3.3.5 Material Safety Data Sheets (MSDS)

Material Safety Data Sheets provide valuable information on hazardous chemicals and must be stored in an orderly fashion and readily available for all chemicals in the laboratory. The MSDS information is useful for establishing parameters for a safe workplace and is invaluable if emergencies involving the chemical occur. It is the responsibility of the laboratory supervisor to maintain the MSDS and have appropriate instructions to find them in the need of emergency or special situations like spills. A copy of the MSDS has to be submitted to the department of Environmental Health, Safety & Risk Management along with the annual chemical inventory list. For every new chemical purchased the MSDS list has to be updated with the EHS&RM.

A Material Safety Data Sheet (MSDS) is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It is an essential starting point for the development of a complete health and safety program. It also contains information on the use, storage, handling and emergency procedures all related to the hazards of the material. The MSDS contains much more information about the material than the label. MSDSs are prepared by the supplier or manufacturer of the material. It is intended to tell what the hazards of the product are, how to use the product safely, what to expect if the recommendations are not followed, what to do if accidents occur, how to recognize symptoms of overexposure, and what to do if such incidents occur.

If you do not have the MSDS for any chemical:

- Call the manufacturer
- Click on the free MSDS link on the website of EHS&RM (http://hq.msdsonline.com/sfasu/Search/Default.asp)
- For further assistance call EHS&RM at 468-6034

A MSDS usually will have the following structure: (some MSDS might provide more information)

1. **Chemical** Identity or Name.
2. **Manufacturer’s** name, address, telephone number and emergency telephone number. Date the MSDS was prepared and an optional signature of the preparer.
3. Lists the **hazardous** components by **chemical** identity and other common names. Includes OSHA PEL (**Permissible Exposure Limit**), ACGIH TLV (**Threshold Level Value**) and other recommended exposure limits.
4. Physical/Chemical Characteristics like **boiling point**, **vapor pressure**, **vapor density**, specific gravity, **melting point**, **evaporation rate**, **solubility** in water, physical appearance and odor.
5. Fire and explosion hazard data, **flash point** (and method used to determine it), **flammability limits**, **extinguishing media**, special firefighting procedures, unusual fire and explosion hazards.
6. Reactivity Data like Stability, conditions to avoid, incompatibility (materials to avoid), hazardous decomposition or byproducts, hazardous polymerization (and conditions to avoid).

7. Health hazard data like routes of entry (inhalation, skin, ingestion), health hazards (acute = immediate and chronic = build up over time), carcinogenicity (NTP, IARC monographs, OSHA regulated), signs and symptoms of exposure, medical conditions generally aggravated by exposure, emergency and first aid procedures.

8. Precautions for safe Handling and use, like Steps to be taken in case material is released or spilled, waste disposal method, precautions to be taken in handling or storage, other precautions.

9. Control measures like respiratory protection (specify type [see respirators], ventilation (local, mechanical exhaust, special or other), protective gloves, eye protection, other protective clothing or equipment, work/hygienic practices.