Reduction and Recovery Center