



EXERCISE

EXERCISE 1:

Title: Reactive Chemicals | *Hazard Awareness*

Target Audience: All employees who work with or around reactive chemicals

Exercise Objective: To highlight hazards of reactive chemicals

Instructions: Have trainees complete the worksheet below. Then discuss the results as a group and answer any questions.

1. What health hazards are associated with reactive chemicals?

2. What safety hazards are associated with reactive chemicals?

3. Where can you find the most reliable information about chemical health and safety hazards?

4. List four different kinds of reactive chemicals and explain how each can be hazardous.



GUIDANCE:

Title: Reactive Chemicals | Hazard Awareness

1. Reactive chemicals can cause irritation or burns to skin, eyes, nose, throat, and respiratory tract. Some chemical reactions generate poisonous fumes and gases, which can cause dizziness, vomiting, convulsions, and death. Other chemical reactions can cause asphyxiation (lack of oxygen) and death.
2. The two main safety hazards associated with reactive chemicals are fire and explosion. Some reactions can be very quick and violent. Employees can be injured or killed in a fire or explosion. Structures and equipment could be damaged or destroyed.
3. The most reliable safety and health information about any chemical can be found in the safety data sheet (SDS). Labels also provide much useful information, but they are not as complete and detailed as the SDS.
4. Reactive chemicals include:
 - Spontaneously combustible chemicals—react readily with oxygen in air, igniting and burning even without an ignition source
 - Peroxide-forming chemicals—react with oxygen in air to form unstable peroxides, which can explode if concentrated
 - Water-reactive chemicals—react with water or humidity in air; reactions can produce flammable, corrosive, or toxic gases
 - Oxidizers—readily yield oxygen or easily react to promote or initiate fires
 - Self-reactive chemicals—react without contact with air, water, or other chemicals; reactions can be very rapid and explosive
 - Incompatible materials—react with one another if they come in contact; reactions can cause fires, explosions, release of toxic or corrosive gases