

## How to Read and Understand an MSDS

Material Safety Data Sheets (MSDSs) can help you work safely with chemicals. They provide important information regarding health hazards associated with the use of chemicals. MSDSs also describe what safety precautions to take when working with a chemical and give emergency procedures for spills, fire, and first aid. MSDSs can also be used to compare products available for a particular job to determine which product is the safest to use.

Before attempting to work with a chemical you are unfamiliar with, be sure to read its MSDS. Consult with your supervisor or Risk & Compliance Services if you have specific questions concerning MSDSs or the chemicals in your work area.

Although they may vary in appearance and length, MSDSs are required to have nine sections, which explain the proper ways to use, handle, and store chemicals in your work area. A description of the kinds of information each section contains follows:

### 1.0 Chemical Identification

This section includes the chemical name, trade name, 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 boiling point, vapor density, percent volatile, appearance, and color. This information helps determine the degree of hazard associated with the chemical in different work environments. 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.

### 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 100deg.F are classified as flammable. In addition, this section usually lists the chemical's upper and lower flammability limits, proper types of extinguishing media required to safely extinguish the fire (example: carbon dioxide, water, foam, etc.), 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, whether the chemical is a known carcinogen (cancer causing agent), emergency and first aid procedures to follow in case of overexposure, and medical conditions that may be aggravated upon contact with the chemical.

### 6.0 Reactivity Data

The information in this section helps you determine if the chemical will react with other chemicals or under certain conditions. Chemicals 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, etc.) and other precautions the manufacturer recommends for work with the chemical. Remember, there are various types of protective equipment that are specially designed for certain tasks. Consult your supervisor and/or Risk & compliance Services 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. Also, this section will usually discuss any other health and safety concerns that have not been mentioned elsewhere in the MSDS.

### **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 Risk & compliance Services to request a copy. (When you purchase a new chemical, send a copy of its MSDS Risk & compliance Services for the campus master file.)

### **Chemical Spills**

Department employees may clean up small chemical spills incidental to normal work practices. Employees who clean up moderate spills in their work area are to be specifically trained in spill cleanup procedures and to wear personal protective equipment. Information on spill cleanup can be found on MSDSs. Contact Chandra Gowda for assistance in establishing spill cleanup procedures. ***Call University Police Department at 924-2222 for large and/or toxic chemical spills.***

Any questions please call.

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