

# HazCom: What You Need to Know

<b>Introduction</b>	
Pg 1	<p>Welcome to HazCom: What You Need to Know.</p> <p>To learn how to navigate this course, select the Next button</p>
Pg 2	<p>A standard design frames every page of the course. You will always find the Table of Contents in the drop-down menus along the top of the screen. Run your mouse over the list of lessons at the top of the screen and you will see these drop-down menus. Your first time through the course, you can look at the contents in these drop-down menus, but you will not be able to skip ahead. After you go through the course once, you can use the Table of Contents to skip around and review for the exam.</p> <p>Your progress through the course is tracked. If you must leave at any time, don't worry. You will be taken back to the same screen when you return.</p>
Pg 3	<p>Audio On/Off allows you to disable audio for the course.</p> <p>If you are taking the course in an area where you cannot hear the audio, you can download a printable audio transcript by selecting Transcript at the bottom of the page.</p>
Pg 4	<p>The Resources link appears when additional learning tools like printable documents or web links are provided.</p> <p>Select Resources now to visit J. J. Keller's website. The site will open in a new browser window and will not interfere with your movement through this course.</p> <p>Simply close the new browser window to return to the course.</p>

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Pg 5	<p>If you had trouble opening the J. J. Keller link on the previous page, you may have a pop-up blocker. This course will not work correctly unless all browser-based and third-party pop-up blockers are disabled.</p> <p>Select the Resources button to download a PDF document with instructions to disable a pop-up blocker. The document also contains instructions to help you adjust your screen text size.</p>
Pg 6	<p>Parts of this course feature video. The video player controls are detailed in the image to the right.</p> <p>You can move to any part of the video by selecting and dragging the progress indicator forward or backward along the progress bar.</p> <p>Use rewind to go back to the beginning of the video.</p> <p>Now that you know how to use the video player, select Next to get started with the course!</p>
Pg 7	<p>The Course Highlights document provides an overview of the interactive activities in this course.</p> <p>Download the Course Highlights by selecting the Resources button on this page.</p>
Pg 8	<p>When you select Next, you will begin the pretest for this course. Your score will be reported to you, but will not be recorded. There are five questions in this pretest.</p>

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Pg 10	<p>By completing this course, you will learn the following:</p> <ul style="list-style-type: none"><li>• The purpose and importance of the HazCom Standard and how this standard helps keep employees safe from the dangers of hazardous chemicals</li><li>• Why the Globally Harmonized System of Classification and Labeling Chemicals (GHS) was adopted into the HazCom Standard and how this affects employers and employees</li><li>• The use of the chemical inventory</li><li>• The purpose of safety data sheets</li><li>• The GHS specified, 16 section format required to be used for all safety data sheets, and the information contained in each section</li><li>• The purpose of chemical container labels and the six required elements</li><li>• The information and training requirements of the HazCom Standard</li><li>• The purpose of the written HazCom program and how to access it</li></ul>
Pg 11	<p>Chances are you come into contact with many different chemicals every day. And with every chemical there are risks. When you're working daily with hazardous chemicals, those risks escalate considerably. The potential for injuries—whether to you, the people around you or the environment—can be especially significant.</p> <p>And that potential gets even greater if you don't know and understand the basic nature of those chemicals and how to work safely with them.</p>

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Pg 12	<p>Select Play now to watch a video introduction to HazCom in the workplace.</p> <p>[Video VO]</p> <p>It's believed that one out of every four employees in the United States comes into contact with hazardous chemicals on the job. Each year, hundreds of new chemicals are produced and almost 1.6 million tons of chemicals are transported via our streets, highways and railways.</p> <p>The HazCom Standard establishes uniform requirements to make sure that hazard information is communicated to affected employers and exposed employees. OSHA believes that when employees understand the hazards of the chemicals they work with, they will more likely take the steps necessary to protect themselves and their coworkers from those hazards.</p>
Pg 13	<p>To help prevent accidents and injuries, the Occupational Safety and Health Administration, or OSHA, developed the Hazard Communication Standard. Commonly referred to as HazCom, or the "Right to Know" law, this regulation gives you the right to know which chemicals are being used in your workplace, and the possible dangers you are being exposed to.</p>
Pg 14	<p>You also have the right to know how to protect yourself when using hazardous chemicals. As part of the Hazard Communication Standard, your employer is required to provide you with the knowledge and training necessary for you to do your job safely.</p>
Pg 16	<p>In 2012, OSHA aligned its Hazard Communication Standard with the United Nation's Globally Harmonized System for Classification and Labeling Chemicals.</p>

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Pg 17	<p>While OSHA maintained the framework of its traditional HazCom Standard, it adopted the GHS hazard definitions, and safety data sheet and labeling formats. GHS mandates a standard format for information on every hazardous chemical, and it's a worldwide standard for the countries that choose to use it.</p> <p>Prior to GHS there was an inconsistency of information that often brought about confusion and uncertainty for employers and employees. Sometimes even the very definition of what constituted a hazardous chemical was inconsistent, resulting in even greater confusion.</p>
Pg 19	<p>The HazCom Standard mandates that your employer complies with five regulatory requirements:</p> <ol style="list-style-type: none"><li>1. Create an inventory of all hazardous chemicals at the workplace.</li><li>2. Ensure each chemical has a GHS-style safety data sheet, or SDS, that is easily accessible to all employees who work with that chemical.</li><li>3. Ensure each chemical container is properly labeled with a GHS-style approved label or an OSHA-compliant workplace label.</li><li>4. Create and implement an employee HazCom training program.</li><li>5. Develop a written program that describes how the HazCom program has been implemented.</li></ol>

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Pg 20	<p>Select Play now to watch a video depicting chemical transportation.</p> <p>[Video VO]</p> <p>Hazard Communication begins at the chemical manufacturing plant. The chemical manufacturer or importer classifies each chemical based on its hazards. From this information the chemical's GHS-style safety data sheet and label are created. These safety data sheets and labels must be passed along to each company and person who handles that chemical, from supplier to transporter to the final end-user, helping to create the master list for your employer's chemical inventory.</p>
<b>Chemical Inventory</b>	
Pg 2	<p>So, what makes a chemical hazardous?</p> <p>A hazardous chemical is any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified (HNOC).</p>
Pg 3	<p>"Physical hazards" are those chemicals that can cause a fire, explosion, or some other violent reaction when they come in contact with air, water or other chemicals.</p>

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Pg 4	<p>Chemicals that threaten people’s health are called “health hazards.” By entering the body in one of three ways—inhalation, skin contact or ingestion—these chemicals can cause both short-term, or acute, health problems; and long-term, or chronic, health problems.</p> <p>OSHA considers any chemical to be a health hazard if it is:</p> <ul style="list-style-type: none"><li>• Toxic,</li><li>• Corrosive to the skin or eyes,</li><li>• A respiratory sensitizer,</li><li>• A cause of cancer, birth defects, or reproductive issues,</li><li>• Harmful to specific organs in the body,</li><li>• Harmful or deadly when inhaled.</li></ul>
Pg 6	<p>At your workplace, creating a chemical inventory is the first step to ensuring a safe work environment. When a chemical arrives at your workplace, the hazard information is passed along with it so it can be added to your company’s chemical inventory, creating a list of vital information.</p>
Pg 7	<p>OSHA requires that each company keep a complete and up-to-date inventory of all of its hazardous chemicals. This list not only identifies all of the hazardous chemicals on site, it is used to make sure each chemical is accounted for, is properly labeled and has an up-to-date SDS. This includes chemicals used off-site as well.</p>
<b>Safety Data Sheets</b>	

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Pg 2	<p>Safety data sheets are one of the most important tools to help ensure your safety. And one of the biggest advantages to having a standardized format is you will know exactly where to look when you need to find information quickly.</p> <p>The SDS explains everything you need to know to work safely with a specific chemical, from what it looks and smells like, to its potential hazards, to what to do in the event of an accident.</p>
Pg 3	<p>To be compliant with GHS, all safety data sheets must have the GHS-specified, 16 section format and include certain types of information in each section. This standard format better ensures that all employers and employees understand the chemical, its hazards and the precautions users must take to remain safe.</p> <p>Your understanding of the information provided on a safety data sheet can mean the difference between being safe and being seriously—or even fatally—injured.</p>
Pg 4	<p>Select Play now to watch a video depicting employees handling chemicals without consulting the Safety Data Sheets.</p> <p>[Video VO]</p> <p>Sometimes the safe and unsafe methods for handling a hazardous chemical are clear. In other instances, proper safety measures are less obvious. In all instances, employees should get in the habit of consulting Safety Data Sheets prior to handling potentially hazardous chemicals to ensure their own safety and the safety of their co-workers.</p>
Pg 6	<p>Let's take a look at a GHS-style safety data sheet and the information it contains for a hypothetical chemical we'll call Solvent X, a chemical mixture used to flush equipment.</p>



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Pg 7	<p>Section 1 provides the product and company identification.</p> <ul style="list-style-type: none"><li>• It includes the official name of the chemical, as well as other names it goes by.</li><li>• This section may also contain recommended uses of the chemical and restrictions on its use, the supplier's details, including name, address and phone number, and an emergency phone number.</li></ul>
Pg 8	<p>Section 2 identifies the hazards posed by the chemical, along with the information that's required to be on the chemical's label including the pictograms, signal word, hazard statements and precautionary statements.</p>
Pg 9	<p>Section 3 details the composition of the chemical. It lists the ingredients that have been used to create the chemical, and which of those are known to be hazardous.</p>
Pg 10	<p>Section 4 describes the treatment methods you should use to help yourself or someone else who has been exposed to the chemical.</p>
Pg 11	<p>Section 5 describes the combustibility of the chemical, any possible secondary results if there is a fire, and how to put out a fire if this chemical is involved.</p>
Pg 12	<p>Section 6 describes any special clean-up procedures in the event of a spill.</p>
Pg 13	<p>Section 7 outlines the safe ways to work with and store the chemical.</p>
Pg 14	<p>Section 8 shows the minimum amount of time a person could be exposed to the chemical before being potentially affected, and how to protect yourself through proper clothing and handling techniques.</p>
Pg 15	<p>Section 9 describes the chemical's characteristics, such as its normal appearance, odor, solubility, melting and freezing points, flash point, evaporation rate, flammability, vapor pressure and density.</p>

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Pg 16	Section 10 describes how stable the chemical is as well as the conditions that create instability.
Pg 17	Section 11 identifies the degree to which the chemical is poisonous as well as other potential health hazards.  This section lists both acute and chronic health conditions that can result from over-exposure to the chemical.
Pg 18	Section 12 describes how the chemical interacts with the environment including how long it will last, how it spreads and any other pertinent information.
Pg 19	Section 13 explains how the chemical should be discarded.
Pg 20	Section 14 includes instructions on the safe and unsafe ways of moving the chemical.
Pg 21	Section 15 describes the safety, health and environmental laws specific to the chemical.
Pg 22	Finally, section sixteen includes any additional details that are important to disclose regarding the chemical as well as the date the SDS was prepared.
Pg 25	While this is a lot of information, it's all clearly identified on the safety data sheet for one simple reason: to keep you, your coworkers and the environment safe.  By utilizing this standardized form for all hazardous chemicals—whether you work with that chemical every day, or you just happen to be in the area when disaster strikes—you will be able to determine what to do quickly and effectively because you will know exactly what to look for and where to look for it on the SDS.

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Pg 26	<p>When there's an emergency, the last thing you want to do is spend time frantically searching through a safety data sheet to find the information you need. You must also know where to find SDSs in your workplace.</p> <p>OSHA does not dictate a specific place for companies to keep their safety data sheets; but it does say they must be in a location that's easily accessible by all employees. In some companies, SDSs are stored on a computer. In other companies, hard copies of SDSs are kept on-site in 3-ring binders.</p> <p>If you have trouble locating or understanding the SDS for a chemical, talk to your supervisor right away. And don't use the chemical until you have the information you need.</p>
Pg 27	<p>Select Play now to watch a video depicting potential problems with an SDS.</p> <p>[Video VO]</p> <p>It's not enough to simply have an SDS on hand for every product in your chemical inventory. In order to be effective, an SDS must be kept up-to-date and be easily accessible to employees. Be sure you know where to find your company's SDSs so that you can react properly to any potentially hazardous situation.</p>
Pg 28	<p>Safety data sheets truly are a wealth of information. It's vitally important that you know where to find them for every chemical you work with and take the time to read and understand each one thoroughly. If a chemical emergency occurs, that should not be the first time you're reading the SDS!</p>
<b>Labeling</b>	

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Pg 2	<p>The safety data sheet is not your only source for information on the hazardous chemicals you work with. Each hazardous chemical container must also be labeled—with both the chemical name and other vital, quick-reference information.</p>
Pg 3	<p>The HazCom Standard requires that there be six label elements:</p> <ul style="list-style-type: none"><li>• Product identifier, or ingredient disclosure</li><li>• Signal word</li><li>• Hazard statement</li><li>• Pictograms</li><li>• Precautionary statement</li><li>• Supplier identification</li></ul> <p>Let's take a closer look at these elements.</p>
Pg 4	<p>The "product identifier or ingredient disclosure" describes just that—the name of the chemical or a brand name, or the hazardous ingredients the chemical contains, or both.</p>
Pg 5	<p>The "signal word," if required, discloses the relative level of hazard severity. "Danger" is used for more severe hazards and "Warning" is used for less severe hazards.</p>
Pg 6	<p>The "Hazard Statement" describes the type, nature and degree of the hazards associated with the chemical.</p>
Pg 7	<p>The "pictogram" is always a black symbol shown on a white background and surrounded by a red, diamond-shaped border. These images are used to depict all the physical, health or environmental hazards caused by a particular chemical. All of the hazards that apply to that specific chemical are shown.</p> <p>Select Resources now for a downloadable document depicting each of the nine pictograms.</p>

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Pg 8	The "Precautionary Statement" describes actions that should be taken to prevent or minimize the negative effects that could result from exposure to the chemical, or from its improper storage or handling.
Pg 9	Finally, the "Supplier Identification" includes the name and contact information of the supplier, manufacturer or importer of the product.
Pg 11	<p>Occasionally, chemicals will need to be relabeled. Your employer may choose to relabel the chemicals in your workplace with a GHS-style label or an OSHA-compliant in-house labeling system, in order to make sure all the chemicals in your company's inventory are labeled consistently and in a way that you and your coworkers can easily understand.</p> <p>Relabeling might also happen when a large quantity of a chemical is broken down into smaller ones and then distributed to different work areas within your company.</p>
Pg 12	<p>Because labels are so important, if you ever find a container without a label, or one where the label is unreadable, you need to notify your supervisor immediately so a new label can be applied. Do not use chemicals from an unlabeled container</p> <p>The one exception to this is if you transfer a chemical from a larger, labeled container to a smaller, more portable one—and use the chemical in that smaller container during your immediate work shift. But the only person who is allowed to use the smaller container is you, the person who did the transfer.</p>

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Pg 13	<p>But what about chemicals that don't come neatly bundled in bags, bottles or drums? How are you warned of the potential risks of a chemical that was created in the process of working, such as a fumes caused by welding?</p> <p>In these instances, your employer is required to put up signs or posters warning of the potential danger. This is necessary so you and others can protect yourself from harm before you enter the area, like putting on the appropriate personal protective equipment or breathing apparatus.</p>
Pg 14	<p>So while SDSs are a complete resource for the chemicals you work with, labels are a quick and immediate reference.</p> <p>You should always review a container's label before using the chemical to ensure that it is in fact the chemical you believe it to be. You never know when a container that you think you are familiar with gets changed.</p>
<b>Information and Training</b>	
Pg 2	<p>While it's essential to have the safety data sheets and labels at your disposal when working with hazardous chemicals, what brings it all together is the training you receive from your employer.</p>
Pg 3	<p>Select Play now to watch a video of employees in a HazCom training session.</p> <p>[Video VO]</p> <p>OSHA requires that each person who works with hazardous chemicals be trained on the Hazard Communication Standard.</p> <p>This includes being trained on hazardous chemical container labeling, safety data sheets and the chemical inventory.</p>

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Pg 4	Additionally, your employer must provide you with specialized training for the specific chemicals you use in your job. Knowledge is the best defense against the hazards you face in your job. By actively participating in these opportunities, you will be ready for almost any threat that comes your way.
<b>Written Program</b>	
Pg 2	<p>The fifth requirement of the HazCom Standard, which is the written program, pertains more to your employer than to you directly. However, you still have rights related to it.</p> <p>The purpose of the written program is to document—in detail—your employer’s plans for communicating the hazards and risks involved with using the chemicals in your workplace.</p> <p>Reviewing the Written Program</p>
Pg 3	You do have the right to review this written program whenever you want, so you can see what your employer is doing to keep you and your coworkers knowledgeable and safe regarding the chemicals in your workplace.

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Pg 4	<p>It may be your employer's responsibility to document the written program, but the ultimate responsibility for your safety is not in the hands of your employer. You must take ownership of your safety.</p> <p>Select Play now to watch a video depicting a few of the actions you can take to ensure that you are practicing good chemical safety.</p> <p>[Video VO]</p> <p>Remove all jewelry to avoid skin reactions.</p> <p>Use face and eye protection if the chemical could be splashed into your face. Be especially careful if you wear contacts, because chemical splashes or vapors can easily become trapped under your lenses.</p> <p>When you finish handling a chemical, wash your hands thoroughly...and make sure safety gear is clean and properly stored.</p> <p>Don't eat, drink or smoke near any hazardous chemicals.</p> <p>Make sure you know where the nearest eyewash station or emergency shower is located.</p> <p>Dispose of hazardous chemicals as directed by your employer. Never mix chemical wastes unless you know that it's safe to do so. And, know your company's policy for dealing with spills or leaks.</p> <p>Finally, know how your employer wants you to respond if an incident involving a hazardous chemical happens near you or a coworker.</p>
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Pg 6	<p>Ultimately, in an emergency, it is up to you. You need to know what will make the situation worse...and what will make the situation better.</p> <p>This means reading, understanding and following the guidelines of the chemical SDSs and labels you work with, so you know how to handle any situation that comes along. Knowledge is essential when working with hazardous chemicals; it's your safety that's at stake.</p> <p>By learning as much as you can about Hazard Communication, the Globally Harmonized System, and the chemicals you work with, you can be better assured that every day will be a safe one for you and the people you work with.</p>
<b>Conclusion</b>	
Pg 2	<p>By now, you should have knowledge of the following:</p> <ul style="list-style-type: none"><li>• The purpose and importance of the HazCom Standard and how this standard helps keep employees safe from the dangers of hazardous chemicals</li><li>• Why the Globally Harmonized System of Classification and Labeling Chemicals (GHS) was adopted into the HazCom Standard and how this affects employers and employees</li><li>• The use of the chemical inventory</li><li>• The purpose of safety data sheets</li><li>• The GHS specified, 16 section format required to be used for all safety data sheets, and the information contained in each section</li><li>• The purpose of chemical container labels and the six required elements</li><li>• The information and training requirements of the HazCom Standard</li><li>• The purpose of the written HazCom program and how to access it</li></ul>

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Pg 3	<p>Now that you've covered everything in the course, it's time to review for the exam. To help you prepare for the exam, you can now move back and forth within the course. Use the drop-down menus at the top of the screen, or the Back and Next buttons at the bottom.</p> <p>The Review Questions will also help you review main concepts covered on the exam. Select Next to download the review questions.</p>
Pg 4	<p>The Review Questions will open in a separate window. Keep this original window open. That way if you don't know an answer, you can go back into the course and find it. Once you've finished the Review Questions and have finished studying, continue on to take the exam.</p> <p>To begin the Review Questions, select Resources.</p>
Pg 5	<p>Now it's time to take the Final Exam. This exam includes fifteen questions. If you close the exam before finishing, your answers will not be saved for later.</p> <p>You will have three chances to take the final exam. Your highest score will be recorded.</p> <p>To begin the exam, select Next.</p>
Pg 7	<p>Congratulations! You have completed this course.</p>