Working Safely With Reactives

Highly reactive materials are among the most dangerous substances around. Special caution must be taken when working with them. Reactives are chemicals that can, under certain conditions, release very large and potentially dangerous amounts of energy. Some reactives explode at the slightest movement and others explode on contact with air. The kinds of reactions that can be expected under various conditions include:

AIR REACTIVITY—how likely a substance is to ignite or release energy when exposed to air. The higher the reactivity, the greater the danger.

WATER REACTIVITY—how readily a substance reacts with water. Some materials, such as sulfuric acid, react explosively with water.

CATALYSTS AND INHIBITORS—substances that increase the rate of a reaction are catalysts. Inhibitors are substances that slow down a reaction. Inhibitors may be added to highly reactive substances to make them more stable.

OXIDATION ABILITY—the ability to give off oxygen. Oxidizers give off large amounts of oxygen, increasing the rate at which nearby combustible materials burn.

POLYMERIZATION—an often violent chemical reaction in which large molecules are formed from many small molecules.

SAFETY RULES FOR REACTIVES

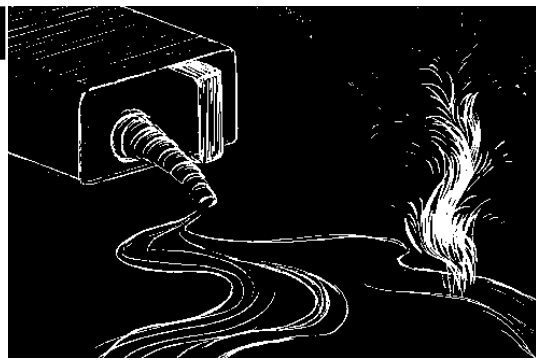
- **Keep all oxidizers far away from all flammable and combustible materials in a room that's fire-resistant and free from vibrations and shocks.**
- **Avoid bumping or jostling containers.**
- **Make sure containers of oxidizers are tightly sealed and clearly labeled.**
- **Read the hazard label and the material safety data sheet (MSDS) before using any reactive chemical.**
- **Make certain all containers housing reactive chemicals are in good condition, free of cracks and leaks.**
- **Clean up any spills immediately if you're trained to do so. If you're not sure, ask your supervisor.**

Responding to Emergencies Involving Reactives

Reactives are highly dangerous chemicals that can easily cause fires and explosions if handled or stored improperly. It's important that you know what to do in case of an emergency involving a reactive. Use the following safety guidelines when responding to such an emergency:

- If you spill a small amount of an oxidizer or flammable, immediately clean it up and remove it according to your training.
- If a large spill occurs, evacuate the area and report the spill immediately.
- A large spill should only be cleaned up by a trained emergency response team that has the equipment and tools designed to protect them and prevent accidental fires and explosions.
- Know your employer's emergency plan and evacuation route.
- Know when to use a fire extinguisher and which one to use in a reactive emergency.
- Read the MSDS for each substance before you work with it or clean it up.
- Get medical help if needed.

REACTIVES AND YOU



- What reactives do you work with?

  _____
  _____
  _____

- What precautions do you take in handling each one?

  _____
  _____
  _____

- How do you clean up a small spill? _____
  _____

- Where are the nearest eyewash stations? _____
  safety showers? _____
  fresh-air sources? _____