Hazard Communication Pocket Handbook

Published and distributed by
GENIUM PUBLISHING CORPORATION
One Genium Plaza
Schenectady, NY 12304-4690
(518) 377-8854

Editor
Michael Cinquanti

ISBN 0-931690-96-x
Printed in the United States of America

8/97

Table of Contents

I. Introduction

Why Do You Need This Handbook?

Because you like who you are, love your family, hate pain, despise suffering, and want to enjoy the rest of your life. Any or all of the above is reason enough. If not, then the following information should grab you.

Every single work day, about 400 American workers are injured or become ill from harmful on-the-job exposures to hazardous materials. Injured or ill enough to miss at least one day of work as a result. And that's just private industry employees. Add in all the public employees and you get a pretty sobering picture.

Hazardous material exposures are a serious threat to working America. Thousands of lives have been ruined due to workplace chemical exposures. You've been given this Handbook to help ensure

II. How Chemicals Can Hurt You

— This chapter answers the following questions —

- What is a chemical hazard?
- What are physical hazards of chemicals?
- What are health hazards of chemicals?
- What are acute and chronic effects of chemicals?
- How do chemicals enter my body?
- How does dose and a person's physical characteristics help determine the hazard of a chemical exposure?

One of the most important things you need to learn is that there's a world of difference between 'chemicals' and 'hazardous chemicals'. For instance, how do you think most people would describe chemicals? Probably as some mysterious liquids bubbling in big vats or glowing green slime oozing out of pipes in an industrial plant, right? Most people associate chemicals with materials in bottles, cans, and drums produced by industry, but actually, all matter (the 'stuff' composing our world) is chemical in nature. Chemicals are everywhere!

Not all chemicals are hazardous. For example, water (H_2O) and table salt (NaCl) are chemicals found in your daily life, and they're not usually considered hazardous. In fact, your body depends on the presence of hundreds of different chemicals in its tissues and blood every day to keep you functioning properly. On the other hand, some chemicals have hazardous properties that can cause injury, illness, or even death, as well as damage to property or the environment if handled improperly.

What Makes a Material Hazardous?

According to the Occupational Safety and Health Administration (OSHA), a chemical is considered hazardous if it is:

III. Laws That Protect You From the Hazards of Workplace Chemicals

— This chapter answers the following questions —

- What is OSHA?
- How does OSHA's *Hazard Communication* standard help protect employees from the hazards of workplace chemicals?
- What other OSHA standards protect employees from on-the-job exposures to chemicals?
- What is EPA?
- What environmental laws affect the way chemicals are handled, stored, disposed, and transported?

OSHA

The Occupational Safety and Health Administration (OSHA) was established by the United States Department of Labor as the government agency responsible for the safety and health of employees in the workplace. The law establishing the agency, known as the *Occupational Safety and Health (OSH) Act* of 1970, became effective April 28, 1971. However, it wasn't until 1985, when the *Hazard Communication* standard went into effect, that chemical safety jumped to the top of the safety agendas in manufacturing workplaces. Congress expanded the scope of the standard in 1988 to cover millions of additional people, including construction workers, health care employees, utility workers, and transportation workers.

OSHA has jurisdiction over safety and health in all private-sector establishments where there are employees. For public-sector establishments most states have agencies that enforce OSHA standards or adopt their own, sometimes more restrictive safety and health standards.

IV. Exposure Limits

— This chapter answers the following questions —

- What are exposure limits?
- Who creates exposure limits?
- Which exposure limits should I know about?
- What are the OSHA PELs?

———————————

The Occupational Safety and Health Administration (OSHA) lists approximately 450 substances as air contaminants. OSHA limits exposure by inhalation of the vapors, dusts, or mists of these air contaminants by establishing permissible exposure limits (PELs). Unlike other recommended exposure guidelines, such as the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs) and the National Institute of Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), OSHA PELs have the power of law.

Most of the exposure limits described in this section are guidelines, not absolute boundaries between safe and hazardous conditions. Think of them as the speed limit signs posted on the roads you travel. Speed limits are laws put in place to protect drivers and pedestrians. If a road restricts you to 30 mph, no reasonable person would say

V. How to Detect the Presence of Chemicals In Your Workplace

— This chapter answers the following questions —

- How can I recognize the possibility of chemical hazards?
- What are some of the symptoms of exposure to chemical hazards?

———————————

OSHA's *Hazard Communication* standard requires that your employer prepare a hazardous materials inventory for your workplace. This inventory should list every hazardous material that you could be exposed to during your work day. Recognizing these materials and understanding how they can hurt you is one of your most important jobs. Knowing when these exposures could take place is equally important.

The Hazardous Materials Log beginning on page 208 is designed to hold hazard identification and protection data for twelve materials. Complete a page of this log for each chemical you are potentially exposed to on the job, and you'll have, at your fingertips, the critical information you need to effectively protect yourself from the hazards of these chemicals. If you need help compiling the log, ask your supervisor to assist you. ***Note****: If you are exposed to more than 12 hazardous materials in your workplace, please make as many copies of the Hazardous Materials Inventory pages as you need.*

Recognize Common Hazard Warnings

On pages 5 to 8 of this Handbook, you reviewed the health and physical hazards OSHA specifically

VI. How to Protect Yourself From the Potential Hazards of Workplace Chemicals

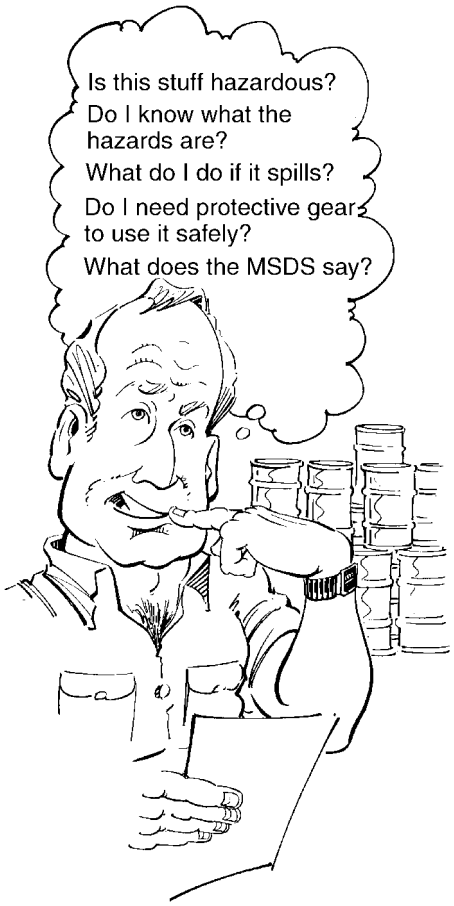
— This chapter answers the following questions —

- What are the basic rules I should follow when working with chemicals?
- How do I read and use an MSDS?
- How do I read and use container labels?
- What is PPE and how does it protect me from chemical hazards?

———————————

Here are some basic safety tips that you should always keep in mind before, during, and after working with a hazardous material:

1. **Think Safety First.** Think about your safety before doing a job. Find out from your supervisor which of the materials you work with or near are hazardous. Be sure you know what the hazards are before you start working, so you can prepare yourself and the work area with the necessary safety precautions.
2. **Know What You're Working With**. Become familiar with the hazardous materials you work with. Read MSDSs and container labels to know what you should or shouldn't do when working with a hazardous material. Know how the material can hurt you or others, under what conditions it can hurt you, how to avoid these conditions in your work area, and should these conditions occur, what you must do to safely and effectively respond.
3. **Know Emergency Responses.** Know the location of emergency phone numbers, first aid supplies, appropriate fire extinguishers, eyewash stations, showers, etc. In most cases, the quicker you react to a hazardous material exposure, the less damage will result.

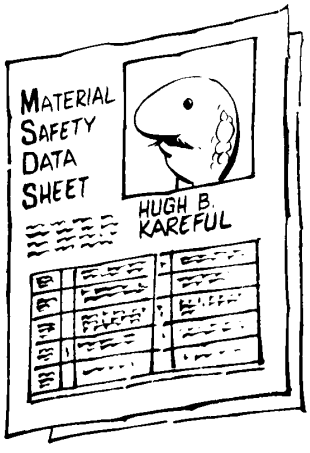


4. **Follow All Safety Procedures.** Always follow the rules and procedures for working with hazardous materials. If you're supposed to wear a respirator for a certain job, wear it. Don't ignore warning signs and labels; read them carefully and follow them. People just like you have been seriously injured because they were in a hurry or took safety for granted.
5. **Report Dangerous Activities or Situations.** Smoking around flammable solvents is a dangerous situation. Pay attention to the way other workers handle hazardous materials around you. If you think they're

doing something that presents a hazard, tell your supervisor. Safety is everyone's responsibility.

6. **Practice Good Housekeeping and Personal Hygiene.** Keep your work area clean and free of any chemical residues. If a chemical spills or leaks through a container, get it safely cleaned up as soon as possible. Wash your hands before a coffee break or lunch time and when you go home, even if you were wearing gloves while handling chemicals. Take off any protective clothing you wear on the job and wash thoroughly before you leave. Make sure all contaminated clothing and equipment is properly decontaminated. Take home your paycheck, not hazardous material residues!
7. **If You Don't Know . . . ASK!** If the safety procedures don't appear to protect you from the hazards, ask questions. If the name of the material on the container label doesn't match the name of the material on the MSDS, tell your supervisor right away. If you think you're experiencing symptoms of overexposure to a hazardous material, report them to your supervisor immediately.

Material Safety Data Sheets



The main objective of material safety data sheets (MSDSs), like everything else you've reviewed, is to protect you. They provide you and your employer with concise information about the hazards of the materials you work

VII. Tradename Products - The Ultimate Disguise

— This chapter answers the following questions —

- How do I determine if a tradename product is a potential chemical hazard?
- How can I protect myself from the hazards of tradename products?
- What are the hazards associated with the types of tradename products commonly found in the workplace?

One of the biggest problems in the workplace today is getting people to recognize that many of the tradename products they use on-the-job are really hazardous materials. It's hard enough to train employees to work safely with *pure* solvents like benzene and acetone, but it's even more difficult to do so when these solvents are an *ingredient* in the product.

Many tradename products are nothing more than chemicals in disguise.

Once a chemical is no longer 100% pure and becomes simply an ingredient in another product, it's no longer labeled as that chemical; in effect, it becomes *disguised*. Here's an example: When you pick up a bottle of "Mr. Clean-n-Bright" toilet bowl cleaner, the fact that it might

VIII. Responding Safely to Emergency Situations Involving Hazardous Chemicals

— This chapter answers the following questions —

- How do I determine if an emergency is minor or major?
- What should a first aid kit contain?
- How can I perform simple first aid procedures for minor emergencies involving chemicals?
- What should I do in the event of a minor or major chemical spill?
- What should I do in the event of a minor or major fire involving chemicals?

———————————

Accidents still happen in spite of a good safety program, training, and use of precautions. All of these will help reduce the number and seriousness of accidents, but nothing can prevent all accidents. That's why every safety program includes emergency response.

Glossary of Terms and Abbreviations on Labels and MSDSs

Absolute. A chemical substance relatively free of impurities, e.g., absolute alcohol.

Absolute Pressure. The total pressure within a vessel, pipe, etc., not offset by external atmospheric pressure. See psia, psig.

Absorb. To soak up. The incorporation of a liquid into a solid substance, as by capillary, osmotic, solvent, or chemical action. See Adsorb.

ACGIH. American Conference of Governmental Industrial Hygienists. An organization of professionals in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH develops and publishes recommended occupational exposure limits for chemical substances and physical agents (see TLV and BEI). (1330 Kemper Meadow, Cincinnati, OH 45240; [513] 742-2020.)

Acid. An inorganic or organic compound that:
1) is usually corrosive to human tissue and must be handled with care;
2) has a pH of less than 7.0;
3) neutralizes bases (alkalis) to form salts;
4) dissociates in water yielding hydrogen or hydronium ions;
5) may react with metals to yield hydrogen; and
6) turns litmus paper red.

Acidosis. A condition of decreased alkalinity of the blood and tissues. Symptoms may include sickly sweet breath, headache, nausea, vomiting, visual disturbances; usually the result of excessive acid production. Tissues and CNS functions are disturbed.

Acrid. Irritating and bitter (usually referring to smell).

ACS. American Chemical Society. Professional society that establishes standards of purity for a number of reagents, e.g., the ACS Reagent Grade. They publish *Chemical Abstracts* and a host of professional journals and magazines dealing with various areas of chemistry, chemical engineering, and allied sciences. (1155 Sixteenth St., N.W., Washington, DC 20036; [202] 872-4567.)

Hazard Communication Reference Log

Personal Information:

Name: _____

Home Address: _____

_____

_____

Home Telephone: _____

Social Security Number:

_____

In Case of Injury or Illness Notify:

Name: _____

Relation to you: _____

Address: _____

_____

_____

Home Telephone:

_____

Work Telephone: Ext.

_____

Alternate Name: _____

Relation to you: _____

Address: _____

_____

_____

Home Telephone:

_____

Work Telephone: Ext.

_____

Company Information: