

Hazardous Materials Incidents



From industrial chemicals and toxic waste to household detergents and air fresheners, hazardous materials are part of our everyday lives. Affecting urban, suburban and rural areas, hazardous materials incidents can range from a chemical spill on a highway to groundwater contamination by naturally occurring methane gas.

Hazardous materials are substances that, because of their chemical nature, pose a potential risk to life, health or property if they are released. Hazards can exist during production, storage, transportation, use or disposal.

If you witness a hazardous materials accident, call 911, your local emergency notification number or the fire department.

Chemical plants are one source of hazardous materials, but there are many others. Your local service station stores gasoline and diesel fuel, hospitals store a range of radioactive and flammable materials, and there are about 30,000 hazardous materials waste sites in the country.

Many communities have Local Emergency Planning Committees (LEPCs) that identify industrial hazardous materials and keep the community informed of the potential risk. All companies that have hazardous chemicals must report annually to the LEPC. The public is encouraged to participate in the process. Contact your local emergency management office to find out if your community has an LEPC and how you can participate.

What to do before a hazardous materials incident

1. Ask your fire or police department about warning procedures. These could include:
 - Outdoor warning sirens or horns.
 - Emergency Alert System (EAS)—Information provided via radio and television.
 - “All-Call” telephoning—An automated system for sending recorded messages.
 - News media—Radio, television and cable.
 - Residential route alerting—Messages announced to neighborhoods from vehicles equipped with public address systems.
2. Ask your LEPC or emergency management office about community plans for responding to a hazardous materials accident at a plant or other facility,

or a transportation accident involving hazardous materials.

3. Ask your LEPC about storage and usage of hazardous chemicals in your local area.
4. Use the information gathered from LEPC and local emergency management offices to evaluate risks to your household. Determine how close you are to factories, freeways, or railroads that may produce or transport toxic waste.
5. Be prepared to evacuate. An evacuation could last for a few hours or several days. See the “Evacuation” and “Emergency Planning and Disaster Supplies” chapters for important information.
6. Be prepared to shelter-in-place; that is, to seek safety in your home or any other building you might be in at the time of a chemical release. At home you should select a room to be used as a shelter. The shelter room for use in case of a hazardous material incident should be above ground, large enough to accommodate all household members and pets, and should have the fewest possible exterior doors and windows. You should also assemble a shelter kit to be used to seal the shelter room during a chemical release. The kit should include plastic sheeting, duct tape, scissors, a towel, and modeling clay or other material to stuff into cracks.

An evacuation due to a hazardous materials incident could last for a few hours or several days. Be prepared in advance.

What to do during a hazardous materials incident

1. If you witness (or smell) a hazardous materials accident, call 911, your local emergency notification number or the fire department as soon as safely possible.
2. If you hear a warning signal, listen to local radio or television stations for further information. Follow instructions carefully.
3. Stay away from the incident site to minimize the risk of contamination.
4. If you are caught outside during an incident, remember that gases and mists are generally heavier than air. Try to stay upstream, uphill and upwind—hazardous materials can quickly be transported by water and wind. In general, try to go at least one-half mile (10 city blocks) from the danger area; for many incidents you will need to go much further.
5. If you are in a motor vehicle, stop and seek shelter in a permanent building if possible. If you must remain in your car, keep car windows and vents closed and shut off the air conditioner and heater.
6. If asked to evacuate your home, do so immediately.
 - If authorities indicate there is enough time, close all windows, shut vents and turn off attic, heating and air conditioning fans to minimize contamination.
 - See the “Evacuation” chapter for more information.

7. If you are requested to stay indoors (shelter-in-place) rather than evacuate:
 - Follow all instructions given by emergency authorities.
 - Get household members and pets inside as quickly as possible.
 - Close and lock all exterior doors and windows. Close vents, fireplace dampers and as many interior doors as possible.
 - Turn off air conditioners and ventilation systems. In large buildings, building superintendents should set all ventilation systems to 100 percent recirculation so that no outside air is drawn into the building. If this is not possible, ventilation systems should be turned off.
 - Go into the pre-selected shelter room (the above-ground room with the fewest openings to the outside). Take a battery-powered radio, water, sanitary supplies, a flashlight, and the shelter kit containing plastic sheeting, duct tape, scissors, a towel, and modeling clay or other materials to stuff into cracks.
 - Close doors and windows in the room. Stuff a towel tightly under each door and tape around the sides and top of the door. Cover each window and vent in the room with a single piece of plastic sheeting, taping all around the edges of the sheeting to provide a continuous seal. If there are any cracks or holes in the room, such as those around pipes entering a bathroom, fill them with modeling clay or other similar material.
 - Remain in the room, listening to emergency broadcasts on the radio, until authorities advise you to leave your shelter.
 - If authorities warn of the possibility of an outdoor explosion, close all drapes, curtains, and shades in the room. Stay away from windows to prevent injury from breaking glass.
- When authorities advise people in your area to leave their shelters, open all doors and windows and turn on air conditioning and ventilation systems. These measures will flush out any chemicals that infiltrated into the building.
- See the “Shelter” chapter for more information.
8. Schools and other public buildings may institute procedures to shelter in place. If there is a hazardous materials incident and your children are at school, you will probably not be permitted to drive to the school to pick up your children. Even if you go to the school, the doors will probably be locked to keep your children safe. Follow the directions of your local emergency officials.
9. Avoid contact with spilled liquids, airborne mists or condensed solid chemical deposits. Keep your body fully covered to provide some protection. Wear gloves, socks, shoes, pants and long sleeved shirts.
10. Do not eat or drink food or water that may have been contaminated.
11. If indoors, fill the bathtub (first sterilize it with a diluted bleach solution—one part bleach to ten parts water) and large containers with water for drinking, cooking, and dishwashing. Be prepared to turn off the main water intake valve in case authorities advise you to do so.

What to do after an incident

1. Do not return home until local authorities say it is safe.
2. Upon returning home, open windows, vents and turn on fans to provide ventilation.

3. A person or item that has been exposed to a hazardous chemical may be contaminated and could contaminate other people or items. If you have come in contact with or have been exposed to hazardous chemicals, you should:

- Follow decontamination instructions from local authorities. (Depending on the chemical, you may be advised to take a thorough shower, or you may be advised to stay away from water and follow another procedure.)
 - Seek medical treatment for unusual symptoms as soon as possible.
 - If medical help is not immediately available and you think you might be contaminated, remove all of your clothing and shower thoroughly (unless local authorities say the chemical is water reactive and advise you to do otherwise). Change into fresh, loose clothing and seek medical help as soon as possible.
 - Place exposed clothing and shoes in tightly sealed containers. Do not allow them to contact other materials. Call local authorities to find out about proper disposal.
 - Advise everyone who comes in contact with you that you may have been exposed to a toxic substance.
4. Find out from local authorities how to clean up your land and property.
 5. Report any lingering vapors or other hazards to your local emergency services office.
 6. See the “Recovering from Disaster” and “Shelter” chapters for more information.

Household Chemical Emergencies

Nearly every household uses products containing hazardous materials. Although the risk of a chemical accident is slight, knowing how to handle these products and how to react during an emergency can reduce the risk of injury.

How to prepare for household chemical emergencies

If you spill a chemical, clean it up immediately with rags. Be careful to protect your eyes with eyeglasses or goggles and your skin with gloves.

1. Contact agencies with expertise on hazardous household materials, such as your local public health department or the Environmental Protection Agency, for information about potentially dangerous household products and their antidotes. Ask about the advisability of maintaining antidotes in your home for: cleaners and germicides, deodorizers, detergents, drain and bowl cleaners, gases, home medications, laundry bleaches, liquid fuels, paint removers and thinners.
2. Follow instructions on the product label for proper disposal of chemicals. Proper disposal will ensure environmental and public health as well as household well being. If you have additional questions on chemical disposal, call your local environmental or recycling agency.
 - Small amounts of the following products can be safely poured down the drain with plenty of water: bathroom and glass cleaner, bleach, drain cleaner, household disinfectant, laundry and dishwashing detergent, rubbing alcohol, rug and upholstery cleaner, and toilet bowl cleaner.

- Small amounts of the following products should be disposed by wrapping the container in newspaper and plastic and placing it in the trash: brake fluid, car wax or polish, dish and laundry soap, fertilizer, furniture and floor polish, insect repellent, nail polish, oven cleaner, paint thinners and strippers, pesticides, powder cleansers, water-based paint, wood preservatives.
 - Dispose of the following products at a recycling center or a collection site: kerosene, motor or fuel oil, car battery or battery acid, diesel fuel, transmission fluid, large amounts of paint, thinner or stripper, power steering fluid, turpentine, gun cleaning solvents, and tires.
 - Empty spray cans completely before placing in the trash. Do not place spray cans into a burning barrel, incinerator, or trash compactor because they may explode.
 - Flush outdated and unused medicines down the toilet and place the empty container in the trash. Outdated medicines can cause ill effects. Flushing them will eliminate the risk of people or animals picking them out of the trash.
3. Read directions before using a new chemical product and be sure to store household chemicals according to the instructions on the label.
 4. Store chemicals in a safe, secure location, preferably up high and always out of the reach of children.
 5. Avoid mixing household chemical products. Deadly toxic fumes can result from the mixture of chemicals such as chlorine bleach and ammonia.
 6. Never smoke while using household chemicals. Avoid using hair spray, cleaning solutions, paint products, or pesticides near an open flame, pilot light, lighted candle, fireplace, wood burning stove, etc. Although you may not be able to see or smell them, vapor particles in the air could catch fire or explode.
 7. If you spill a chemical, clean it up immediately with rags. Be careful to protect your eyes and skin (wear gloves and eye protection). Allow the fumes in the rags to evaporate outdoors, then dispose of the rags by wrapping them in a newspaper and placing them in a sealed plastic bag in your trash can.
 8. Buy only as much of a chemical as you think you will use. If you have product left over, try to give it to someone who will use it. Storing hazardous chemicals increases risk of chemical emergencies.
 9. Keep an A-B-C-rated fire extinguisher in the home and car, and get training from your local fire department on how to use it.
 10. Post the number of the nearest poison control center by all telephones. In an emergency situation you may not have time to look up critical phone numbers.
 11. Learn to detect hazardous materials. Many hazardous materials do not have a taste or an odor, and some can be detected because they cause physical reactions such as watering eyes or nausea. Other hazardous materials exist beneath the ground and can be recognized by an oil or foam-like appearance.
 12. Learn to recognize the symptoms of toxic poisoning:

- Difficulty breathing
- Irritation of the eyes, skin, throat or respiratory tract
- Changes in skin color
- Headache or blurred vision
- Dizziness
- Clumsiness or lack of coordination
- Cramps or diarrhea

What to do during a household chemical emergency

1. If your child should eat or drink a non-food substance, find any containers immediately and take them to the phone. Medical professionals may need specific information from the container to give you the best emergency advice.
2. Call the poison control center, emergency medical services (EMS), 911, hospital emergency room, county health department, fire department or your local pharmacy. They will give you emergency advice while you wait for professional help. You should have such numbers on hand for easy access and use.
3. Follow the emergency operator or dispatcher's instructions carefully. The first aid advice found on containers may not be appropriate. Do not give anything by mouth until medical professionals have advised you.
4. Take immediate action if the chemical gets into the eyes. Delaying first aid can greatly increase the likelihood of injury. Flush the eye with clear, water for a minimum of 15 minutes, unless authorities instruct you not to use water on the particular chemical involved. Continue the cleansing process even if the victim indicates he or she is no longer feeling any pain, and then seek medical attention.
5. Get out of the residence immediately if there is danger of a fire or explosion. Do not waste time collecting items or calling the fire department when you are in danger.
6. If there is a fire or explosion, call the fire department from outside (a cellular phone or a neighbor's phone) once you are safely away from danger.
7. Stay upwind and away from the residence to avoid breathing toxic fumes.
8. Wash hands, arms, or other exposed body parts that may have been exposed to the chemical. Chemicals may continue to irritate the skin until they are washed off.
9. Discard clothing that may have been contaminated. Some chemicals may not wash out completely. Discarding clothes will prevent potential future exposure.
10. Administer first aid treatment to victims of chemical burns.
 - Call 911 for emergency help.
 - Remove clothing and jewelry from around the injury.
 - Pour clean, cool water over the burn for 15 to 30 minutes.
 - Loosely cover the burn with a sterile or clean dressing. Be sure that the dressing will not stick to the burn.
 - Refer victim to a medical professional for further treatment.