**Objective: Identify the information provided on the Material Safety Data Sheet.**

**Trainer’s Note**

Safety conditions increase when on-the-job hazards are known. The Material Safety Data Sheet (MSDS) is a good reference for information on hazardous substances. For this module:

• Review the typical information on an MSDS.

• Review a sample MSDS for a hazardous substance used by your own workers.

• Use the sample MSDS to guide a discussion on the hazards identified in the MSDS.

• Explain the training on hazardous chemicals you provide.

• Review the important points.

• Have workers take the True/False quiz to check their learning.

**Background**

The Material Safety Data Sheet (MSDS) provides information on hazardous materials and wastes. Chemical makers must provide an MSDS for each product. Distributors must get the MSDS to employers. It must be available to workers exposed to hazardous substances. An MSDS is required at greenhouses and nurseries with more than 11 full- or part-time workers. Keep at least one copy of the MSDS with the chemical.

**What Is in an MSDS?**

MSDSs provide vital information to different people on the job:

* Workers who use, handle, and store hazardous substances.
* Employers who must provide safe storage and appropriate Personal Protection Equipment (PPE).
* Emergency personnel who respond in case of a spill, accident, or physical injury. These can include fire fighters, hazardous material crews, and medical personnel.

MSDSs are not all the same. They can be organized in a number of different ways. Some MSDSs have only eight or nine sections; others may have 12 or 14. However, any MSDS should include these types of information:

* Product identification

1. Formal chemical name and make-up
2. Trade name on the label
3. Name and locations of the manufacturer and distributor
4. Emergency telephone number(s)

* Hazard identification

1. Amount of hazardous ingredient that causes ill effects
   * Threshold Limit Value (TLV) — maximum average concentration recommended over an eight hour workday.
   * Permissible Exposure Limit (PEL) — exposure limit set by the Occupational Safety and Health Administration (OSHA); enforced by law.
   * Lethal Dose Concentration (LD50) — dose that kills 50 percent of test animals in experiments.
2. Overview of information for emergency personnel
3. Ill effects of acute ocular, oral, dermal, or inhalation exposure
4. Chronic effects of long-term exposure

* First-aid procedures

1. What to do in case of acute exposure
2. Instructions to medical personnel for emergency procedures

* Handling and storage procedures

1. Hygiene
2. Temperature control
3. Ventilation

* Personal Protection Equipment (PPE)

1. Personal eye protection to avoid ocular exposure
2. Rubber gloves, rubber boots, long-sleeve shirt, long pants, and face shields to avoid dermal exposure
3. Respiratory protection to avoid inhalation exposure
   * Fire and explosion hazards and procedures
   * Procedures for cleaning up spills and leaks
   * Disposal information

**How to Use an MSDS**

* Find out where MSDSs are kept in your workplace. Find out how they are filed so you can find the one you want.
* Look over the format of each MSDS to see how information is presented.
* Find out how to make the MSDS available to emergency personnel, if necessary.
* Find out what PPE is required to handle the substance.
* Find out what procedures are needed for safe handling — hygiene, temperature control, ventilation.
* Look for information on ill effects of acute exposure. Find out what symptoms you should look for when you handle the substance.
* Find out what first aid procedures to use for acute exposure.
* Find out how to handle a spill or a leak.
* Find out how to store the substance safely when you finish the job.
* Ask your supervisor any questions you still have about how to handle the substance safely.

**Employer Training**

Employers must provide information and training to workers who might be exposed to hazardous chemicals. New workers must be trained before they first work with a hazardous chemical. And all workers must be trained when a new hazard is introduced to the workplace. All workers should find out what training their employer provides. They should also make sure they receive all the training they need.

**Review These Important Points**

* The MSDS provides critical details about the substance it describes.
* The MSDS lists hazardous ingredients and other health hazards.
* The MSDS identifies Personal Protection Equipment required for the substance.
* Workers must receive training on hazardous chemicals.

**Verbal Quiz**

1. Workers must be trained about chemical hazards on the job. **T F**

2. The MSDS helps to protect employees. **T F**

3. There is no standard form for an MSDS. **T F**

4. An MSDS contains information on hazardous materials and wastes. **T F**

5. An MSDS describes chemical hazards and how to work with the chemical safely. **T F**

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| Answer Key | |
| 1 | T |
| 2 | T |
| 3 | T |
| 4 | T |
| 5 | T |