Millard Refrigerated Services
Hazard Communication/MSDS
Training Outline - JANUARY

Meeting Objectives
To review the basic elements of Millard's Hazard Communication Program and the availability and location of hazard communication information, such as Material Safety Data Sheets (MSDS). The result should be greater understanding of the purpose and application of OSHA's Right-to-Know regulations. The meeting should focus on the use of ammonia as the refrigerant in the warehouse and its' hazards, as well as the MSDS for battery acid.

Suggested Materials to Have on hand:
- MSDS Book
- Sample MSDS for Ammonia and Battery Acid
- Written Hazard Communication Program.

Introduction/Overview
Chemicals are certainly useful, on the job and off. But as we all know by now, many chemicals are hazardous to your health if you are exposed to too much of them or if the exposure is too direct.

Our safety training programs provide you with information on these chemicals and with procedures and equipment that reduce the chance of exposure. But to make sure everyone gets that kind of information and protection, and to provide a uniform way of delivering it, OSHA came up with the Hazard Communication Standard. The basic point of the Standard is that you have a **right to know** about hazards you face on the job and how to protect yourself against them. Ammonia is the most important chemical that you need to be aware of in the warehouse because of the amount that is present and the fact that is flows throughout the warehouse in the ammonia pipes, evaporator units in the freezer and on the dock, and in the motor room.

OSHA has developed a basic MSDS form in an attempt to provide everyone with a common source of all the facts known about each hazardous chemical used in companies in the United States. While companies are not required to use the OSHA form, they are required to provide all the same information about the hazardous substances they produce. Each MSDS tells you:
- What the chemical is and the vendor and vendor address
- Why the chemical is hazardous
- How you can be exposed to the hazards and what conditions could increase the risk
- How to handle the substance safely
- What protection to use while working with it
- What to do if you're exposed
- **How to handle a spill or emergency**

General Hazards
The Hazard Communication Standard is specifically concerned with chemical hazards—the chemical's **physical and health** risks to people.
A chemical may have three basic physical hazards:

1 . **Fire**. You have to know if a chemical could, in a liquid, gas, or vapor form, catch fire and under what circumstances.
2 . **Explosion**. You also have to know if there are circumstances under which a chemical might explode.
3 . **Reactivity**. This is the potential of a chemical to catch fire or explode if it's combined with other chemicals or with water or air. You need to know what the chemical should be kept away from and what situations to avoid.

You also have a right to know about any health hazards, which can be anything from a skin rash to lung cancer.

The Standard makes sure you are informed about the possible health hazards of any given chemical, the symptoms to watch out for, and any existing medical condition that the chemical might make worse.

OSHA Regulations and Frequent Violations
The Hazard Communication Standard (29 CFR 1910.1200) is a very detailed regulation, which sets out specific requirements for chemical manufacturers, companies that use chemicals, and employees who use chemicals or could be exposed to them in the course of their jobs.
The chemical manufacturers are responsible for determining the physical and health hazards of the products they make and providing that information on container labels and material safety data sheets.

Employers have a number of responsibilities. They must:

- Have a written hazard communication program
- Explain the OSHA Standard, the program, and how it works to employees
- Provide employees with information and training on the hazardous chemicals they use, including their hazards and protective measures to take to use them safely.

Employees have responsibilities under the Standard, too. You are expected to:

- Participate in training
- Read labels and MSDSs and follow safety procedures.

Identifying Hazards
The whole purpose of Right to Know is for you to be able to readily identify hazards and know what to do to protect yourself from them.

It's best to assume that any chemical you work with is hazardous unless you can prove otherwise. And keep in mind that "chemical" is a broad category. Some of the things you use at home are hazardous chemicals, too—including many cleaning solutions, oven cleaners, solvents, etc.

You should be able to identify the hazards of any chemical before you use it with two key Hazard Communication tools:

- **Container labels** have to provide you with basic information on the chemical's hazards and on the basic procedures and protective equipment you should use when working with it. The label probably also has basic handling and storage instructions and some first-aid information.
- **Material safety data sheets** have all the details—everything you ever considered knowing about the chemical, its hazards, and instructions for safe handling, use, disposal, and storage. There is also information on what to do if the chemical spills or leaks and first-aid instructions to follow in the event of an accident.

Our material safety data sheets are kept (**explain location and show the book**).
If you want to know more about the Standard and the ways in which this company is complying with it, we have a written hazard communication program that you can review. It's kept in the Safety Manual. To review it, speak with your supervisor.

Now let's go through an MSDS section by section. (**Use the ammonia or battery acid MSDS**)
Section 1: Chemical identity. The first part of the MSDS identifies the chemical, using the name that's on the label. This section also tells you who makes or sells it and how to reach them for information or in an emergency. It may also say when the MSDS was prepared, so you know how up-to-date it is.
Section 2: Hazardous ingredients/identity. Here you find out about any hazardous ingredients in the chemical by their scientific and common names. Sometimes, if the ingredients are a trade secret, this information won't be revealed. But the MSDS still must include information on hazards and required safety measures.
Section 3: Physical/chemical characteristics. Here's where you find out about factors that could affect the degree of hazard.
It explains the chemical's normal appearance and odor. Anything different should alert you to possible danger.
Section 4: Fire and explosion hazard data. This section, too, helps you judge hazard risk, using a few scientific terms to determine what circumstances could cause a fire or explosion.
Section 5: Reactivity data. Here's where you find out what could happen if this particular chemical is combined with other particular chemicals or with air or water. A chemical that's water reactive or air reactive, for instance, could react to contact with those substances by releasing flammable or toxic gases.
Section 6: Health hazard data. I'm sure you'll want to find out how any chemical could affect your health, so read this part of the MSDS carefully. It tells you a number of important things.
You'll find out how the particular chemical on the MSDS could enter your body, which could be:

- Inhaling
- Swallowing
- Through the skin.

Then it lists specific possible health hazards—what could happen as a result of being exposed to the chemical. Keep in mind that these are possible health hazards, not things that will absolutely happen.
This section explains whether the health effects are:

- Acute (show up right after exposure, like skin burns), or
- Chronic (develop over time or over repeated exposures, like lung cancer).

Section 7: Precautions for safe handling and use. The MSDS doesn't just tell you why to be careful with a chemical; it also tells you how.
This section first explains what to do if there's a spill, leak, or other accidental release of the chemical. It also tells how to safely dispose of the substance and provides precautions to take to protect yourself and others when you handle and store the chemical.
Section 8: Control measures. This is a very key section of the MSDS because it explains how to protect yourself when you work with the chemical

(**Go over the MSDS for ammonia with your employees in detail**)
Ammonia is a chemical that, under certain conditions, can explode and it can also burn. Ammonia is a stable chemical, but it can react to other chemicals, such strong acids. In addition, ammonia can react with chlorine, bromine, mercury, silver and hypochlorite to form explosive compounds.

Ammonia can present some fairly serious health hazards if you are exposed to high levels. Repeated or prolonged exposure to concentrations greater than the **300 ppm** IDLH level for ammonia may cause permanent injury or death. At **35 ppm** (the OSHA Permissible Exposure Limit), however, the pungent odor of ammonia is detectable by most people and serves as its own warning. No person will voluntarily remain in concentrations which are hazardous or injurious to health.

EYE:

Eye contact of ammonia vapors or liquid can cause corrosion, pain and redness. Ulcerations of the conjunctiva, cornea and lens and opacities may occur.

SKIN CONTACT:

Repeated or prolonged contact with high concentrations of ammonia can cause corrosion, frost bite, redness, pain and serious skin burns.

INGESTION:

Ammonia ingestion can cause burns, nausea, vomiting and severe irritation.

INHALATION:

Ammonia vapors are pungent and can be suffocating. They are extremely irritating to the mucous membranes and lung tissue. A sore throat, coughing, shortness of breath and labored breathing can develop.

Protection Against Hazards
Right to Know is valuable because it not only lets you know about hazards, it makes sure you know how to protect yourself from them. It's important to remember that there is no one sure protection for every chemical. You have to check the label and the MSDS of each chemical you work with so you know what to do to work safely with that chemical. However, except for the plant engineers, most Millard staff will not be directly exposed to hazardous chemicals.
If you are going to be exposed to hazardous chemicals, remember these rules that apply.

- Read the label and MSDS. That way, you know in advance what could go wrong and what to do about it.
- Check the physical hazards. If a chemical has a fire or explosion risk, you want to know the circumstances so you can be sure to avoid them. And if the chemical is reactive, you

want to keep it away from other chemicals, or even air or water, if that's what would cause the dangerous reaction.

- Use the protective and clothing equipment specified on the MSDS, for example, when changing batteries. Protective clothing and equipment are the best line of defense between you and the chemical's health hazards. If the danger comes from possible inhalation, you'll need respiratory protection. If there's a splash danger, wear safety goggles. If you want to make sure the chemical doesn't touch your skin, wear the clothing recommended. Be sure to follow the recommendations, though. Gloves or other clothes that may be great protection against one chemical may disintegrate with another.
- Check the handling and storage instructions—and follow them.
- Follow the recommended hygiene practices. If the MSDS tells you to shower after working with the chemical, do it. If it says you need good ventilation when working with that chemical, make sure the area's ventilation is operational before you start the job.
- Know what to do in an emergency. Check that materials you might need to clean up a spill, for instance, are available. Be sure you know who to call and what to do if the worst happens.

Safety Procedures

Most of what you need to know about the chemicals you work with is on the label and MSDS. But in addition to checking them before any job, there are a few safety basics that apply to all chemicals.

- Follow manufacturer's instructions for chemicals and equipment.
- Follow company procedures on all jobs—no shortcuts!
- Keep chemical containers closed when not in use.
- Check containers regularly for leaks.
- Keep flammable and explosive materials away from heat sources.
- Check protective clothing to be sure there are no rips or tears before putting it on.
- Work with a buddy on any potentially hazardous job.
- Keep food, drinks, and cigarettes out of the work area.
- Wash thoroughly before eating, drinking, or smoking.
- Clean tools, equipment, and clothing that have been exposed to hazardous chemicals before they're used again.
- Dispose of all contaminated materials properly.

Wrap-Up

The Hazard Communication Standard is a very significant regulation for anyone who works with hazardous chemicals.

It ensures that every chemical we get comes with full information on its potential hazards. Even more important, the Standard gives you the right to know how to protect yourself when you work with those chemicals. Between the information provided by the manufacturer on labels and MSDSs, the protective equipment, ventilation, and training our company provides, and your own increased knowledge and understanding, you can feel secure that you really can work with chemicals safely.

Sample Handout

Hazard Communication Standard Checklist

- ¨ Know where the written Hazard Communication Plan is kept.
- ¨ Participate actively in hazard communication training.
- ¨ Always read labels and MSDSs before starting any job with a hazardous chemical.
- ¨ Keep chemical containers closed when not in use.
- ¨ Keep the chemical away from situations that could cause it to burn, explode, or have a dangerous reaction with another chemical, air, or water.
- ¨ Wear the protective clothing and equipment recommended on the MSDS.
- ¨ Check clothing before putting it on to make sure it's in good condition.
- ¨ Follow all company procedures on all jobs.
- ¨ Follow the handling, storage, and disposal instructions on the MSDS.
- ¨ Be aware of possible emergencies that could arise with the chemical and be prepared to handle them.
- ¨ Wash before eating, drinking, and smoking if you've been working with a hazardous chemical.
- ¨ Ask about any hazards, procedures, equipment recommendations, or emergency response measures you're not sure you understand.