Hazard Communications—Material Safety Data Sheets (MSDS)

The Occupational Safety and Health Administration's (OSHA) hazard communication standard ensures that the hazards of all chemicals produced or imported are evaluated and that information concerning their hazards is transferred to employers and employees. This transmitted information can be accomplished through a hazard communication program, which includes container labeling, MSDS, and other forms of warnings, such as employee training. A chemical inventory of hazardous chemicals is generally created so that the MSDS can be obtained for each hazardous chemical used in the workplace. MSDS are required to have specific information, and can be used as a means to communicate this information to employees who will be using these hazardous chemicals in the workplace.

What is a Material Safety Data Sheet (MSDS)?

The Material Safety Data Sheet (MSDS) is detailed information prepared by the manufacturer that assesses the hazards of the specific chemical, including the physical and chemical properties, health hazards, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures. Information on an MSDS aids in the selection of safe products and helps prepare employers and employees to respond effectively to daily exposure situations as well as to emergency situations.

Where do employers obtain MSDS forms?

Chemical manufacturers or importers provide MSDS assessing the hazards of chemicals with the first shipment of any hazardous chemical product which they produce or import, and upon request. MSDS may also be obtained from the distributors that sell the materials or from resources found on the Internet.

How are MSDS used?

Employers use the MSDS to provide their employees that are exposed to hazardous chemicals with effective information and training. Employees must be trained on the physical and health hazards of the chemicals in the workplace, the measures they can take to protect themselves, and emergency procedures for cleaning up a spill or release of chemicals.

What information is required on an MSDS?

MSDS must be written in English and contain the following information:

1. **Chemical Identity:** Name of the product, including the common name if one exists.
2. **Manufacturer's Information:** Name, address, phone number, and emergency phone number of the manufacturer.
3. **Hazardous Ingredients/Identity Information:** List of hazardous chemicals. Depending on the state, the list may contain all chemicals even if they are not hazardous, or only those chemicals that have OSHA standards. Since chemicals are often known by different names, all common (trade) names should be listed. The OSHA Permissible Exposure Limit (PEL) for each hazardous ingredient must be listed.
4. **Physical/Chemical Characteristics:** Boiling point, vapor pressure and density, melting point, evaporation rate, etc.
5. **Fire and Explosion Hazard Data:** Flash point, flammability limits, ways to extinguish, special firefighting procedures, and unusual fire and explosion hazards.
6. **Reactivity Data:** How certain materials react with others when mixed or stored together.
7. **Health Hazard Data:** Health effects (acute=immediate; chronic=long term), ways the hazard can enter the body (lungs, skin, eyes, or mouth), signs and symptoms of exposure, emergency and first-aid procedures, and any medical conditions that are generally recognized as being aggravated by exposure to the chemical.
8. **Precautions of Safe Handling and Use:** What to do in case materials spill or leak, how to dispose of waste safely, how to handle and store materials in a safe manner, appropriate hygienic practices, and protective measures to be used during the repair and maintenance of contaminated equipment.
9. **Control Measures:** Ventilation (local, general, etc.), type of respirator/filter to use, other appropriate engineering controls, work practices or personal protective equipment (PPE) such as gloves, safety glasses, or goggles, face shields, aprons, etc.
10. **Primary Routes of Entry:** inhalation, absorption, etc.
11. **Emergency and First-Aid Procedures:** what actions to take in case of emergency/first aid; may include information such as flushing with water, removal to fresh air, etc.