

Figure 3.4 Nonfatal Occupational Injuries and Illnesses with Days Away from Work by the Part of Body Affected, 2011. *Source: Bureau of Labor Statistics, U.S. Department of Labor; Nonfatal Occupational Injuries and Illnesses Requiring Days Away from Work, 2011.* <http://www.bls.gov/news.release/pdf/osh.2.pdf>.

Although many people think very little about safety in the workplace, a look at a few statistics shows that problems exist. As many as 5,703 people are killed in occupational accidents during a calendar year.⁶¹ Each year there are also as many as 4.3 million workplace injuries and accidents that do not result in death. This translates to approximately five injury cases for every 100 workers. Injuries and illnesses are most common in jobs such as transportation, manufacturing, and agriculture.⁶² Figure 3.4 shows that most of the injuries and illnesses involved problems with shoulders and backs.⁶³

Two major types of law provide employees with some assurance of safety and protection on the job. The first is a federal law passed in 1970, the Occupational Safety and Health Act. The second is not a specific law but a group of laws at the state level generally labeled workers' compensation laws.

OCCUPATIONAL SAFETY AND HEALTH ACT

Suppose an employee of a construction company works with chemicals that could cause blisters on his feet and hands. Does the company have an obligation to protect him from exposure to such chemicals? Is the company required to provide him with information about the chemicals? What are his rights as a worker who must use these chemicals? Such issues are the focus of the Occupational Safety and Health Act (OSHA), a federal law passed in 1970.⁶⁴ Compliance with these laws, and general efforts to promote employee well-being, not only reduce workplace accidents but also improve productivity.

Like most other laws affecting work practices, OSHA requires employers to keep records—in this case, about safety practices and incidents. Companies must have records of the information they provide to teach employees about the health concerns and dangers present in the workplace, they must keep track of all illnesses and injuries that occur at work, and they must also conduct periodic inspections to ensure workplace safety. In these inspections, they examine and test structures, machines, and materials to guarantee proper operation and not place employees in dangerous situations.

Employers must provide information and keep employees informed of safety protections and safety obligations.

The Occupational Safety and Health Administration was created within the U.S. Department of Labor to help enforce OSHA. Officers of the agency enter and inspect factories, plants, or other worksites, and they can also issue citations to companies that are not in compliance with safety requirements. Employers that do not follow the guidelines of OSHA may receive civil penalties in the form of fines.

OSHA provides a number of safety and health standards that companies must follow. Some of the standards apply only to a few employers, such as construction companies, but a number of standards apply to most employers. These standards cover such topics as emergency plans, hazardous chemicals, workspace layout, and medical treatment and first aid availability.

Emergency action plan standard

The OSHA requirement that organizations develop a plan for dealing with emergencies such as fires or natural disasters.

Emergency Plans

Plans for dealing with fires and other emergencies are the main subject of the **emergency action plan standard**. Not all companies are required to have formal emergency plans, but many organizations find them helpful for planning ways to prepare for potential disasters. The plan should provide details about reporting fires and other emergencies and should also describe evacuation procedures and escape routes, establishing a process to account for all employees after evacuation. If employees have responsibilities to rescue others or provide medical attention, the plan should make these duties clear. In addition, the plan should guide the actions of employees who might need to remain and operate or shut down critical equipment before they evacuate.

Hazard communication standard

The OSHA requirement that organizations identify and label chemicals that might harm workers.

Hazardous Chemicals

Exposure to certain chemicals can create both long-term and short-term problems. Which chemicals are harmful? What should employees do if they accidentally spill a harmful chemical? These concerns are the focus of the **hazard communication standard**, which is aimed at ensuring that employers and employees know about hazardous chemicals in the workplace. Under this standard, organizations must identify any chemicals to which workers might be exposed on the job. All chemical containers must be clearly labeled. Organizations must also provide information about protective measures that reduce the chance of harm from the chemicals. Each workplace must have a written plan that includes a list of the chemicals present at the site, the names of people who are responsible for overseeing the chemicals, and information about where employees can learn more about the chemicals. This information is usually contained in a **material safety data sheet (MSDS)**, a paper that specifically describes the nature of the chemical and how to prevent injury. An example of an MSDS is shown in Figure 3.5.

Material safety data sheet (MSDS)

An OSHA-required document that describes the nature of a hazardous chemical and methods of preventing and treating injuries related to the chemical.

Workspace Layout

The **walking/working surfaces standard** emphasizes the need to keep the workplace clean and orderly in order to prevent slips and falls that may result in injury. Organizations are required to keep floors clean and dry and to keep aisles sufficiently wide and clear of obstructions. The standard also provides guidelines for the proper use of ladders and scaffolding and requires covers and guards for potentially dangerous structures, such as pits, tanks, and ditches.

Walking/working surfaces standard

The OSHA requirement that an organization maintain a clean and orderly work environment.

AMMONIA (ANHYDROUS)

ICSC: 0414



					
<p>NH₃ Molecular mass: 17.03 (cylinder)</p>					
<p>ICSC # 0414 CAS # 7664-41-7 RTECS # B00875000 UN # 1005 EC # 007-001-00-5 March 27, 1998 Peer reviewed</p>					
TYPES OF HAZARD/ EXPOSURE		ACUTE HAZARDS/ SYMPTOMS		PREVENTION	
FIRE		Flammable.		NO open flames, NO sparks, and NO smoking.	
EXPLOSION		Gas/air mixtures are explosive.		Closed system, ventilation, explosion-proof electrical equipment and lighting.	
EXPOSURE				AVOID ALL CONTACT!	
*INHALATION		Burning sensation. Cough. Laboured breathing. Shortness of breath. Sore throat. Symptoms may be delayed (see Notes).		Ventilation, local exhaust, or breathing protection.	
*SKIN		Redness. Skin burns. Pain. Blisters. ON CONTACT WITH LIQUID: FROSTBITE.		Cold-insulating gloves. Protective clothing.	
*EYES		Redness. Pain. Severe deep burns.		Face shield or eye protection in combination with breathing protection.	
*INGESTION					
FIRST AID/ FIRE FIGHTING					
				In case of fire in the surroundings: use appropriate extinguishing media.	
				In case of fire: keep cylinder cool by spraying with water.	
				Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.	
				ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.	
				First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.	
SPILLAGE DISPOSAL		STORAGE		PACKAGING & LABELLING	
Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid. Remove gas with fine water spray. Personal protection: gas-tight chemical protection suit including self-contained breathing apparatus.		Fireproof. Separated from oxidants acids, halogens. Cool. Keep in a well-ventilated room.		T symbol N symbol R: 10-23-34-50 S: 1/2-9-16-26-36/37/39-45-61 UN Hazard Class: 2.3 UN Subsidiary Risks: 8	
SEE IMPORTANT INFORMATION ON BACK					
<p>ICSC: 0414 Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>					

Figure 3.5 Sample Material Safety Data Sheet. Source: International Occupational Safety and Health Information Centre (CIS), www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/a_index.htm. [Copyright © International Labour Organization 2007]

Medical and First Aid

Even when an employer takes precautionary steps, some accidents are likely to occur. The **medical and first aid standard** requires employers to make medical personnel and first aid supplies available to workers to treat injuries. Employees must also have access to medical personnel and treatment facilities so that they can receive treatment for more serious injuries. This requirement is particularly important for employees who are required to handle dangerous chemicals or to work in potentially dangerous environments.

Medical and first aid standard

The OSHA requirement that an organization make medical and first aid resources available to workers who may become injured.

WORKERS' COMPENSATION

Each state has laws and programs governing workers' compensation. Although some differences exist between states, all these programs have a common purpose, and most are quite similar. **Workers' compensation** provides protection for

Workers' compensation

State programs that provide workers and families with compensation for work-related accidents and injuries.