

Using Material Safety Data Sheets (MSDS)

Today, the Occupational Safety and Health Administration (OSHA) requires that all chemical manufacturers provide detailed product information to their customers through Material Safety Data Sheets (MSDS). The sheets are excellent tools that help workers safeguard themselves from any harmful affects that could result from working with chemicals. As a printer, you should never allow any new chemicals to enter your shop unless an MSDS is provided. Read the MSDS and use them. In addition, the sheets must be made easily accessible to all employees.

A MSDS as specified by OSHA Form 174 should contain eight separate sections. MSDSs range from one-page, one-sided, documents to four- and six-page printouts, but they usually all include the same sections, which are as follows:

Section #1 Manufacturer's Identity

The first section lists the chemical manufacturer and/or importer, along with the contact information, including the company's address, phone number and emergency telephone number.

Section #2 The Hazardous Ingredients

Federal law requires that manufacturers reveal those elements in their formula, which pose a health hazard. Hazardous elements are sometimes referred to by different names, depending upon the manufacturer. Ethylene glycol, for example, is used in a number of pressroom products and is referred to by a variety of names. Therefore, Chemical Abstract Service (CAS) numbers, which give each hazardous element a permanent number, are also included to avoid confusion. Those elements contained in the formula that are not hazardous and are considered trade secret information do not have to be listed.

Also listed in this section is the safe limit of exposure to the formula - the lower the exposure number, the more hazardous the material. Ingestion of chemical is also discussed, with the information provided on the dosage level that will prove fatal if ingested.

Section #3 Chemical and Physical Characteristics

This part of the MSDS discusses the physical form, color and odor of the chemistry and ingredients. For example, information on the boiling point or melting point and the evaporation rate of the chemistry are included. Information on the products vapor pressure and solubility in water is also included here.

Section #4 Fire and Explosion

The flashpoint and explosion limits of the formula are listed in the fourth section. When dealing with a chemical that has a flashpoint above 200°F, there will be no flammable warning. A chemical with a flashpoint between 100° and 200°F is considered combustible - and one with a flashpoint below 100°F, flammable. Those chemicals that list low explosion limits on the MSDS require special handling measures, such as the grounding of all containers and the use of explosion-proof electrical connections. Also included in this section is information on the prevention and handling of possible fires.

Section #5 Reactivity

The reaction of the chemical to water, air, or other chemicals is discussed here. Check to see if any of the elements in your shop that may come in contact with the formula are listed as reactive with the formula.

Section #6 Health Hazard Data

There are four channels through which the human body can be exposed to chemistry: inhalation, ingestion, in the eyes or through the skin. Section #6 describes the symptoms that occur when the chemistry is taken in through those channels. This section may also list any carcinogens contained in the formula, and provides detailed First Aid and emergency procedures.

Section #7 Precautions for Safe Handling and Use

Here, correct methods of storage, handling and disposal are discussed, and instructions are provided on what to do in case of accidental chemical spill or release. This section can be used to develop an emergency plan of action to prepare all plant workers in case of an accident.

Section #8 Control Measures

Types of protective clothing, gloves, respiration devices and proper ventilation for working with the chemistry are outlined here. Read this section and comply with it! I know of a number of people who thought protective measures were not for them - and they are sorry now. If the MSDS instructs you to use gloves - use them! MSDS are great tools that can be use by the printer, not only to protect his or her employees, but also to form safety plans, evaluate the content and reaction of chemistry on press, and determine the amount of hazardous chemistry that may be allowed in the print shop. For many of you reading this article, the safety of your employees and possibly yourself, is in your hands. Take time to know what chemicals are in your plant and how to properly handle them. I wish you all a long and healthy life.