

## **MSDS 101**

### **You need to know**

By Gary Rubell  
Cleaner Times  
September 2001

As a safety consultant, I am always working with companies that use materials that are hazardous. Some of these companies use them directly in the manufacturing process, while others use them for maintenance in their facilities or others. Sometimes these hazardous materials need to be mixed or applied in a public place possibly exposing numerous people to them. No matter how or where they are used, they are all potentially hazardous in some way. Knowledge and protection from the hazardous qualities of these materials is crucial for everyone involved.

The most often used source of information we turn to is the label. We go there because it's right there in our hand or in front of our face. It quickly tells us about the product's hazards. We might see that the material is flammable or corrosive, but how much do we really know at that point? Should we be seeking out more knowledge when we see this type of label warning? The answer to both is "Yes!". In order to do this, we need to access and review the Material Safety Data Sheet (MSDS).

What is that? This is how many of the employees in the working world today may respond. This is because many of the employers don't have them available, or, if they do have them, the employees don't know where they are or how to use them.

This is the goal of the article—to bring this information back to the forefront of employee knowledge and communication in your work place and safety program. Acquiring and maintaining the most recent versions of all MSDSs could avoid many unnecessary accidents and exposures. The key is teaching everyone why they are available, where to find them, and how to use them.

First off, you should know that all hazardous materials and even some not so hazardous materials have Material Safety Data Sheets. For example, I have seen MSDSs for purified water, hand lotion, and white out. At the same time, they are available for acetone, alcohols, and all other potentially harmful chemicals and materials. They are even now available for wood products that contain pesticides and preservatives.

The next thing you need to know is that all manufacturers are required to make and provide MSDSs for their products if they have any potentially hazardous qualities in them or in the making of the product. You will not always just get the MSDS. You may have to request it from the manufacturer. Small quantity and retail purchases usually will not come with an MSDS, unless you ask.

Now, let's get into the MSDS and what separates it from just labels. The MSDS is a greatly expanded version of the materials label and contains information that is not even

included on a label. The information is broken down into sections that provide specific answers and details about the material. The sections are not always in the same order, but the overall contents are the same. The sections are as follows:

### **SECTION 1: Identity**

In this section, you will find the manufacturer's name and address and/or the supplier's information. It will also list the emergency phone number and the date that the MSDS was prepared. This is important for making sure that you have the most recent version in your file.

### **SECTION 2: Hazardous Ingredients**

In this section, you will find the substance's hazardous ingredients, broken down by percentages. You will also get information on worker exposure limits to the chemical, such as the OSHA PEL (permissible exposure limit) and TLV (threshold limit value); other recommended limits are also included. The only time you won't find the specific ingredients of a chemical is when it's protected as a trade secret. The MSDS will still tell you about its hazards and the safety measures required.

### **SECTION 3: Physical and Chemical Characteristics**

The following information will be located in this section:

- Boiling point
- Vapor pressure
- Vapor density
- Melting point
- Evaporation rate
- Water solubility
- Appearance and odor under normal conditions

These pieces of information will help you in choosing the proper place to store and use these materials and to know more about the material if it gets spilled or is leaking.

### **SECTION 4: Physical Hazards**

This section covers things like fire and explosion and ways to handle those hazards. There is specific information about handling fires and explosions, such as fire fighting equipment and procedures. It tells you what type of extinguisher to use on the materials.

### **SECTION 5: Reactivity Data**

This section tells you whether the substance is stable. You will learn which other substances, materials, and situations to keep it away from to prevent reactions. Reactions can vary from fire to explosion to gas clouds and more.

## **SECTION 6: Health Hazards**

In this section, you will learn how the chemical could enter the body, for instance:

- By inhaling through airborne exposure,
- Through the skin with direct and indirect contact, or
- By swallowing through contact with your mouth.

You will learn about the possible health hazards that could come from exposure. If the chemical is believed to be a carcinogen (cancer causing), that will also be listed. This section also covers signs and symptoms of exposure such as eye irritation, nausea, dizziness, skin rash, headaches, existing medical conditions that could be aggravated by exposure, emergency and first aid procedures if an accident happens, or any other special precautions.

It is important to be aware of these symptoms before they occur. In many cases, if they start to occur, it is too late to address the situation.

## **SECTION 7: Precautions for Safe Handling and Use**

In this section the MSDS will cover the following information:

- What to do if the substance spills or leaks,
- How to dispose of the substance,
- Equipment and procedures needed for cleaning up spills and leaks,
- How to handle the substance properly,
- How to store it safely, and
- Any other precautions.

It is important to know how to react in a spill situation and to have the proper materials for spills on hand before a spill occurs. The fire department will often have these materials for spills, but, often they are not on scene soon enough to restrict the spill like you could.

## **SECTION 8: Control Measures**

In this section, protection measures to reduce harmful exposures are listed. You will find what type of equipment to use for protecting yourself, such as

- Respirators, including dust masks, cartridge masks and air supply systems;
- Gloves of all types;
- Eye protection of all types;
- Protective clothing, aprons, and shoes; as well as
- Ventilation to use when handling the particular material.

Special work or hygiene practices that should be followed will also be included in this section.

As you can see, there is a lot to be learned by using an MSDS. The most important is knowing how to protect yourself while using the material and knowing how to deal with exposure if it occurs. The MSDS will give you specific information about first aid procedures in the event of an exposure. It may tell you to wash out your eyes for 15 to 20 minutes if the material gets into your eyes. It may tell you to go out to a fresh air location if the fumes make you dizzy. Again, all of this should be known in advance of using the materials.

Every company should establish specific procedures for handling and training employees in the use of hazardous materials. It can be the difference between life and death in some cases.

*Gary Rubell is a senior safety consultant with 15 years of experience. He is currently working with the Compliance Management Group, which serves business and industry nationwide in complying with mandated regulations through its network of consultants, which serves business and industry nationwide in complying with mandated regulations through its network of consultants and Web site at [www.safetycomply.com](http://www.safetycomply.com). The firm can be reached at 888-467-4262.*