



RIGHT TO KNOW WORKPLACE NOTICE

The Commonwealth of Massachusetts
Department of Labor
Division of Occupational Safety

George Noel
Director

Laura Marlin
Commissioner

The **RIGHT TO KNOW LAW, Chapter IIIF** of the Massachusetts General Laws, provides rights to Public Sector employees* regarding the communication of information on toxic and hazardous substances. These rights include:

WORKPLACE NOTICE- A notice must be posted in a central location in the workplace informing employees of their rights under the law. The notice must be in the English language. In workplaces where employees' first language is other than English, the notice must be posted in that language.

TRAINING- Employers must provide an annual training program to employees who work with toxic or hazardous substances. New employees must receive training within thirty days from date of hire. The training program must be conducted by a competent person and may be in the form of verbal and/or written instruction. At a minimum, training must include an explanation of employee rights, information on how to read an MSDS, the specific hazards of the chemicals used, handled or stored in the workplace, the type of personal protective equipment to be worn, and information on labeling of hazardous substances. This training must be done with pay during the employee's normal work shift or work hours. A record of this training must be maintained by the employer.

MATERIAL SAFETY DATA SHEET (MSDS)- The Material Safety Data Sheet is the document that provides information on each toxic or hazardous substance used or stored in the workplace. An employee or his or her designated representative has the right to obtain and examine the MSDS for any toxic or hazardous substance to which the employee "is, has been, or may be" exposed, if the employee's request is made to the employer in writing. After four working days from the date the request is made, an employee can refuse to work with the substance under two circumstances:

1. The employer fails to: (a) furnish the employee with the MSDS and (b) furnish the employee with proof that the employer has exercised diligent effort to obtain the MSDS, either through the manufacturer or through the Deputy Director of the Division of Occupational Safety, or,
2. The MSDS provided by the employer is incomplete or outdated.

LABELING- All containers in the workplace of more than five pounds or more than one gallon, containing toxic or hazardous substances, must be labeled with the chemical name of the substance. Containers of mixtures must be labeled with the chemical name of each toxic or hazardous constituent when the constituents comprise one percent or more of the mixture. Containers must also be labeled with the appropriate National Fire Prevention Association (NFPA) symbol if available. Labels must be clear, prominent, in English and weather resistant. There are some exceptions to the labeling requirements for containers which are labeled in accordance with certain Federal laws.

NON-DISCRIMINATION- An employee who believes he or she has been discharged, disciplined, or in any other manner discriminated against by an employer for exercising rights granted under the Law, has one hundred eighty days following the violation of the Law or following the date on which he or she obtained knowledge that a violation occurred, to file a complaint with the Deputy Director of the Division of Occupational Safety. A copy of the complaint must be sent to the employer at the same time by certified mail.

NOTE- The employee rights listed above are further defined in Chapter IIIF of the Massachusetts General Laws and the Code of Massachusetts Regulations 454 CMR 21.00. Copies of the law and regulation can be obtained at the Statehouse Bookstore (Phone: 617-727-2834).

All Right-to Know Inquiries should be addressed to:
Division of Occupational Safety
1001 Watertown Street
West Newton, MA 02465
Phone: 617-969-7177
Fa-x: 617-727-4581

*Private sector employees in Massachusetts are covered by a similar regulation, the Hazard Communication Standard (29 CFR 1910.1200), enforced by the Federal Occupational Safety and Health Administration (OSHA 617-565-9860).

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Understanding MSDSs Your Right To Know

Under the Massachusetts Right to Know Law and the OSHA Hazard Communication Standard you are entitled to receive information about the toxic substances that are used or stored in your workplace. This information is available to you in the form of a Material Safety Data Sheet (MSDS) - a technical factsheet that describes the health effects and safe uses of the toxic products on the job. The MSDS is written by the product manufacturer who must give it to your employer. In turn, your employer must provide the MSDS to you, your union, or your doctor upon request.

The purpose of this newsletter is to be a guide to the sections of an MSDS and to help you become more familiar with the technical language you are likely to find. MSDSs may take many different forms, but the one used here is the one you will see most often. It is divided into eight sections. A few paragraphs of this newsletter are devoted to each section of the MSDS, and all the terms will be defined. Unless noted otherwise, both the Massachusetts and the OSHA standards require that each section be filled out.

The Massachusetts Right to Know Law defines approximately 2000 chemicals as toxic, and these chemicals make up the Massachusetts Substance List. Under the OSHA standard there is a base list of about 1200 chemicals; other chemicals must be evaluated by the chemical manufacturer to determine if they are toxic or hazardous. Any material sold to your employer that has any of its ingredients covered by the applicable law is a regulated material. If you are exposed to a regulated material, you are entitled to all the protections of the law.

There are three sources of information available to you under both laws: 1) material safety data sheets (MSDS); 2) container labels; and 3) employee training. The MSDS is the most important because it is the source of information for labeling containers and is the basis for training employees on the hazards of workplace exposures and safe handling practices for those chemicals.

Not all manufacturers will report information in the same way on an MSDS, so it is a good idea to check all sections for all the details. For more information on health problems associated with overexposure, it may be necessary to look up the chemical in another source. Because the MSDS may not be a complete source of information on the chemicals with which you work, be sure to ask your employer or trainer any questions that are not answered on the MSDS. MSDSs often have blank spaces in sections that should be filled out. Your employer should return such an MSDS to the manufacturer for more complete information.

The Right to Know and OSHA laws require that your employer train you to read an MSDS. If you have any further questions about MSDSs or your rights under the law, ask your employer, your union, your area Occupational Safety and Health Coalition (COSH group), or the Department of Labor and Industries.

MSDSs can be very useful tools in carrying out the goals of these two health and safety laws. The main goal is to prevent occupational disease by informing people about the hazards of toxic substances. Learning chemical identities, health effects and protection from the dangers listed on an MSDS can put you in a better position to correct or prevent potential hazards.

Occupational Safety and Health Administration:
The federal agency that sets limits on workers' exposure to
chemicals and enforces OSHA health and safety laws.

SECTION I: Product Identity

This section provides information you need to match the material safety data sheet with the corresponding product at the workplace. It lists the manufacturer's (or supplier's) name and address as well as the product name as it appears on the container label and on the workplace chemical inventory, if required by law.

- Identity - This is the name of the product as it appears on the label and the inventory of hazardous chemicals (if your workplace is covered by the OSHA Hazard Communication Standard). The inventory is a list of all the hazardous chemicals used or stored in your plant. Under the Hazard Communication Standard your employer must put this list together and update it regularly.

- Manufacturer's Information - This information includes the manufacturer's name, address and phone number, the date the MSDS was prepared, and an emergency phone number to call after business hours. If you have any questions about the information on the MSDS or want to know how the manufacturer determined the hazards, call the office phone number and ask to speak to the person or department that prepared the MSDS. The emergency phone number should be used for obtaining instructions in the event of an accidental exposure. Don't wait for an emergency Call ahead and find out what type of medical or other information they are prepared to give you.



SECTION II: Hazardous Ingredients

This is the most important section of the MSDS and should give you the information you need to do your own investigation of the physical and health hazards of the product.

If the product is a pure, single chemical, no ingredients need to be listed. If the product is a mixture, all the ingredients that are regulated, with a few exceptions, must be listed here.

Under the Massachusetts Right to Know (RTK) Law this section need only list those ingredients on the Massachusetts Substance List (MSL). If your workplace is covered by the OSHA Hazard Communication Standard, this section lists only those ingredients that the manufacturer has determined to be hazardous according to the definitions in the law. But, on a good MSDS all ingredients should be listed. However, the two laws only require that the manufacturer list hazardous materials that make up one percent or more of the product. An exception to this rule is for carcinogenic (cancer-causing) and other extremely hazardous ingredients: under the Massachusetts RTK Law the minimum that must be listed is 1 part per million (ppm), and under the federal standard it

is one-thousand ppm. The percentage composition (Parts of ingredients per 100 parts of product) of each ingredient in the mixture should also be listed; however, only under the Massachusetts RTK is this required.

It is important to get the exact spelling or the chemicals so that you can look up their effects in a chemical dictionary. It is also important to remember that chemicals that have very similar names (and very similar structures) often have very different effects on your health.

The CAS number, which stands for Chemical Abstracts Service number, is the best way of identifying a chemical with certainty. In general, each chemical has only one CAS number even though it may have several acceptable chemical names.

The Massachusetts RTK Law requires the CAS number to be written on the MSDS for each ingredient on the Massachusetts Substance List. The Hazard Communication Standard, however, has no such requirement. To find out the CAS number, you should ask your employer to contact the manufacturer, or you can call the Division of Occupational Hygiene (617-969-7177).

Under the Hazard Communication Standard the MSDS must list the limits of each ingredient to which you may be exposed; the Right to Know Law has no such requirement. There are two exposure limits: the PEL and the TLV. The PEL is the permissible exposure limit required by OSHA regulation; it is the maximum amount of a particular substance legally allowed in the workplace air. The TLV is the threshold limit value recommended by the American Conference of Governmental Hygienists (ACGIH); the TLV is not legally enforceable.

There are lots of other recommendations for exposure levels - from the National Institute for Occupational Safety and Health (NIOSH), from other countries and sometimes from the manufacturers.

- Remember: You can't always judge a chemical by its PEL or TLV because very few chemicals have been thoroughly tested for long-term health hazards, such as reproductive effects or the potential to cause cancer. Therefore, you should encourage your employer to make the lowest feasible level the standard in your workplace.

SECTION III: Physical Data

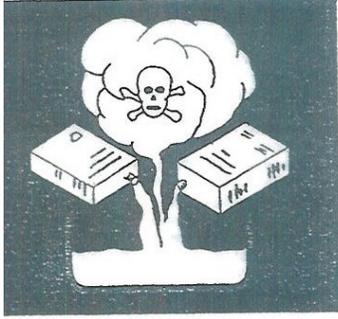
This section is important because it gives you the basic information about chemical properties needed to decide how to store chemicals, how to avoid or fight fires and how a chemical behaves. It also indicates what chemical state(s) (i.e., liquid, gas or solid) you will find a product in at the process temperatures and conditions used in your plant. This is important for predicting the most likely ways the chemical can get into your body (breathing it in, swallowing it, or absorbing it through the skin or eyes).

- Boiling Point - This is the temperature at which a liquid boils. Flammable liquids usually have a low boiling point which can present fire hazards. The boiling point, like the vapor pressure, is a good indication of how easily the product will evaporate and give off vapors. If the product is a mixture, the boiling point may be presented as a range (such as 10-30°C or 80-100°F).

- Vapor Pressure - At any given temperature, a certain proportion of a liquid will evaporate and form a gas. The pressure of that gas at the surface of the liquid is called the vapor pressure. The higher the vapor pressure, the more easily a liquid will evaporate and catch fire.

Liquid materials that evaporate easily are considered volatile liquids; this means that air concentrations of vapors can build up quickly, even though the substance you are working with is in a liquid form.

Incompatibility - This section provides a list of substances that should not come into contact with the chemical. Incompatible substances could react together to form a new hazard or may burn or explode and break down into new hazards.



Hazardous Decomposition or By-Products - This section lists the hazardous materials formed when the substance breaks down or decomposes under certain conditions. For example, carbon monoxide may be a by-product of the chemical reaction in a gasoline engine.

Hazardous Polymerization - This is a type of chemical reaction that occurs when the material is exposed to air, water, heat or other conditions that cause the release of a large amount of heat and, in some cases, toxic gas. Most materials that are likely to react in this way are treated with inhibitors, materials which can stop this type of chemical reaction. These inhibitors may be toxic, even though they are present in very small amounts.

If the "may occur" box is checked, special storage procedures must be given in the section, "Conditions to Avoid...". These procedures must be followed to prevent serious injury.

SECTION VI: Health Hazard Data

Despite the importance of this section of the MSDS, it usually lacks complete information. In other cases, all the symptoms of exposure are listed, but no information is given about what symptoms you will have at different levels of exposure. It is very important to know to what level you are being exposed so that you can use the information in this section. If all the ingredients are listed in Section 11, you can look up the health effects in another source.

Route's of Entry - Before a chemical can cause health problems it must get into the body. There are three ways hazardous substances can enter your body:

Inhalation: Substances can enter your body through your lungs. Gases, mists, vapors, and fumes are all inhaled.

Skin Absorption: Many chemicals cause damage where they contact the surface of the body - the skin and eyes. Certain chemicals can be absorbed through the skin and then enter the blood stream. Occasionally, vapors can also be absorbed by the skin. For example, even if you use a respirator during a spray painting operation, the paint vapors can get through your skin unless special protective clothing is also worn.

Ingestion: Workers may swallow chemicals and dusts when they are transferred from workroom air to cigarettes, food, coffee, make-up, etc.

Health Hazards - This part describes the harmful effects of the substance on your health. These health hazards may be acute hazards (short-term) or chronic health hazards (long-term).

How do you find out if you have a right to know? Under the OSHA Access to Information Act, you have the right to know the health and safety information about the chemicals in your workplace.

Contact 1-800-455-6113 for more information on the Right to Know Act.

Acute and Chronic Effects of Common Workplace Hazards

	Acute	Chronic
Asbestos	Mild respiratory irritation, cough and sneezing	Asbestosis, cancer of the lung, pleura, larynx, stomach and intestines
carbon Monoxide	Drowsiness, headache, confusion; and in very high amounts: unconsciousness and death	Heart attacks and strokes
Trichloroethylene	Light-headedness, euphoria, drunken, feeling, numbness, nausea and vomiting	Liver, kidney and brain damage; possibly liver cancer

An acute effect usually means a serious but temporary effect from exposure. That effect can usually be reversed if the exposure is not repeated.

The term "chronic health effect" usually describes a health condition that has gradually developed and is difficult to reverse. Often, there are no noticeable signs or symptoms in the early stages. Sometimes the illness may take many years, even decades to appear. When the disease is finally felt or noticed, it is often difficult to recover the function that is lost, although further disability or worsening of disease can often be prevented.

Some chemicals have both acute and chronic health effects, depending on the way the exposure is experienced over time. The table included on this page provides some examples of these acute and chronic effects.

Some illnesses are difficult to classify in one category or another. Cancer, for example, may be initiated by short periods of acute exposures but take many years to develop and are considered chronic illnesses.

Data sheets must tell you about both kinds of health effects - chronic and acute. But since so little is known about the effects of continual, low-level exposures, most of what you can learn from an MSDS will be about short-term reactions to high exposures.

Carcinogenicity - Carcinogenicity is the ability of a substance to cause cancer. Many experts agree that there is no safe level of exposure to cancer-causing chemicals (carcinogens). Even so, reducing your exposure reduces your risk. Therefore, it is important to avoid exposure as much as possible. Preferably, your employer will use a less toxic material instead of the carcinogen. If this is not possible, your employer may be able to enclose the process. Please see Section VII for control recommendations.

NTP: This refers to the National Toxicology Program, a federal program that tests over 100 substances that cause cancer in humans or laboratory animals.

IAAC: This refers to the International Agency for Research on Cancer. It has published several volumes reviewing the carcinogenicity of more than 200 chemicals.

OSHA-Regulated: This refers to the Occupational Safety and Health Administration. OSHA has exposure limits on approximately 500 chemicals, but regulates only a few as carcinogens. Many more are commonly recognized as causing cancer, but it takes a long time for OSHA to pass a legal standard on a chemical. If a substance is regulated by OSHA, you can request a copy of the standard from your area OSHA office. These standards include ways of measuring and reducing exposures. Some examples are air sampling, medical tests for workers, ventilation and other mechanical controls, respirators and protective clothing, and training on the hazards and safe handling of the carcinogen.

Words "acute" and "chronic" can also be used to describe an exposure. An acute exposure is usually a one-time exposure that has a high level over a short period of time. The term "chronic exposure" usually means a repeatedly low level of exposure over a relatively long period of time.

These sections are not required by the Emergency Right to Know Law, but if the chemical is a carcinogen, this fact must be mentioned at least under the "Chronic Effects" or "Health Hazards" section. Such information is included with a "Caution" or "Warning" label.

Signs and Symptoms of Exposure - Symptoms are what you feel from being exposed. Signs are what a doctor sees on examining you following exposure. For example, if you are exposed to paint thinner, you need to know that it can make you feel dizzy (symptom); you also need to know that with long-term exposure it can cause tremors (sign) and damage your nervous system (cause of the symptoms and signs). The dizziness is only a symptom of what is happening inside.

Medical Conditions Generally Aggravated by Exposure: Different people can be affected in different ways by the same exposure. Sometimes workers with a medical condition are affected more seriously than others, even at extremely low levels. For example, people with heart conditions can have serious health effects from much lower levels of carbon monoxide than people with no prior heart problems. Threshold limit values (see Section II) are set to protect the average worker and don't account for differences in the wide range of people exposed.

Emergency and First Aid Procedures - First aid should be described for all routes of entry. If no information is listed here, your employer should call the manufacturer before there is an emergency. If there is an emergency, get attention from the nearest doctor or nurse. Bring a copy of the MSDS so they have information on the chemical that caused the emergency.

SECTION VII: Precautions for Handling

Steps to Be Taken in Case Material Is Released or Spilled - Many MSDSs deal with this section by saying "avoid breathing gases and vapors" or "avoid contact with liquids." This is clearly insufficient. This section should give you information you need to plan an emergency evacuation, such as what types of emergency respirators to have on hand or how to plan routes of exit if a product produces a toxic gas.

It should also tell you how to handle smaller spills - whether to vacuum up the substance, use a special absorbing material, or neutralize with another substance. It is also important to know if protective clothing should be worn when cleaning up a spill.



Waste Disposal - Any special procedures that should be used for disposing of hazardous workplace materials are noted here. Dumping hazardous waste in the garbage or down the drain in an unlicensed land fill not only creates a problem for the surrounding community, it exposes the city or town disposal workers unnecessarily to unknown hazards. If you have any questions about disposal methods, you can contact the Environmental Protection Agency's special hotline number, 1-800-C24-9346.

• Precautions To Be Taken In Handling And Storing - This section may advise, for example, not to store acids and bases together, or organic chemicals around strong oxidizers, or to keep some chemicals in temperature-controlled areas.

• Other Precautions - This section is a catch-all for any special precaution; that may not have been discussed. Always check this section because sometimes information that should be listed somewhere else is only listed here.

SECTION VIII: Control Measures

The best control measures for chemicals are those that reduce or eliminate the problem at the source (before anyone can have contact with it). They are called engineering controls. Control measures, such as ventilation, have to be designed to fit the actual conditions of use and exposure. Personal protective equipment - respirators, clothing, goggles - should never be relied upon as the sole means of control. At best they may be appropriate if an exposure is occasional or until ventilation or other controls are installed. Seek advice from your union, from your area Occupational Safety and Health Coalition (COSH group), from OSHA, from NIOSH or from the Division of Occupational Hygiene to plan proper controls.

• Respiratory Protection - The type of respiratory protection recommended must be specific to the exposures in the workplace. If a product is a hazardous dust but you also work with a solvent at the same time, the type of respirator recommended on the dust MSDS may not also be suitable to protect against the solvent you are using. However, there are masks that protect against both.

It is also important to keep in mind that different levels of exposure require different kinds of respirators. For example, while a half-mask, air-purifying respirator may be adequate for a level of air contamination slightly above the recommended Of legal limit, a self-contained breathing apparatus (similar to scuba tanks) would be necessary for a contamination level that is life-threatening.

Even if you are using the proper respirator and are following the procedures for fitting, cleaning, medical testing, etc. required by OSHA standard 1910.134, there are cases in which respirators may not provide long-term protection. For advice on specific situations or substances contact one of the organizations listed above.

• Local Ventilation - This type of ventilation uses an exhaust fan at the end of an enclosure that draws the dust, fumes, gas, mist or vapors away from the source. If it works effectively, it will keep the surrounding air free from toxic levels. Examples of local exhaust are laboratory hoods and paint spray booths.



• Mechanical (General) Ventilation - This type of ventilation dilutes the chemicals in the air with clean air in a general area, room or building. A fan in the wall or ceiling is not very effective unless fresh air is brought in at the same time. A floor fan does not help much without additional ventilation. It moves the chemicals around, but does not remove them.

• Protective Gloves - Protective gloves should always be worn when working with material that can either be absorbed through the skin or damage the skin itself. The material used to make the gloves must be selected based on the properties of the combination of products with which you work. The MSDS should specify the appropriate glove material to use with each specific product.

• Eye Protection - Eye protection is important to wear if there is any danger of splashing or contact with corrosive substances or dusts. If eye protection is recommended, your employer should look for ways of redesigning the job to avoid contact and make eyewash fountains accessible to the work area.

• Other Protective Clothing or Equipment - Other protective clothing may be recommended if vapors can penetrate the skin, or if the danger of spills is great. Showers should be provided if there is a danger of contact and, as discussed under Eye Protection, efforts should be aimed at designing the job so that contact is avoided.

• Work/Hygienic Practices - This section may deal with things like washing hands before eating or leaving the area, restricting food or drink in work areas, keeping an area free of dusts or liquids. These are coping, not control measures, but may make sense as work rules in your area even after other controls are in place.

Comparison of MSDS Requirements: Massachusetts RTK and OSHA*

MARTK	OSHA	
		x = required - = not required
		Product Identity
		identity
x		chemical name
		chemical and common name (as listed on the label)
		manufacturer's information:
		name
		address
		telephone number
x		emergency telephone number
x		date compiled or revised
		Hazardous Ingredients (pure substance)
x	x	chemical name
x		common name
x		CAS number
		exposure limits (OSHA, ACGIH, other)
		Hazardous Ingredients (mixture)
	x	chemical names of hazardous ingredients
	x	common names of ingredients
		percentages of each hazardous substance
		CAS number for each hazardous substance
	x	exposure limits for each hazardous substance (OSHA, ACGIH, other)
		Physical Data
	x	boiling point
	x	vapor pressure
	x	vapor density
	x	solubility in water
	x	appearance and odor
	x	specific gravity
	x	melting point
	x	evaporation rate
		Health Hazard Data
x	x	routes of entry
x	x	health hazards (acute and chronic)
x	x	carcinogenicity
	x	MSDSs must indicate if chemicals are included in certain listings of carcinogens (NTP, IARC, OSHA)
x	x	signs and symptoms of exposure
x	x	medical conditions which might be aggravated by exposure
x	x	emergency and first aid procedures

*Only those sections of the MSDS that differ between the two have been indicated here.

Remember: You have a right to be fully informed of the chemicals used in your workplace. If you feel that any of your rights have been violated under the Massachusetts Right to Know Law, contact:

Massachusetts Division of Occupational Safety and Health
 1001 West Street, 11th Floor
 West 11th Street, MA 02165
 Telephone: 617-624-6200
 Fax: 617-624-6201
 OSHA Hazardous Waste Unit
 OSHA 617-565-9860