



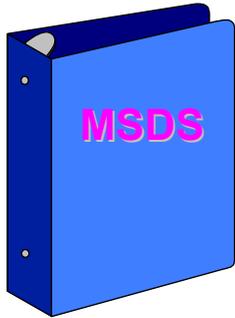
# NSF SAFETY DEPARTMENT

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## SAFETY & HEALTH NEWSLETTER



### UNDERSTANDING AN MSDS



The Material Safety Data Sheet (MSDS) is the cornerstone of any hazard communication program. It's packed with information on the particular hazardous chemical it covers. Understanding an MSDS can play a major role in helping workers stay safe and healthy. To help improve understanding of this vital document, here are definitions of terms of what they mean to people who work with hazardous chemicals.

**Exposure Levels** - Permissible exposure level (PEL) is the maximum concentration of the chemical in the air, averaged out over an eight-hour day, during a 40-hour workweek, to which OSHA believes a person can be exposed repeatedly without developing health problems.

**Physical & Chemical Characteristics** - These terms explain what will make a chemical change form.

**Boiling point** is the temperature at which a liquid boils or, in other words, changes from a liquid to a gas. **Evaporation rate** tells you how long it takes the chemical to evaporate. **Melting point** is the temperature at which a chemical changes from a solid to a liquid. **Freezing point** is the temperature at which a chemical changes from liquid to solid. **Solubility** in water tells you how much of the chemical will dissolve in water. **Specific gravity** compares the density, or weight, of the chemical to the density of water, which has a relative value of 1. **Vapor density** compares the density of the chemical's vapor to the density of air that has a relative value 1. **Vapor pressure** measures a liquid's volatility—which means how easily it evaporates (releases vapor).

**Fire & Explosion** - These terms explain the fire and explosion hazards associated with the particular chemical.

**Flammable limits** are the minimum and maximum amounts of vapor concentrations in the air (by percent) that can catch fire. **Flash point** is the lowest temperature at which a flammable liquid's vapors are concentrated enough to catch fire if they come in contact with an ignition source (such as a spark). **LEL and UEL** are the lower and upper explosive limits—the minimum and maximum concentrations of the chemical's vapor in the air that will explode if exposed to an ignition source.

**Reactivity Data** - This term tells what the chemical will react.

A chemical labeled water reactive reacts to contact with water. Hazardous polymerization results when certain chemicals (known as "monomers") react with themselves to release heat energy, which can lead to explosion. Incompatibility means that when this chemical is mixed with other substances (which will be listed), a hazardous reaction will develop.

### Other Terms

**Carcinogenicity** means the tendency to produce cancer, or contribute to the likelihood of cancer. **Combustible liquid** is a liquid chemical whose flash point is at or above 100 degrees F, but below 200 degrees F. **Flammable liquid** is a liquid with a flash point below 100 degrees F. **Organic peroxide** is a compound with oxygen bonded to each other. It's very unstable, with explosion as a risk. **Oxidizers** are chemicals (other than blasting agents or actual explosives) that create or promote fire. An oxidizer contains a lot of oxygen and may release oxygen or other gases, which can cause fires. Oxidizers are particularly dangerous because they can create fire if they just get near a combustible material such as wood or oil soaked into concrete.

### OFFICE HAZARDS



When we think about job hazards, we usually picture a factory setting. But a surprising number of accidents occur in the office. So it's worth being aware of the hazard potential in an office. That way you can be alert, avoid accidents, and maybe even help the people who work in the offices improve their safety knowledge and practices.

#### General Hazards

Some of the most common types of hazards in an office are:

**Slips, trips, and falls** due to slippery or uneven floor surfaces or torn carpet or linoleum, **Electrical shock or fire** due to excessive use of extension cords, overloaded electrical outlets, cords with frayed insulation, **Poor housekeeping** due to cords, boxes, and other materials in aisles, **Back injuries** due to improper lifting, **Poor workstation design**, **Open file or desk drawers**, etc..

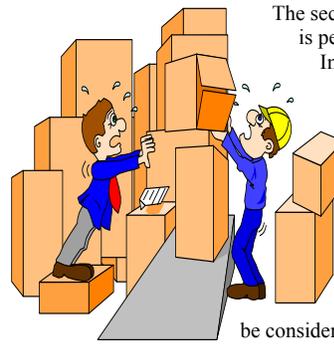
#### Other Unsafe Acts

Standing on furniture or boxes rather than a ladder or step stool to reach high places - carrying loads you can't see over - smoking in unauthorized areas - running in aisles, halls, or on stairways - throwing objects or other horseplay, etc..

#### Protection Against Hazards

As you can see, there really are a lot of possible hazards in an office especially if you don't recognize risky conditions and actions. The key is to keep your eyes open, just as you would in your own work area. The best protection against office hazards is good housekeeping. Keeping things in their place will help avoid many of those risks and prevent accidents.

### MAKING ZERO ACCIDENTS OUR GOAL



The secret to an ongoing zero accident record is personal commitment and communication.

Imagine a workplace that never had an accident again a workplace where employees never suffered another injury. An impossible dream?

Maybe not. At one company

I know, the safety director told the workers that only a zero accident frequency was going to be tolerated. Rather than considering themselves successful if there are only a few accidents, every accident is going to

be considered a failure. "It's a matter of attitude," the safety head told them. And, this is what the workers had to say.

**An office clerk:** It's ultimately everybody's responsibility because safety is personal. But we have to look out for one another, too. **A machinist:** You won't catch me running a machine without my safety glasses on. I just won't do it. And I yell at the others to put theirs on. **A welder:** Everyone needs to be involved in safety. If you exclude someone, they'll get hurt. **A service technician:** Safety must be the consciousness of everyone in the company. It helps if everyone gets along and the 'mood' is positive. **A mechanic:** The secret to a good safety record is being aware. You have to think about it every day. But the worker needs the go-ahead from the top to do the job safely."

These are the actual words of the workers at a company that is aiming for a no-accident goal. We can have a zero-accident goal here, too, if we all put our minds to it and make it a commitment. Why not make a no-accident record your own personal aim? You know your job and you know how to be safe. You know as much as the workers whose words you just heard. Stay safe today, tomorrow, next week, and a week from now. Accidents don't "just happen." They don't have to happen at all.

## FORKLIFT

Forklifts are specialized, multiuse vehicles. They can do many tasks that require heavy lifting, moving, stacking, loading and unloading materials of varied sizes, shapes, and weights that would be difficult to handle without them. However, forklifts are dangerous if people who are familiar with the equipment—and with the safety rule that such equipment demands does not operate them.

### General Hazards

To drive a forklift safely, you have to understand the possible risks—and know just what to do to avoid accidents. Forklifts have several main hazards that can result in injury or even death for drivers or pedestrians. The biggest dangers are that the forklift might:

- Tip over
- Fall off a loading dock
- Collide with a vehicle, equipment, or person
- Drop a load.



You cannot judge all those possible hazards unless you are well trained in the operations of the particular vehicle. The most important of all the requirements states that **only trained authorized people can operate forklifts**, and they must follow very specific safety procedures as they perform every part of their jobs.

Operating a forklift is serious business. OSHA expects trucks to be inspected regularly and carefully and professionally maintained. It is a good idea to check the machine daily before use. You want to be sure everything is working properly and is in good shape. Follow procedures from the manufacturer's manual and those set by the company.

Like any tools, forklifts are a great help if you use them correctly. In addition, like any vehicles, they will function safely for a long time if they are well maintained and are operated properly. The message here is that only skilled, knowledgeable people who respect the equipment and care about safety must operate forklifts.

## HANDLING COMPRESSED GASES

Compressed gas, under control, can be extremely helpful in performing many tasks. Out of control, it can cause serious injury—even death. So, before you use compressed gas cylinders, be sure you know the facts. That way you'll be in control, and *you'll* be doing your share in keeping yourself and your co-workers from harm. Compressed gases can be corrosive, combustible, flammable, explosive, toxic, or all of these combined. Cylinders must be legibly marked for identification purposes. If you cannot determine the contents of a particular cylinder, don't use it. Notify your supervisor, the storeroom or the supplier. You should also be familiar with the hazards associated with whatever gas you're going to be working with. Always secure cylinders when in use, in storage, and in transport. If you notice that a cylinder is not secured, secure it yourself or let someone know. And when a cylinder is not in use, it should have its protective cap on. If the cylinder valve is knocked off, the cylinder will take off like a missile. Keep the cylinder away from all forms of fire- and spark-producing operations and electric lines. A compressed gas cylinder should never be exposed to such excessive heat that its outside surface exceeds 125°F. Don't drop or bang cylinders together violently. Never use cylinders as rollers to move material.

### When storing compressed gas cylinders, keep a few facts in mind:

- ✓ Never mix cylinders. For example, don't store propane cylinders and oxygen cylinders together.
- ✓ Compressed gas cylinders must be stored a minimum of 20 feet from combustible material such as grease, oil, paint, etc.
- ✓ Mark cylinders when they are empty, and avoid storing them with full ones.



When using compressed gas cylinders, always use the correct regulator for each particular bottle. Open the bottle valve slowly, and don't use tools to force it open. Never take a compressed gas cylinder into a confined space.

**Remember these rules and reduce the hazard of unguided missiles.**

## ERGONOMICS CAN PREVENT INJURIES



Many companies now give a lot of attention to ergonomics – the science of workplace design that tries to make the job fit the person rather than the other way around. We now recognize that making the same motion repeatedly can cause physical problems. One of the most common of these problems is carpal tunnel syndrome (CTS), which results in pain and numbness in the wrists and hands.

**Making the job fit the person:** The goal is to prevent repetitive motion injuries. Ergonomics reduces physical strain by redesigning tools and equipment, reorganizing workstations, changing lighting, etc. Ergonomics reduces strain by cutting back on the stress and the number of repetitive motions performed on the job.

The earlier you identify a repetitive motion problem, the more likely you are to be able to do something about it. Encourage workers to promptly report any pain or soreness. Be especially alert to carpal tunnel symptoms like numbness, tingling, and an apparent loss of strength in the wrist and hands.

**Limit repetitive motions:** The best form of prevention is to limit the time any worker spends doing the same motion repeatedly. Your options may include: **Job rotation** - Strain on any part of the body is reduced when you switch periodically to different tasks involving different movements. **Breaks** - Make sure that no worker performs a repetitive motion task for more than a couple of hours. **Pacing** - A repetitive motion performed at a breakneck pace means more motions—and more problems.

**Tools & Equipment:** Hand tools are designed to fit everyone, which means that they may not fit everyone well. If you detect that problem in any of your workers, talk to your purchasing department about getting tools that fit them better. At the very least, try to redesign jobs so that workers get breaks from using an awkward tool. Sometimes just the way equipment is arranged can cause problems.

**Exercise:** Exercise is an important part of a repetitive motion prevention program. It's a good idea to include stretches before they start work. Workers who do many repetitive motions on the job may benefit from specific finger-stretching. Report any symptoms such as pain or swelling in the wrist or arm, or problems moving the forearm or wrist. Ergonomics—and attention to tasks and equipment that could cause problems—can spare employee and employer a lot of pain and trouble. If a problem is not diagnosed and handled early, the worker may never be able to go back to the tasks that caused the injury. Therefore, the best solution is to expend the effort to avoid problems in the first place.

### THE FOLLOWING IS THE SAFETY DEPARTMENT'S ACTIVITIES FOR SEPTEMBER 2003

- Enlisted Safety Committee Meeting – 4 Sep 03, 1500H @ NSF Conference Room.  
Target audience: All Safety Representatives
- Safety Representatives Briefing – 17 Sep 03, 1330H @ B-331 NSF Safety Training Room  
Target Audience: All newly designated Safety Representatives
- Hazardous Materials Coordinator's Briefing - 18 Sep 03, 1330H @ B-331, NSF Safety Training Room.  
Target Audience: All newly designated HazMat Coordinators
- Sep 2003 Occupational Safety & Health (OSH) Inspection: AF/Weapons & Various Air Force Facilities
- Island Indoctrination Class (Safety) – Bi-weekly, 0915H@ Acey Duecey Room, Turner Club Complex.  
Target Audience: All new personnel (mandatory for Officers, enlisted and civilian personnel).

### KNOW YOUR SAFETY STAFF:



Ronald W. Thornhill - Safety Officer  
Dave D. Cruz - Senior Safety Specialist  
Roy F. Villanueva - Safety Specialist  
Marilyn S. Satsatin - Safety Technician

There's always room for improvement.  
Visit us at <http://ice.disa.mil> and tell us how we can improve the island's safety program.

### Need report a Safety Hazard?

Call the NSF Safety Office at [extension 370-4123](tel:370-4123) or send email to the Safety Officer at [thornhill@dq.navy.mil](mailto:thornhill@dq.navy.mil)

Source: Safety Meeting Library