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EH&S Fact Sheet
Environment, Health and Safety Information for the Berkeley Campus

No. 24
Revised 9/13/04

Material Safety Data Sheets (MSDSs)

Introduction

Material Safety Data Sheets (MSDSs) can help you work safely with chemicals by providing important information regarding health hazards associated with the chemicals. MSDSs also describe what safety precautions to take when working with a chemical and recommend emergency procedures for spills, fire, and first aid.

Before attempting to work with an unfamiliar chemical, be sure to read its MSDS. Consult with your supervisor or the Office of Environment, Health & Safety (EH&S) if you have specific questions concerning MSDSs or the chemicals in your work area.

How to Get MSDSs

The California Hazard Communication Standard requires that MSDSs be available to all employees during all shifts. If your work area does not have MSDSs for the chemicals that you use, contact the manufacturer or EH&S to request a copy. Alternatively, you can obtain MSDSs through the EH&S website at http://www.ehs.berkeley.edu. Click on "MSDS" under the "Resources" button.

Although they may vary in length and appearance, MSDSs are required to have nine sections cover the following subjects:

1.0 Chemical Identification
This section includes the chemical name, trade name, common names(s), chemical formula and the chemical manufacturer's name, address and emergency phone number.

2.0 Hazardous Ingredients
This section lists any hazardous ingredients found within the chemical. In this section you might also see the terms TLV (Threshold Limit Value) and PEL (Permissible Exposure Limit). Both terms are used to express the highest airborne concentrations of a chemical to which most persons can safely be exposed during a normal workday. The CAS (Chemical Abstract Service) numbers listed in this section identify specific chemicals according to information published by the American Chemical Society.

3.0 Physical Data
This section lists important physical properties of the chemical such as its color, appearance, boiling point, vapor pressure, vapor density, and volatile components. This information helps determine the degree of hazard associated with the chemical. For example, vapor density describes the weight of a vapor relative to an equal volume of air (air=1). If a chemical has a vapor density greater than 1, its vapor will be heavier than air and tend to fall and concentrate near the floor.

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4.0 Fire and Explosion Data
This section helps you determine the chemical's flash point, which is the temperature at which a chemical will release enough flammable vapor to ignite. Chemicals that ignite at or below 100°F are classified as flammable. In addition, this section usually describes the chemical's upper and lower flammability limits, proper types of extinguishing media required to safely extinguish the fire (e.g., carbon dioxide, water, foam), special fire fighting procedures, and any unusual fire or explosion hazards.

5.0 Health Hazard Data
This section describes health effects associated with overexposure to the chemical through ingestion, inhalation, and skin or eye contact. The information may include the acute (immediate) and chronic (long-term) effects of overexposure to the chemical and whether the chemical is a known carcinogen (cancer-causing agent). It will suggest emergency and first aid procedures to follow in case of overexposure and describe medical conditions that may be aggravated upon contact with the chemical.

6.0 Reactivity Data
The information in this section helps you determine what other chemicals or conditions might affect the chemical. Chemical that are reactive (unstable) may explode, burn, or release toxic substances under certain conditions. This section usually tells you if the chemical is stable or unstable and lists any chemicals or substances that might be incompatible with the chemical.

7.0 Spill or Leak Procedures
This section lists the procedures to follow when a chemical is accidentally released or spilled. It will also cover types of clean-up and protective equipment needed to safely contain or clean up a spill, as well as proper ways to dispose of the chemical.

8.0 Special Protection Information
This section lists the personal protective equipment (respirators, gloves, eye protection) and other precautions the manufacturer recommends for work with the chemical. Remember, certain protective equipment is specially designed for specific tasks. Consult your supervisor and/or EH&S to ensure you are using the correct type for the work you are performing.

9.0 Special Precautions
The last section usually discusses special precautions to be taken during handling and storage of the chemical. It may also discuss any other health and safety concerns that have not been mentioned elsewhere in the MSDS.

EH&S can provide training to departments on how to use MSDSs and other aspects of chemical safety at no charge. For more information, contact EH&S at 642-2073.