

REACTIVES

Working With “Nervous” Chemicals

Reactives are “nervous” chemicals that can react violently, sometimes just by being moved. Avoid taking chances. Each time you work with reactives, read the Material Safety Data Sheet (MSDS) first. The information on this sheet and on container labels will also help protect you.

It Doesn't Take Much

It takes very little to make reactives or chemicals near them explode, burn or release dangerous vapors.

Explosives, the most obvious reactives, can sometimes go off in the presence of a tiny spark, even from friction.

Oxidizers contain large percentages of oxygen. They can cause other substances, like flammables, to burn.

Unstable chemicals can explode under what seem like safe conditions, such as heat or slight move-

ments. Some chemicals, such as ether, become unstable over time. These can be especially dangerous because your usual procedures are no longer safe.

Incompatible chemicals, such as acids and bases, seem stable on their own but react strongly when they are mixed together.

Polymerizing chemicals, such as epoxies, create their own chemical reaction. If this reaction happens too quickly, the result can be fire or explosion.

12 Ways To Protect Yourself

1. Know what causes a reactive to react. Never move, mix or work with a reactive until you do.
2. Keep fire and sparks far from reactives. Never smoke, cut or weld near them.
3. Keep reactives away from flammables. Flammables are gases or liquids (like gasoline) which burn at under 100° F (37.8° C).

4. Keep incompatible chemicals separate. Never mix or store them together.

5. Stay alert to the special dangers of unstable and polymerizing chemicals.

6. Unless you have special training on explosives, don't work with them.

7. Keep oxidizers far from materials that burn easily, such as paper or wood.

8. Wear the right Personal Protective Equipment (PPE) for the job. PPE must fit properly to protect you.


9. Label all containers, even temporary ones. Make sure that seals, screens, caps and containers are working properly and do not leak. Replace or dispose of parts or containers as necessary.

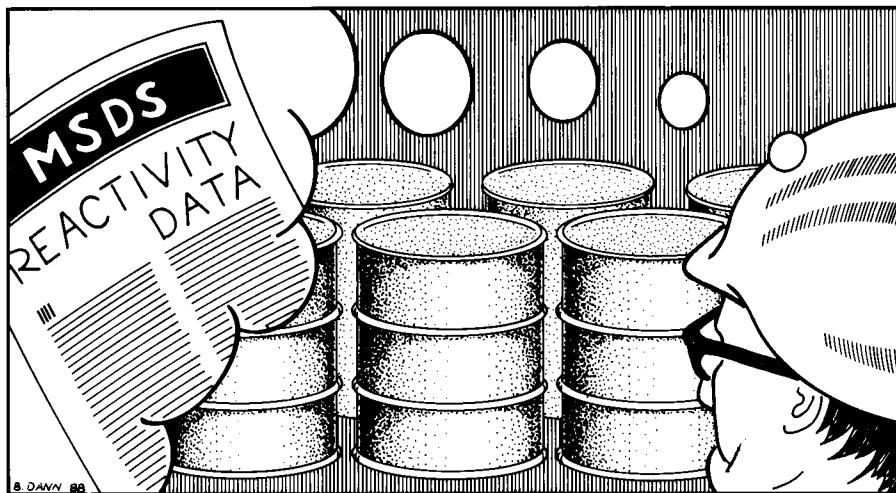
10. Ventilate the work area. Use suggested fans, hoods and ventilation systems.

11. Know where fire extinguishers are located. Use the right kind for the reactive you're working with—the wrong kind can spread the fire.

12. Handle, store and dispose of reactives according to company procedure.

Play It Safe

Reactives can react so suddenly and violently that you should always play it safe. Avoid risks you don't need to take. Reading the MSDS and following the procedures it lists is excellent protection. 



Never move, mix or work with a reactive until you know what causes it to react.

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Safe Handling, Storage and Disposal

Reactives are chemicals that can explode or burn under what seem to be safe conditions. They need very special handling, storage and disposal to prevent unwanted surprises.

Take It Seriously: Handle With Care

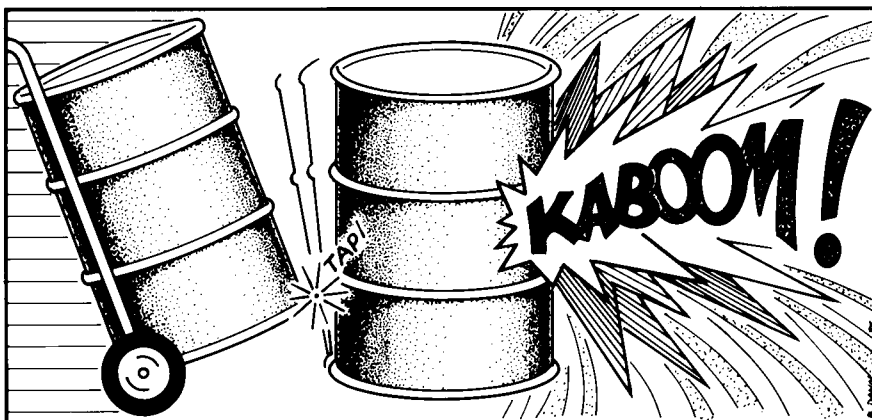
“Handle with Care” should always be your guide. *Before* you handle a reactive, read the Material Safety Data Sheet (MSDS). It will tell you what causes the chemical to react. Some examples: *Unstable chemicals* can explode with the slightest shock. *Explosives* and *oxidizers* can go off in the presence of the smallest spark, even friction. *Incompatible chemicals* are unsafe when they are in contact with each other.

The MSDS will let you know the kind of Personal Protective Equipment (PPE) to wear and how to handle the chemical properly. Read the container label, too. Know the location of the correct kind of fire extinguisher and spill control stations.



Always dispose of reactive waste into approved containers designated for the specific material.

Some reactives explode from even small movements.



Make A Safe Bet: Store Alone

The safe bet is to store all reactives away from other chemicals. Keep them far from heat and electric sources.

Keep oxidizers such as nitric or sulfuric acid stored separately from flammables, paper, wood or other materials which can burn.


Unstable chemicals can react violently to conditions such as movement or heat. Store them in temperature-controlled areas which do not vibrate or receive shocks. Store incompatible chemicals such as acids and bases away from each other.

Dispose Of Them Wisely

Use common sense when disposing of reactives. These are some of the most dangerous chemicals. Follow company procedures and those listed on the MSDS. If you have questions, ask your supervisor.

Always dispose of reactives into approved containers. Never pour them into the drain, sewer, garbage, or ground. Never smoke around disposal sites or containers. Follow company policy for disposing of contaminated clothing, PPE, rags and materials.

An Important Partnership

The working partnership between your employer and you helps ensure everyone's safety at work. Your part includes taking safety training seriously, reading MSDSs and labels, thinking through procedures, and asking questions where necessary. 

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REACTIVES

Preventing & Handling Emergencies

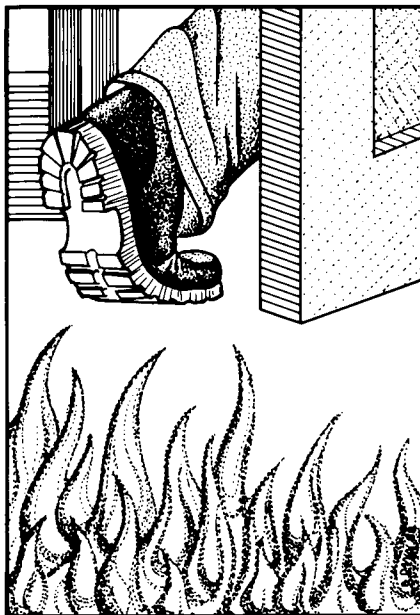
Reactives are dangerous chemicals which can explode or burn under conditions that are safe for most substances. They include *explosives*, *unstable chemicals* (which can explode at the slightest movement) and *pyrophorics* (which burn when they are simply exposed to air).

Emergencies involving reactives can be very serious. Explosions and fires can spread quickly, starting from a tiny spark of static electricity or from a lit match. Take the time before you begin a task to read this sheet and all appropriate Material Safety Data Sheets (MSDSs).

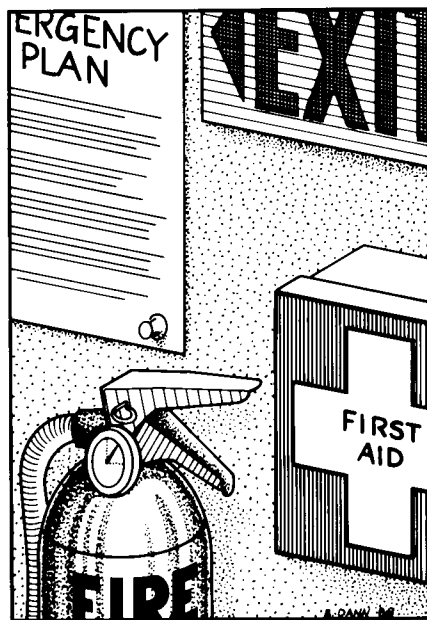
Before You Work With Reactives

When working with reactives, always follow your instructions precisely, *and remember:*

- 1 Know the location of nearest eyewash stations, safety showers, and fresh air sources.
- 2 Read the MSDS for the chemical.
- 3 Read the label on the container.
- 4 Learn your company's emergency plan.
- 5 Learn first aid skills, including CPR (CardioPulmonary Resuscitation).



In an emergency, leave the area immediately and close the doors.



Before you work with reactives, study your company's emergency plan.

Minimize Injury And Damage

Someone who is not trained to handle emergencies involving reactives can make the situation worse. If you have not received this training, you can still help keep possible injury and damage to a minimum.

If there is an emergency, or you think there might be, leave the area quickly. Tell others what has happened. Close the doors, then find a supervisor or someone trained to handle that kind of emergency.

Turn off flames or equipment that can spark if you can do so from outside the area. Open windows and ventilate the area thoroughly if possible.

Find A Doctor

Victims of reactive emergencies can be seriously hurt. Send for medical help as soon as possible, and perform first aid while you are waiting for the doctor. This may include bringing the victim to an eyewash station, safety shower, or fresh air source.

Use Common Sense

In emergencies, you need to use common sense and quick thinking. And if you use common sense beforehand, you can help prevent emergencies. Your company's Hazard Communication Program will give you information which is useful. Take your training seriously. Then ask your supervisor if you have questions.

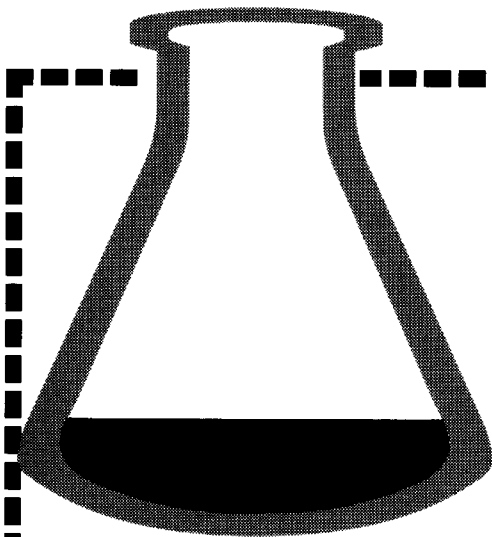


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PROTECTING AGAINST CHEMICAL HAZARDS

Your Checklist For Safe Use Of Chemicals

Corrosives, solvents, and other chemical substances can be potentially dangerous. But, they needn't be harmful when they are handled, stored, and disposed of safely. The following checklist is your guide to protecting against chemical hazards before they can become chemical emergencies.



- ✓ Read container labels and Material Safety Data Sheets (MSDSs). They will list safe handling procedures, such as “Wait for corrosive (or solvent) to dry completely before welding or cutting metal.”
- ✓ Always add acids to water (not the other way around) to prevent boiling over and splashing.
- ✓ Never sniff a chemical to identify its type or location.
- ✓ Use appropriate personal protective equipment (PPE) when working with chemicals. These may include chemical splash goggles, full-face respirators, safety gloves, barrier creams, splash aprons, corrosive-resistant boots or any combination of the above.
- ✓ Make sure that PPE fits properly and that you know how to use it.
- ✓ When using respirators, match your canister or cartridge to the correct respirator and the particular chemical and replace when necessary.
- ✓ Don't wear contact lenses; these can absorb chemicals or trap them against your eyes.
- ✓ Know the location of eyewash stations and safety showers and how to use them. (In most cases, if you are exposed to a chemical splash, they will be your first emergency treatment.)
- ✓ Slowly mix corrosives or solvents, or dip parts into them.
- ✓ Never put your hands into corrosives or solvents—even if you are wearing gloves.
- ✓ Always wash your hands well before eating or smoking, and before and after every shift.
- ✓ Use engineering controls, including fans, exhaust hoods, and other ventilation systems installed for your protection.
- ✓ Know emergency first aid procedures.
- ✓ If you are unclear about your company's safety procedures for handling chemical substances, speak to your supervisor. Make sure you understand *everything* you need to know about protecting yourself from chemical hazards.



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