MSHA Part 46 New Miner Online Training

Module 6

Hazardous Chemicals and HazCom Programs

MSHA Training Requirement:

An introduction to the rules and procedures for reporting hazards. [Section 46.5(b)(4)], Section 46.5 (b)(7)]

Learning Objectives:

1. Understand the potential dangers and health problems associated with hazardous chemicals designated for mining work.
2. Review the standards for Hazard Communication (HazCom) programs and understand how HazCom ensures you are informed about chemical hazards and safety procedures.
3. Follow procedures to identify all chemicals present in a work area, determine which chemicals are hazardous, and how to take protective measures against identified hazards.
4. Properly locate and complete Material Safety Data Sheets (MSDS) for pertinent chemicals at a mine worksite.
5. Efficiently report hazards and unsafe working conditions to the proper authorities.

Module Sections

- 6.1 Introduction to Hazardous Chemicals
- 6.2 Identifying Hazardous Chemicals
- 6.3 HazCom Programs and Training
- 6.4 Chemical Determination and Documentation
- 6.5 Labels and Other Forms of Warning

Code of Federal Regulations Reference Material

CFR Subtopic Regulations: 30 CFR 47 Subparts A-J (Hazard Communication)

- 47.1 Purpose of a HazCom standard; applicability.
- 47.2 Operators and chemicals covered; initial miner training.
- 47.11 Definitions of terms used in this part.
- 47.21 Identifying hazardous chemicals.
- 47.31 Requirement for a HazCom program.
- 47.32 HazCom program contents.
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6.1 INTRODUCTION TO HAZARDOUS CHEMICALS

This module will help you conduct work safely as you encounter hazardous chemicals at mine worksites.

You will learn how to:

1. Understand the potential dangers and health problems associated with hazardous chemicals designated for mining work.
2. Review the standards for Hazard Communication (HazCom) programs and understand how HazCom ensures you are informed about chemical hazards and safety procedures.
3. Follow procedures to identify all chemicals present in a work area, determine which chemicals are hazardous, and how to take protective measures against identified hazards.
4. Properly locate and complete Material Safety Data Sheets (MSDS) for pertinent chemicals at a mine worksite.
5. Efficiently report hazards and unsafe working conditions to the proper authorities.

Hazardous Chemicals and Materials

You will likely encounter a range of hazardous chemicals and materials in the mining process. **Hazardous chemicals** and **hazardous materials** are terms often used interchangeably, but they have distinct meanings.

Hazardous chemicals refer specifically to substances that can pose risks to health or the environment due to their *physical* or *chemical* properties. Examples include toxic solvents, corrosive acids, or flammable liquids.

On the other hand, hazardous materials encompass a broader category that may include hazardous chemicals but also refers to *any* materials that can cause harm to people or the environment. This can include contaminated soil, asbestos in buildings, or waste materials from worksites.

- **Hazardous Chemical**: **Acetone** – A flammable solvent used for cleaning and thinning paint.
- **Hazardous Material**: **Asbestos** – A material found in older buildings that can cause serious health issues when disturbed.

Hazardous Chemicals in Mining

Lubricants, solvents, epoxies, diesel fuel, gasoline, cyanide, mercury, silica, and many other chemicals are either brought to mining operations or produced from the mining process itself.

While these chemicals are fundamental to the mining process, they can also cause serious health problems such as:

- Sterility
- Cancer
- Burns
- Heart, kidney or lung disease

among other health problems. Additionally, these chemicals can cause fires and explosions, but are also useful to *help* fight fires and control explosions.

Are hazardous chemicals 'good' or 'bad'?
Hazardous chemicals, when used properly and safely, are a necessary and valuable resource in the mining process. Depending on how you handle, store, and use them, they can have 'good' (positive), or 'bad' (negative) outcomes. So, this module will help you understand the risks involved in using hazardous chemicals at a mine worksite.

Importantly, it will also help inform you about what mine operators are required to do to protect your well-being and safety while working with these materials.

Module Warmup

Why Safely Using Hazardous Chemicals Matter?

Understanding how to properly identify, use, and store hazardous chemicals at a mine worksite will help you avoid short-term and long-term health consequences. Consider the following incidents reported by MSHA regarding chemical hazards at mines:

- A miner was exposed to **chemical vapors** following a **hazardous waste spill** from a tanker trailer. The waste spilled from the top of the tanker around a damaged agitator seal. The miner stopped the spill at the tanker bay control station and attempted to clean up the spill by washing it into a sump. He noticed a **very strong chemical odor** and **his vision became blurry**. The miner attempted to leave the area and ran a short distance before **losing consciousness.**
- A miner was welding near a pit **containing flammable vapors**. The vapors were emitted from **hazardous waste** that was being mixed during a trial run to test its suitability as an alternative fuel. The waste contained benzene **(a carcinogen)** and other hazardous chemicals, but they could not be immediately safely processed. A welder began work before checking the atmosphere in all pits for **explosibility** using a portable gas detector. Welding sparks fell into the pit and **ignited flammable vapors** that had accumulated at the bottom from the hazardous waste. The welder suffered **second degree burns on his hands, face, and back**.

Unfortunately, you can develop both short-term and long-term health problems from chemical exposure. Long-term illnesses, for example, may occur years after an exposure when the immediate relationship of illness to chemicals can be difficult to see. Understanding the standards around HazCom (which we will cover in this module), and your right to be informed about hazardous materials at your worksite, can help reduce chemical injuries and illnesses.

Key Terms: Common Hazardous Chemical Concepts and Definitions

Let's review some common concepts and definitions.

- **Chemical:** Any element, chemical compound, or mixture of these.
- **Exposed:** When someone is at risk of being harmed by a chemical at work.
- **Hazard warning:** Information on labels about a chemical's dangers.
- **Identity:** A chemical's common or chemical name.
- **Label:** Information on containers about what chemical or mixture is inside.
- **Material safety data sheet (MSDS):** Information about hazardous chemicals.
- **Physical hazard:** A chemical that is a combustible liquid, compressed gas, or explosive.

Preparing for Hazardous Chemicals and HazCom

Many of the federal regulations concerning hazardous chemicals may seem very technical in nature, especially if you are new to mining. While you may encounter chemicals or other material agents or at your worksite that may be unfamiliar to you, there are simple precautions you can take to better identify and handle these hazards.

When you visit a mine worksite for the first time, or begin your work for the day, it is smart to:

- Verify that your PPE is in good working condition.
- Confirm which, if any, hazardous chemicals might be part of your work tasks or might be present in your immediate and surrounding work area.
- Ask about the HazCom program and when it has been updated by your mine operator.
- Gather the basic information to report a hazard, if needed.

The rest of this module will prepare you to effectively identify, understand, and mitigate the risks associated with hazardous chemicals at your worksite. Additionally, you will learn about the required HazCom program that must inform every miner about chemical hazards, appropriate protective measures, and how to report hazardous conditions.

6.2 IDENTIFYING HAZARDOUS CHEMICALS

Identifying hazardous chemicals at mine worksites may or may not be part of your typical job responsibilities and tasks. Yet, if your mine worksite is like most mining operations, compliance to identify and properly document hazardous material is part of your responsibility.

The good news is that while chemical names, properties and uses may seem complicated, compliance to identify and report potential problems with these chemicals is not. There are some basic steps to help you properly, and safely, identify and report hazardous chemicals at a mine worksite.

Assessing and Documenting Chemicals: Hazard Determination

What is hazard determination?

Hazard determination is a process of assessing and documenting the chemical inventory of the chemicals present at your mine worksite. Your mine operator must identify all chemicals at your mine and determine if they can be a physical or health hazard.

Some chemicals present at your mine worksite may be:

- Physical hazards
- Health hazards
- Physical and health hazards
- Some are neither

As you can see, there are differences between physical hazards and health hazards from the exposure to and use of chemicals.

Physical Hazards: Physical hazards can cause bodily injuries. The chemical may be a combustible liquid, a compressed gas, an organic peroxide, or an oxidizer. It may be flammable, explosive, unstable (reactive) or water-reactive. A physical hazard might include any exposure to excessive noise, elevated heat, or sources of radiation, such as X-rays, or radioactive materials.

Health Hazards: While physical hazards cause bodily damage, health hazards can cause illnesses. The effects of health hazards may be of acute, or short duration, where symptoms often appear immediately. Or, they can be chronic, of persistent duration, where symptoms usually appear after some time. Imagine you have accidentally ingested gasoline; the full effects of that on your system may not be present for days or weeks and can lead to long-term illness. This is a health hazard.

A **physical hazard** can be represented by a chemical that meets the following criteria:

- **Combustible liquid**: A liquid with a flash point between 100 °F (37.8 °C) and 200 °F (93.3 °C), or a liquid mixture where components with flashpoints of 200 °F (93.3 °C) or higher make up 99% or more of the mixture.
- **Compressed gas**: A gas or gas mixture contained under pressure exceeding 40 psi (276 kPa) at 70 °F (21.1 °C), or 104 psi (717 kPa) at 130 °F (54.4 °C), regardless of pressure at 70 °F (21.1 °C). Or, a liquid with vapor pressure exceeding 40 psi (276 kPa) at 100 °F (37.8 °C), determined by ASTM D-323-82.
- **Explosive**: A chemical that undergoes rapid chemical change, releasing pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.
- **Flammable**: A chemical that readily ignites and burns persistently under normal atmospheric conditions with the typical concentration of oxygen in the air.
- **Organic peroxide**: An explosive or shock-sensitive organic compound or oxide containing a high proportion of oxygen.
- **Oxidizer**: A chemical, excluding explosives, that promotes combustion by releasing oxygen or other gases, thereby initiating or supporting fire.
- **Pyrophoric**: Capable of igniting spontaneously in air at or below 130 °F (54.4 °C).
- **Unstable (reactive)**: A chemical that vigorously polymerizes, decomposes, condenses, or becomes self-reactive under conditions of shock, pressure, or temperature.
- **Water-reactive**: A chemical that reacts with water to release a gas that is flammable or poses a health hazard.

Hazardous chemicals at a mine worksite can cause significant health problems, *regardless* of whether they represent physical or health hazards.

Absorption of Hazardous Chemicals

As cautious as you may be, there are a variety of ways hazardous materials can be absorbed into your body. The best way to protect yourself from hazardous chemicals is to always wear your PPE and use your hazard determination process to classify the chemicals you encounter.

Consider how you might protect yourself from these ways hazardous chemicals can be absorbed into your body:

Absorption Method	Process & Risks
Inhalation	Inhalation is the main route of exposure for some chemicals. For example, silica is a common component in many mine commodities, and it is known to be dangerous. If you breathe enough respirable crystalline silica dust over a period of time, you will eventually get silicosis, a disabling—and even fatal—illness.
Dermal absorption	Dermal absorption, or absorption through your skin, can happen when chemicals are handled inappropriately, such as not wearing gloves or other PPE. Additionally, absorption can occur when chemicals are spilled and not cleaned properly.

Ingestion	Accidental ingestion of chemicals can occur when hygiene practices are limited or not followed, such as not having access to handwashing stations, or forgetting to wash hands before eating or drinking. Chemical contaminated food sources can also be a direct cause of chemical ingestion. Imagine you live near a mine, and chemicals find their way into your drinking water. This would be accidental ingestion.
Combustion or Explosion	Combustible or explosive chemicals can build up in unventilated areas. This can lead to the release of chemical byproducts in the air. Similarly, Explosive gasses, such as methane, carbon monoxide, and hydrogen sulfide, can be released during mining operations such as drilling and blasting.

What happens if these toxic chemicals get into my body?

OSHA classifies chemical absorptions with the following definitions:

- **Acute Toxicity:** Acute toxicity means harmful effects happening after a single dose of a substance, within 24 hours, either by swallowing, skin contact, or breathing it in for 4 hours.
- **Aspiration Toxicity:** Aspiration toxicity means severe effects like pneumonia or lung injury after inhaling a liquid or solid substance. Aspiration happens when a substance gets into the respiratory system during breathing, often leading to immediate health problems.
- **Carcinogen:** Carcinogen means a substance that causes cancer or increases its chances. If a substance causes tumors in animals, it's likely to be a carcinogen unless proven otherwise.
- **Genotoxicity:** Genotoxicity means chemicals or processes that change DNA structure or information. Test results showing genotoxicity often indicate mutagenic effects.
- **Reproductive Toxicity:** Reproductive toxicity includes harmful effects on sexual function, fertility, and the development of offspring. Even if effects aren't clearly related to reproduction, chemicals causing them are classified as reproductive toxicants.
- **Respiratory Sensitizer:** Respiratory sensitizer means a chemical making the airways sensitive after breathing it in.
- **Skin Sensitizer:** Skin sensitizer means a chemical causing an allergic reaction when it touches the skin.

Additionally, here are other health problems you might experience from toxic chemicals. Some potential harms from absorbing these chemicals into your body are:

- **Eye Irritation:** Eye irritation is when a substance causes changes in the eye, but they heal fully within 21 days of contact.
- **Germ Cell Mutation:** Germ cell mutation means a permanent change in the genetic material of a cell. It can lead to hereditary changes or changes in the DNA itself, causing mutations.

- **Serious Eye Damage:** Serious eye damage is when a substance harms the eye or vision badly, and it does not fully heal within 21 days of contact.
- **Skin Corrosion:** Skin corrosion is when a substance causes permanent damage to the skin, like sores and bleeding, within 4 hours of contact. After 14 days, it might leave scars and discolored areas. Doctors might use histopathology to check any unclear damage.
- **Skin Irritation:** Skin irritation is when a substance causes temporary damage to the skin after 4 hours of contact.

Stay protected. The best way to protect yourself is to properly wear your PPE at all times and be aware of your surroundings!

Hazard Classification

The term 'hazard classification' is used to identify and classify chemicals that are hazardous on their own, meaning they do not need to be exposed to external forces to be hazardous.

Hazard classification incorporates three steps below, which we will cover in more detail later in this section:

- **Step 1:** Identification of relevant data regarding the hazards of a chemical.
- **Step 2:** Subsequent review of those data to ascertain the hazards associated with the chemical.
- **Step 3:** Determination of whether the chemical will be classified as hazardous and the degree of hazard by using established standards or a MSDS, which your mine operator must make available to you.

How do I know if a chemical is hazardous?
Every chemical brought to a mine worksite and each chemical produced on mine property must be evaluated to determine if it is hazardous. While a manufacturer may determine if a material is hazardous or not based on established standards, it is up to you and your mine operator to then follow any required Hazard Communication (HazCom) procedures and other required steps to classify the chemical. Simply put, a manufacturer classifying a chemical does not absolve you or your mine operator from any *additional* requirements to classify the chemical.

To determine if a chemical is hazardous, you can:

- Refer to the manufacturer label,
  AND
- Refer to your mine operator's HazCom procedures.

Great! You now have a general understanding of the main steps to identify hazardous chemicals at a mine worksite. We will review the HazCom program in more detail in the rest of this module.

6.3 HAZCOM PROGRAMS AND TRAINING

You might hear the words ‘hazard communication’ and ‘HazCom’ used interchangeably; they are different!

In relation to your work as a miner, ‘hazard communication’ may refer to any information about any type of hazard at your mine. For example, a co-worker may tell you to be careful around loose gravel near a loading area or your mine operator may tell you about a safety incident that happened at a nearby worksite. These instances all reflect and represent hazard communication in general. This is different from a HazCom program (often called HazCom for short).

What is a HazCom Program?

A HazCom Program, as determined by the Code of Federal Regulations, Title 30, involves particular processes and procedures about documenting and informing you about specific known chemical hazards at a mine worksite or in mining operations. HazCom processes, in general, are meant to help:

- Identify and document chemicals used at a mine worksite
- Test and maintain records of these chemicals
- Inform and train you and other parties about these chemical hazards

Who does a HazCom Program apply to?
Every mine operator must establish and follow a written HazCom program. This program needs to be maintained for as long as there are hazardous chemicals present at a mine worksite. Also, mine operators must share relevant HazCom information with other on-site operators whose workers could potentially be affected by these chemicals.

Do all operators follow a HazCom Program?
HazCom applies to any operator producing or using a hazardous chemical to which a miner can be exposed:

- Under normal conditions of use
- In a foreseeable emergency

A **foreseeable emergency** reflects any incident that could release chemicals into a mine. This might be due to a natural disaster, where an earthquake, flood, or landslide could damage containment systems or storage areas, leading to the release of hazardous chemicals. Or, this might be a malfunction or breakdown of equipment, such as pumps or tanks containing hazardous chemicals, which could result in leaks or spills of hazardous chemicals.

HazCom is based on two safety and health principles:

- **Principle 1:** Miners have a right to know about the chemicals to which they can be exposed.
- **Principle 2:** Mine operators must tell miners (and other workers) about the hazards associated with exposure, the methods they use to control exposure, and the safety measures to take if a miner is exposed.

HazCom, as an information and training standard, does not restrict chemical use, require controls, or set exposure limits, in and of itself. Rather it is meant to prepare miners and mine operators with the safeguards they need to understand the rules regarding communicating chemical hazards at a mine worksite.

Written Hazard Communication Program Standards

Creating a written hazard communication program is often one of the initial steps your mine operator must take to meet MSHA requirements. Each mine operator must develop and implement a written HazCom program that includes how the HazCom standards are put into practice and must include several required elements such as how they:

- Identify and handle hazards
- Determine which chemicals are hazardous
- Ensure that all chemical containers are properly labeled with clear warnings and information
- Maintain Material Safety Data Sheets (MSDSs) about each chemical
- Train miners to understand chemical hazard risks and how to protect themselves

Ask your mine operator about how they manage these risks *before* you begin work! Additionally, MSHA requires your mine operator to update their written HazCom programs accordingly. Your mine operator must also provide you with information on how to access their written HazCom program, required MSDSs, and other related HazCom documentation.

HazCom Training

Your mine operator must provide you with initial, subsequent, or ongoing HazCom training based on various requirements stated in CFR Part 46 and Part 48.

In general, this means that you should receive HazCom training if or when you:

- Are a *new miner*
- Are a *newly employed experienced miner*
- Start working at a *new mine worksite*

Additionally, your mine operator must provide you with HazCom training whenever:

- You start a new mining *job task*
- A *new hazardous chemical* is introduced where you work
- There is significant *new information* from the manufacturer about a chemical present at your worksite

HazCom Training Content

Your mine operator must provide you with a safety and health orientation that covers how their HazCom program is implemented at your particular mine worksite so you can:

- Detect, identify, and properly label chemicals used in workplace operations
- Locate the written HazCom program, required MSDSs, and how to access these and other related documentation
- Recognize health hazards posed chemicals at the mine worksite
- Minimize chemical exposure using control practices, safety procedures, and protective gear

Training Confirmation: After completing the training you will verify your attendance, receipt of any written HazCom materials, and that you understand the mine operator's HazCom policies. Your mine operator is required to keep your training records for two years.

Let's review! In summary, HazCom, as a chemical safety and information program ensures that your mine operator has a reliable and established way to identify chemicals at the mine, determine which chemicals are hazardous, and inform each miner who can be exposed and other operators whose miners can be exposed, about chemical hazards and appropriate protective measures.

The rest of this module will review the general required methods to identify, document, and communicate chemical hazards at your mine worksite.

6.4 CHEMICAL DETERMINATION AND DOCUMENTATION

'Chemicals' and HazCom

Remember that HazCom applies to any operator who manufactures, handles, or utilizes a hazardous chemical that miners could potentially be exposed to during regular operations or in a predictable emergency. **Chemical** refers to any element, chemical compound, or mixture of these.

HazCom, and its requirements to identify and document chemicals, then can cover:

- Liquids (such as diesel fuel)
- Solids (such as coal dust)
- Gases (such as NO2 from blasting)

There are some differences between a chemical name and a common name that will be helpful to understand when you need to identify or document a chemical.

Chemical name: The scientific designation of a chemical in accordance with the nomenclature system of either the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS), or, a name that will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Common name: Any designation or identification, such as a code name, code number, trade name, brand name, or generic name, used to identify a chemical other than by its chemical name.

Chemical Determination Guidelines

As you learned earlier, hazardous chemicals are part of several mining activities, or, they can be produced by mining activities. Therefore, you must understand how to determine whether a chemical is hazardous or not and follow established and required procedures to document the chemical.

How you determine whether a material is hazardous or not first depends on whether a chemical is brought to, produced at, or mixed at a mine worksite.

Chemicals Brought to the Mine: When chemicals are brought to the mine, the first step to assess their hazard potential is to review their Material Safety Data Sheet (MSDS) or container label. Both documents should confirm whether the chemical poses physical or health hazard.

Chemicals Produced at the Mine: When chemicals are produced at the mine, your mine operator must determine if they pose physical or health hazards by thoroughly researching and

reviewing all available evidence about the chemical. For example, your operator may need to consult the following resources to aid in hazard determination:

- Occupational Safety and Health Administration (29 CFR part 1910, subpart Z, Toxic and Hazardous Substances)
- American Conference of Governmental Industrial Hygienists (Threshold Limit Values and Biological Exposure Indices)
- U.S. Department of Health and Human Services, National Toxicology Program (Ninth Annual Report on Carcinogens)
- International Agency for Research on Cancer (IARC), Monographs and related supplements, Volumes 1 through 77

Chemicals Mixed at the Mine: When chemicals are mixed at the mine, your mine operator must assess their hazard potential based on testing results or other available scientific evidence. If a chemical mixture that has not been tested is used at the mine, MSHA assumes it is hazardous under the following conditions:

- It contains 1% or more of a hazardous non-carcinogen.
- It contains 0.1% or more of a component considered carcinogenic.
- Evidence suggests that a component of the mixture could be released in a concentration hazardous to miners.

The specific guidelines in the Identifying Hazardous Chemicals table (CFR 47, Subpart C, Table 47.21) gives specific procedures to aid you in your determination of whether a chemical is hazardous or not. You can refer to the full table in the Module Resource Materials. Your mine operator's HazCom program will have written instructions on how to follow these determination procedures at a particular mine worksite.

Are any chemicals exempt from hazard determination under the HazCom program?

Yes. Certain chemicals can be exempt from the hazard determination process of your mine operator's HazCom program because they are already regulated by other Federal agencies. You should understand these exemptions and restrictions before you conduct your hazard determination.

The following chemicals are exempt from HazCom Standards if the appropriate exemption conditions are met:

Chemicals and Products Exempt from the HazCom Standard

Exemption	**Conditions for Exemption**
Article	If, under normal conditions of use, it—

	(1) Releases no more than insignificant amounts of a hazardous chemical, and
	(2) Poses no physical or health risk to exposed miners.
Biological hazards	All biological hazards, such as poisonous plants, insects, and micro-organisms.
Consumer product or hazardous substance regulated by CPSC	(1) If the miner uses it for the purpose the manufacturer intended; and
	(2) Such use does not expose the miner more often and for longer periods than *ordinary consumer use.*
Cosmetics, drugs, food, food additive, color additive, drinks, alcoholic beverages, tobacco and tobacco products, or medical or veterinary device or product, including materials intended for use as ingredients in such products (such as flavors and fragrances)	When intended for personal consumption or use.
Radiation	All ionizing or non-ionizing radiation, such as alpha or gamma, microwaves, or x-rays.
Wood or wood products, including lumber	If they do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use. For example, wood is not exempt if it is treated with a hazardous chemical or if it will be subsequently cut or sanded.

Hazardous waste: If your mine produces or uses hazardous waste they must provide you with information about the chemical components of the waste, a description of its physical or health hazards, and specify appropriate protective measures.

While there are a few exemptions from the standard HazCom rule, remember that these chemicals can still cause physical or health problems if misused!

Potential Exemptions from HazCom Rules

Consumer products may be exempt from HazCom. If you buy an ordinary consumer product, it's exempt from HazCom if:

- You use it as the manufacturer intended

- Your mine work does not expose you to it more often or for longer duration than ordinary consumer use

Additionally, certain articles or manufactured material goods may be exempt from HazCom, such as plastic and metal pipes, conveyor belts, repair steel, and tires. Even if they contain a hazardous chemical, articles are exempt if they:

- Release no more than insignificant amounts of a hazardous chemical
- Pose no physical or health risk to exposed miners

While no amount of hazardous chemicals is good for you, the National Institute for Occupational Safety and Health advises that the recommended exposure limit (REL) is 1 part per million (equivalent to 3.6 milligrams per cubic meter), which should not be surpassed within a 30-minute timeframe. [Table 47.11, subpart b, definitions].

Personal Items

You don't need to include food, tobacco products, drugs, cosmetics, or other such personal items in either your hazard determination or your HazCom program. They are exempt if they are packaged and labeled for retail sale and intended for an individual miner's personal consumption or use.

How do I know if a product I buy for my mine worksite is considered dangerous?

If you are buying a product for use at a mine worksite, first, check the label and MSDS. They will state if it is hazardous. Then, ask:

- Can it cause harm?
- Can miners be exposed to that harm normally or in an emergency?

If both answers are "yes," it's hazardous under HazCom rules.

What if miners are exposed, but it's below the limit? That doesn't matter for HazCom. If it can harm miners under the right conditions, it is hazardous under HazCom rules.

What's meant by "potential to harm"? If a chemical's basic traits are dangerous, such as being poisonous or flammable, it is hazardous.

What is meant by "potential exposure"? Some chemicals might be risky, but they might not fall under HazCom procedures if miners can't be exposed. However, if a chemical is on-site, exposure is likely.

Is it Hazardous or Not?

In some instances, the choice of whether a chemical is hazardous or not is clear. For example, with a chemical like bleach, the potential harm is well-known and the decision whether to include the chemical under HazCom is relatively simple. However, many chemicals that you may not work directly with in the mining process, such as diesel fuel and motor oil, are commonly found at mine worksites and the decision to include them under HazCom may not be as simple.

You have many tools at hand for proper chemical determination. When in doubt, consider exposure to be likely for any chemical at a mine worksite, and do your due diligence to explore the MSDS and your mine operator's HazCom rules.

Proper Documentation and Material Safety Data Sheets

Your mine operator must maintain a comprehensive list of all hazardous chemicals known to be present at the mine. This list uses specific chemical names that allow easy cross-referencing between the list itself. The list must include:

- The labels on chemical containers
- Their respective Material Safety Data Sheets (MSDSs)

This process of chemical documentation ensures that everyone knows exactly which chemicals are present at a mine worksite and their associated risks.

What if there are multiple operators at my worksite?

For mines with multiple operators, additional procedures are in place. These include:

- Providing reciprocal access to MSDSs for all operators
- Sharing information about the labeling system used on chemical containers
- Recommending appropriate protective measures to minimize risks to all workers' health and safety

These procedures help ensure that all parties understand the hazards regardless of which operator is managing a particular tasks or area of the worksite

Material Safety Data Sheets

Part of a HazCom program is to prepare and maintain a Material Safety Data Sheet (MSDS). A chemical's MSDS provides all the information needed to understand the chemical. It serves as a reference document for anyone exposed at your mine. The MSDSs must be available to anyone, and quickly accessible in the event there is an emergency and you need to know what chemical compounds you are working with. Think of the MSDS as the best way to share information on the chemicals you and your fellow miners may come into contact with at your mine worksite.

Your mine operator must maintain a current MSDS for every hazardous chemical that they either produce or use. No exceptions to this rule! They must also update the MSDS with new significant information about the chemical's hazards or safety measures within three months of learning about it.

What does a MSDS include?

Each MSDS created by the mine operator must be clear, accurate, and written in English. The MSDS must contain information about the chemical for the following categories (or it must indicate if no information is available):

- **Identity:** The chemical and common name if it is a single substance and those of the hazardous ingredients if it is a mixture. It must permit cross-referencing between the list of hazardous chemicals, the chemical's label, and the MSDS.
- **Properties:** The physical and chemical properties, such as boiling point, melting point, vapor pressure, evaporation rate, solubility in water, pH, appearance and odor, flash point and flammability limits.
- **Physical Hazards:** The potential for fire, explosion, and reactivity.
- **Health Hazards:** The potential to cause an illness or injury, such as its acute and chronic health effects, the signs and symptoms of exposure, any medical conditions that are aggravated by exposure and the primary routes of entry.
- **Carcinogenicity:** Information about the chemical's carcinogenicity.
- **Exposure Limits:** Either MSHA or OSHA exposure limit, if there is one, or any other limits recommended by the preparer of the MSDS, such as found on an International Chemical Safety Cards (ICSC) or Workplace Hazardous Material Information Sheet (WHMIS).
- **Safe Use:** Any precautions for safe use, such as appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks.
- **Control Measures:** Such as ventilation, process controls, restricted access, protective clothing, respirators, and goggles.
- **Emergency Information:** Appropriate emergency procedures, such as special instructions for firefighters and first aid procedures; and the name, address, and telephone number of a contact person who can provide additional information about the hazardous chemical and the appropriate emergency procedures.
- **Date Prepared:** The preparation or revision date of the MSDS.

See the Module Resource Materials for a sample MSDS.

All MSDS must be accessible in the area where you or fellow miners could be exposed to the chemical. Alternatively, your mine operator may store MSDSs centrally in a digital format, provided they are easily accessible to miners in case of an emergency.

Does a chemical still need an MSDS if it is brought to the mine?

Yes. If a hazardous chemical is brought to the mine, your mine operator can use the MSDS provided by the manufacturer or supplier, create their own MSDS, or obtain one from another reliable source. But, you still must have a valid MSDS! Importantly, if your mine operator obtains an MSDS from the manufacturer, supplier, or another source, they are not accountable for its correctness. However, if you understand it to be inaccurate at any time, your mine operator must:

- Replace an outdated MSDS upon receiving an updated version
- Obtain an accurate MSDS promptly after discovering any inaccuracies

What if the manufacturer updates the MSDS?
If the manufacturer updates the MSDS, your mine operator should retain only the most current version. If the updated information significantly affects safety and health, your mine operator must inform you about these changes.

Chemical Byproducts and MSDS Disposal

If a chemical hazard is a *byproduct* of mining, say your welding work releases a gas that is already accounted for in an MSDS, the operator is not required to create a new MSDS for this gas (chemical).

Your mine operator must keep an MSDS for each chemical as long as that chemical remains at the mine. Before disposing of an MSDS, your mine operator must inform you at least 3 months in advance. This notification can be given verbally, in writing, through a company newsletter, during a safety meeting, or by posting it on the mine bulletin board.

Trade Secrets and Hazardous Chemicals

Mine operators may also keep the identity (including the name and other specific identification) of certain hazardous chemicals secret if they are classified as **trade secrets**, but there are rules they must follow:

- **Disclosure to Miners and Health Professionals:** Miners, their representatives, and health professionals must be told the identity of these trade secret chemicals if they ask for it.
- **MSHA Requirements:** Even if a chemical is a trade secret, mine operators must give MSHA all necessary information when asked. They have to tell MSHA it's a trade secret so MSHA can verify and protect its confidentiality.
- **Medical Emergencies:** In a medical emergency where knowing the chemical's identity is critical for treatment, the mine operator must tell the treating health professional right away. They can ask for a confidentiality agreement later.
- **Non-Emergency Requests:** If someone asks for the identity of a trade secret chemical in a non-emergency (like for health assessments or selecting protective gear), the request must be in writing. They need to explain why the other information isn't enough, how they'll keep it confidential, and promise to use it only for health reasons.

- **Confidentiality Agreements:** Any disclosure of trade secret chemical identities must stick strictly to the agreed health purposes. Legal actions can be taken if confidentiality is breached.

Note that the existence of the chemical cannot be kept a secret, only its identity.

Good work. You now have an understanding of the required processes to identify and document hazardous chemicals at your mine worksite. Next, we will consider how to properly label these chemicals.

6.5 LABELS AND OTHER FORMS OF WARNING

To ensure that you are able to identify hazardous chemicals quickly, understand their risks, and make immediate safety decisions in the case of an emergency, it is important that you know how to properly label these substances.

A **label** under HazCom requirements is any written, printed, or graphic material displayed on or affixed to a container to identify its contents and convey other relevant information. The purpose of a label for hazardous chemicals is to provide immediate warnings about a chemical's most serious hazards.

Therefore, containers holding hazardous chemicals must be marked with the chemical's name and appropriate safety warnings.

What information is needed on chemical labels?
Labels must be clear, legible, accurate, in English, and convey the appropriate hazard information. They should include the chemical's identity, hazard warnings, target organs affected, and the name and address of a responsible party who can provide more information about the chemical if needed. Additional warnings in other languages or symbols can also be added to labels to help miners better understand the label. However, they must not *replace* the original label requirements.

Chemical Label Examples

Let's take a look at some common chemical labels you may encounter on consumer products at a mine worksite. Note how chemical labels may vary in:

- Size
- Shape
- Color
- Text

Importantly, the labels serve as indicators of whether you might need to further consult the chemical's MSDS or related HazCom documents.

6.1: Burn hazards can be difficult to recognize initially; always be sure to check for posted warnings.

6.2: Each of these warnings must always be heeded when posted at any mine worksite.

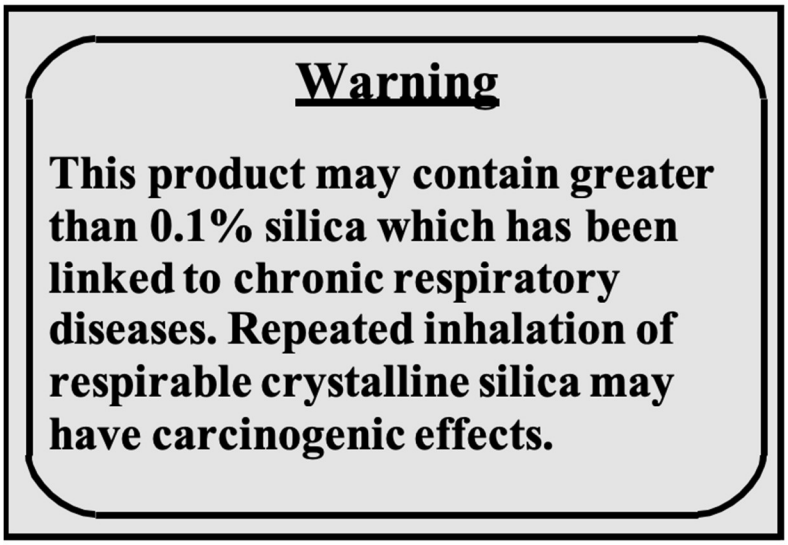
WARNING

Injurious to eyes. Use of tight-fitting goggles is recommended. Causes skin irritation. Gloves and protective clothing recommended. Avoid breathing dust. A NIOSH approved respirator is recommended. Avoid skin and eye contact with wet cement. Can cause burns.

Portland cement contains in excess of .1% crystalline silica. Prolonged and repeated inhalation of crystalline silica can cause silicosis, a disabling and potentially fatal lung disease. Additionally, respirable crystalline silica has been designated as carcinogenic to humans.

Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. In case of eye contact, flush with plenty of water for at least fifteen minutes. Consult a physician immediately. Keep out of the reach of children.

6.3: While chemical warnings may seem daunting to understand, it is important to read them thoroughly to understand what chemicals you are working with and how to best handle them. Failure to do so can and will result in injury, and even fatality.



6.4: Never ignore a chemical label; each carries specific information that may be the difference between life and death in a mining worksite.

What does a label do?

A label is the first source of information for miners about a chemical. It shows the chemical's name, its characteristics like flammability and reactivity, what protective gear to use, and any special precautions needed when working with it.

Any hazardous chemicals brought to the mine should already be labeled. If they are not, you should contact the manufacturer or supplier right away!

Does every chemical container need a label?

Yes, unless it is exempt from labeling requirements below (30 CFR, 47.92).

Hazardous Chemicals Exempt from Labeling

Exemption	Conditions for Exemption
Chemical substance, consumer product, hazardous substance, or pesticide	When kept in its manufacturer's or supplier's original packaging labeled under other federal labeling requirements.
Hazardous substance	When the subject of remedial or removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in accordance with EPA regulations.
Hazardous waste	When regulated by EPA under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act.
Raw material being mined or processed	While on mine property, except when the container holds a mixture of the raw material and another hazardous chemical and the mixture is found to be hazardous under § 47.21—Identifying hazardous chemicals.
Wood or wood products, including lumber	Wood or wood products are always exempt from labeling.

Additionally, your mine operator does not have to label a temporary, portable container under these conditions:

- The miner using the portable container knows the identity of the chemical, its hazards, and any protective measures needed
- Leaves the container empty at the end of the shift

If not, your operator must mark the temporary, portable container with at least the common name of its chemical contents.

Temporary containers: If a substance is moved from a labeled container into a portable, unlabeled container, and will be used by the person who transferred it, it does not need a label. Other miners can also use this unlabeled container if they are informed about its contents and hazards. However, if the material is not used up by the end of the shift, you must label it with at least the chemical's common name or return it to its original labeled container.

While MSHA does not require labeling for mine products that *leave* the property, your mine operator must provide a HazCom appropriate label if a customer asks for it. Alternatively, many mines include label information on weigh tickets as an alternative labeling method.

If you have **stationary containers** like bins, hoppers, or tanks holding hazardous chemicals, you can use suitable alternatives instead of labels. Mine operators may use:

- Signs
- Placards
- Process sheets
- Batch tickets
- Operating procedures

instead of labels for fixed process containers, given that these alternatives clearly identify the specific container, convey all required information similar to a label, and remain easily accessible to miners in the work area throughout every shift. Your mine operator will have established procedures for using these label alternatives. These alternatives must identify the container, provide the same information as a label, and be easily accessible to miners throughout each work shift.

Materials produced from the mining process: Containers of raw materials being mined or milled do not need labels if no hazardous chemicals are added. For instance, feed hoppers at a primary crusher or wash tanks for a sand plant do not require labeling. However, containers of hazardous chemicals produced during ore processing, such as tanks containing ammonium hydroxide wash water or feed tanks for hazardous flotation reagents, must be labeled.

What if a label is damaged, incorrect, or out of date?
If a label becomes illegible due to wear and tear, it must be replaced immediately during the same shift. You are not responsible for errors on labels provided by manufacturers or suppliers. However, if you receive updated label information, you must replace the existing label. Significant new information about your product must be reflected on the label within three months, and affected miners should be informed immediately.

Remember. You should never use chemicals from unlabeled containers unless they are temporary and portable, and you know what is inside! Ask your mine operator about their HazCom procedures before you work with any hazardous chemicals.

Hazardous Chemicals and HazCom Programs: Let's Review What You've Learned!

You learned a lot of new information in this module. Some concepts might be completely new to you, or, you might have been familiar with some of the concepts or terms.

Either way, take a minute to review what you should now be able to do after completing this module.

You can now:

- Distinguish between general hazard communication and HazCom programs with particular understanding of your mine operator's HazCom requirements
- Understand the process to identify and document a hazardous chemical as required by HazCom
- Know your training and information rights regarding HazCom
- Determine the proper ways to label hazardous chemicals based on their use, location, and containers
- Take appropriate safety measures to help prevent hazardous chemical exposure and its impact on your body

If you are confident that you can accomplish these tasks above, proceed to the Quiz.

If you want more time to review and reflect on these tasks, return to the specific pages you want to review. You can also review additional expanded content in the Module Resource Materials.

MODULE RESOURCE MATERIALS

List of Hazardous Chemical Concepts and Definitions

- **Access:** The right to look at and copy records.
- **Article:** A manufactured item that has a specific shape or design and is used for its shape or design.
- **Chemical:** Any element, chemical compound, or mixture of these.
- **Chemical name:** The scientific designation of a chemical as defined by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS), or a name that will clearly identify the chemical for the purpose of conducting a hazard evaluation.
- **Common name:** Any name or identifier (like a code, trade name, brand name, or generic name) used to refer to a chemical instead of its official chemical name.
- **Consumer product:** A product or part of a product that is packaged, labeled, and distributed in the exact same form and strength as it is sold for use by the general public.
- **Container:** Any item used to hold chemicals, but not including things like pipes or engines.
- **Cosmetics and drugs:** Cosmetics are products used on the body for cleaning, beautifying, enhancing attractiveness, or changing appearance. Drugs are products used to affect the structure or functions of the bodies of humans or other animals.
- **CPSC:** The U.S. Consumer Product Safety Commission.
- **Designated representative:** Someone authorized to represent miners' rights.
- **EPA:** The U.S. Environmental Protection Agency
- **Exposed:** When someone is at risk of being harmed by a chemical at work.
- **Foreseeable emergency:** Any incident that could release chemicals into a mine.
- **Hazard warning:** Any words, pictures, or symbols on a label or warning that describe the particular physical and health dangers posed by a chemical. These warnings must detail the specific risks associated with physical hazards (like fire or explosion) and health hazards (such as toxicity or irritation).
- **Hazardous chemical:** Any chemical that can present a physical or health hazard.
- **Hazardous substance:** Any substance regulated by the CPSC under the Federal Hazardous Substances Act or by the EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- **Hazardous waste:** Chemicals that are regulated by the EPA under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA).
- **Health hazard:** A chemical that has been scientifically proven to cause acute or chronic health effects in people exposed to it.
- **Identity:** A chemical's common or chemical name.
- **Label:** Information on containers about what chemical or mixture is inside.
- **Material safety data sheet (MSDS):** Information about hazardous chemicals.

- **Mixture:** Any mixture of two or more chemicals that does not occur as a result of a chemical reaction.
- **Ordinary consumer use:** Household, family, school, recreational, or other personal use or enjoyment, as opposed to use for business purposes.
- **OSHA:** U.S. Occupational Safety and Health Administration.
- **Physical hazard:** A chemical that is a combustible liquid, compressed gas, or explosive.
- **Produce:** To create, manufacture, process, formulate, generate, or repackage.
- **Raw material:** Any material extracted from natural deposits through mining or upgraded through milling.
- **Use:** How chemicals are packaged, handled, worked with, or transferred.
- **Work area:** Any location within or around a mine where miners perform their duties.
- **Trade secret:** Confidential information that gives a business an edge.

How to Determine if a Chemical is Hazardous: Guidelines in Table 47.21- Title 30 Part 47, Subpart C

Chemical Category	Basis for Determining if a Chemical is Hazardous
Chemical brought to the mine	The chemical is hazardous when its Material Safety Data Sheets or container label indicates it is a physical or health hazard; or the operator may choose to evaluate the chemical using the criteria in paragraphs (b) and (c) of this table.
Chemical produced at the mine	The chemical is hazardous if any one of the following that it is a hazard:
	(1) Available evidence concerning its physical or health hazards.
	(2) MSHA standards in 30 CFR chapter I.
	(3) Occupational Safety and Health Administration (OSHA), 29 CFR part 1910, subpart Z, Toxic and Hazardous Substances.
	(4) American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices (2001).
	(5) U.S. Department of Health and Human Services, National Toxicology Program (NTP), Ninth Annual Report on Carcinogens, January 2001.
	(6) International Agency for Research on Cancer (IARC), Monographs and related supplements, Volumes 1 through 77.
Mixture produced at the mine	(1) If a mixture has been tested as a whole to determine its hazards, use the results of that testing.
	(2) If a mixture has not been tested as a whole to determine its hazards— (i) Use available, scientifically valid evidence to determine its physical hazard potential; (ii) Assume that it presents the same health hazard as a non-carcinogenic component that makes up 1% or more (by weight or volume) of the mixture; and (iii) Assume that it presents a carcinogenic health hazard

	if a component considered carcinogenic by NTP or IARC makes up 0.1% or more (by weight or volume) of the mixture.
	(3) If evidence indicates that a component could be released from a mixture in a concentration that could present a health risk to miners, assume that the mixture presents the same hazard.

Sample Written HazCom Program

Below is a sample of a written HazCom program outline. While your work location may have some different language, the sample below covers all the required items of a good HazCom program.

Hazard Communication Program
Mine Name: _____
ID No.:_____

1. **Hazard Determination (47.32(a)(1)**) Every chemical brought onto the mine property or produced on-site will undergo evaluation to determine if it meets hazardous criteria outlined in Table 47.21 (refer to Hazard Determination tab).

2. **Labels and Other Forms of Warning (47.32(a)(2))** The labeling system utilized at this mine includes:

   - Manufacturers' Labels
   - Other (Describe any in-house system, such as special numbers or graphics)

3. **Material Safety Data Sheets (SDS) (47.32(a)(3))** This program ensures the presence of current, legible, and accessible Material Safety Data Sheets (SDS) for each hazardous chemical on the mine site.

   - Manufacturers' SDS
   - Other (If necessary, refer to SDS tab) SDSs will be accessible to miners during each work shift for every hazardous chemical they may encounter, either at each work area or an alternative location provided that it is readily available in emergencies.

4. **Miner Training (47.32(a)(4))** All miners will receive instruction on the physical and health hazards of chemicals in their work areas, protective measures they can take (personal protective equipment, ventilation, warning signs, etc.), and the contents of the mine's HazCom program (47.2) (refer to HazCom Training tab).

   NOTE: *30 CFR, Part 46 & Part 48, have been amended to include HazCom Training Requirements 47.32(c)(1)(2) Training for Other Operators. Other operators will be given access to SDSs and informed about hazardous chemicals, labeling systems, and protective measures.*

5. **List of Hazardous Chemicals (47.32(b)(1,2))** A current list of all hazardous chemicals used, stored, or produced at this mine, including hazardous chemical waste, is maintained.

This is a current list of all hazardous chemicals used, stored, or produced at this mine, including hazardous chemical waste.

Each hazardous chemical on this property will be clearly identified in exactly the same way on the list, its container label, and its corresponding SDS.

No.	Chemical/Common/Trade Name	Mine or Work Area

Limestone Example MSDS

Take a look at the MSDS below for Limestone. As you can see, it is very detailed. Getting all the information correct on the MSDS is crucial to your safety.

1. **IDENTIFICATION**
   - **Chemical Name:** Limestone
   - **Chemical Formula:** N/A
   - **Molecular Weight:** N/A
   - **Trade Name:** Crushed Stone
   - **DOT Identification No:** None
   - **Synonyms:** Aggregate, Aglime, Barn Lime, Coverstone, Flexible Base, Fluxing Agent, Manufactured Sand, Mineral Filler, Screenings
2. **PRODUCT AND COMPONENT DATA**
   - **Component(s) Chemical Name**
     - Limestone*: 1317-65-3, 100%
     - *Composition varies naturally – typically contains quartz (crystalline silica). 14808-60-7, >1%
3. **PHYSICAL DATA**
   - **Appearance and Odor:** Angular gray, white, and tan particles ranging in size from powder to boulders. No odor.
   - **Specific Gravity:** 2.6 – 2.75
   - **Boiling Point:** N/A
   - **Vapor Density in Air:** N/A
   - **Vapor Pressure (mmHg @ 20°C):** N/A
   - **% Volatile, By Volume (@ 100°F):** 0%
   - **Evaporation Rate:** 0
   - **Solubility in Water:** 0
4. **REACTIVITY DATA**
   - **Stability:** Stable
   - **Conditions to Avoid:** Contact with incompatible materials (see below).
   - **Incompatibility (Materials to Avoid):** Powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.
   - **Hazardous Decomposition Products:** Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents as mentioned above.
   - **Hazardous Polymerization:** Not known to polymerize
5. **FIRE AND EXPLOSION HAZARD DATA**
   - **Flashpoint (Method Used):** Not flammable
   - **Flammable Limits in Air:** Not flammable

- **Extinguishing Agents:** None required
- **Unusual Fire and Explosion Hazards:** Contact with powerful oxidizing agents may cause fire and/or explosions (see section 4 of this MSDS).

6. **TOXICITY AND FIRST AID**
   - EXPOSURE LIMITS (See full MSDS document for detailed exposure limits and abbreviations)
   - Limestone (Calcium Carbonate): ACHIH TLV® = 10mg/m³; OSHA PEL = 15mg/m³ (total dust); OSHA PEL= 5mg/m³ (respirable fraction), MSHA PEL = 10mg/m³ (total dust).
   - Respirable Crystalline Silica (SiO_2 / Quartz): ACGIH TLV® = 0.05mg/m³; MSHA and OSHA PEL = 10mg/m³ ÷ (%SiO_2+2), for respirable dust containing crystalline silica.
7. **PERSONAL PROTECTION AND CONTROLS**
   - **Respiratory Protection:** For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1mg/m³, a NIOSH approved dust respirator is recommended. For higher levels, consult applicable standards.
   - **Ventilation:** Local exhaust or general ventilation adequate to maintain exposures below appropriate limits.
   - **Skin Protection:** See hygiene section.
   - **Eye Protection:** Safety glasses with side shields or dust goggles recommended.
8. **STORAGE AND HANDLING PRECAUTIONS**
   - Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use appropriate personal protection as per Section 7 of this MSDS.
9. **SPILL, LEAK AND DISPOSAL PRACTICES**
   - **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Use personal protection and controls as described in Section 7. Prevent material from entering drains or sewers.
   - **WASTE DISPOSAL METHOD:** Dispose of in accordance with applicable laws and regulations.
10. **TRANSPORTATION**
    - **DOT Hazard Classification:** None
    - **Placard Required:** None
    - **Label Required:** Label as required by OSHA Hazard Communication Standard [29 CFR 1910.1200 (f)] and applicable laws.

For Further Information Contact: [Place here the name, address, and telephone number of the operator or responsible party who can provide more info about the hazardous chemical.]

Date of Preparation: [Insert date]

Emergency Information: [Your company's designated emergency contact]

Notice: * believes the information contained herein is accurate; however, * makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of

the information contained herein by any party. The provision of the information contained herein is not intended to be and should not be construed as legal advice or as ensuring compliance with any federal, state or local laws and regulations. Any party using this product should review all such laws, rules or regulations prior to use.

Simplified Hazard Communication and Reporting Code of Federal Regulations Listing

- **Purpose of a HazCom standard.** To ensure all mine operators identify and assess site chemicals for hazards, establish a HazCom program, and inform workers exposed to chemical risks. Compliance dates: September 23, 2002, for six or more workers, and March 21, 2003, for five or fewer workers. [47.1a-f]
- **Operators and chemicals covered; initial miner training.** Mine operators with six or more miners, should be instructed about chemical hazards, protective measures, and the HazCom program by September 23, 2002. For mine operators with five or fewer miners, provide the same instruction by March 21, 2003. [47.2a, 47.2b]
- **Identifying hazardous chemicals.** A chemical is hazardous if its MSDS or container label indicates physical or health risks. [47.21]
- **Chemicals produced at the mine.** Consider chemicals to be hazardous if evidence, MSHA standards, OSHA regulations, ACGIH limits, NTP carcinogen reports, or IARC classifications show risks. [47.21]
- **Mixtures produced at the mine.** If you directly test mixtures produced at the mine, use those results for hazard determination. If untested, use scientific evidence for physical hazards. [47.21]
- **Requirement for a HazCom program.** Mine operators must develop and implement a written Hazard Communication (HazCom) program for their mine, ensuring it remains current as long as hazardous chemicals are present. They are also responsible for sharing pertinent HazCom information with other on-site operators whose miners could potentially be affected by chemical hazards. [47.31]
- **HazCom program contents.** A HazCom program must include a list of all hazardous chemicals on-site, cross-referenced with labels and MSDSs, and must ensure MSDS access for all operators; inform them about chemicals, container labels, and protective measures for workers. [56.5001c, 57.5001c]
- **Requirement for container labels.** Mine operators must promptly replace missing or illegible container labels and must not remove or damage existing labels on containers of hazardous chemicals. When producing a hazardous chemical, they must create a container label and update it within three months of learning new hazard information. For chemicals brought to the site, operators must replace outdated labels with revised ones from the manufacturer or supplier; they are not liable for inaccuracies on labels provided by these sources. [47.41]
- **Label contents.** Labels must be prominently displayed, easy to read, accurate, and in English. They must clearly show hazard warnings, use a chemical name that allows cross-referencing with the hazardous chemical list and MSDS, and for customer labels, include the operator's or another responsible party's name and address for further information. [47.42]
- **Label alternatives.** Mine operators can use signs, placards, process sheets, batch tickets, or operating procedures instead of labels for fixed process containers, given that these alternatives clearly identify the specific container, convey all required information

similar to a label, and remain easily accessible to miners in the work area throughout every shift. [47.43]

- **Temporary, portable containers.** Mine operators are not required to label temporary, portable containers if the miner using it knows the chemical's identity, hazards, and necessary protective measures, and ensures the container is empty at the shift's end. [47.44]
- **Requirement for an MSDS.** Mine operators must have an MSDS for each hazardous chemical they produce or use, which can be in paper or electronic form for accessibility. If producing a hazardous chemical, operators must create and update its MSDS within three months of learning new hazard or safety information. For chemicals brought to the site, operators rely on MSDSs from manufacturers or suppliers, or obtain their own if necessary. Operators do not need MSDS for intermediate chemicals or by-products if hazards are covered in the source chemical's MSDS. [47.51, 47.52]
- **Alternative for hazardous waste.** If a mine handles hazardous waste the operator must ensure that miners potentially exposed, along with designated representatives, have access to pertinent information about the hazardous waste. [47.53]
- **Availability of MSDS and Retaining MSDS.** Mine operators must ensure that miners can access MSDSs for any hazardous chemicals they might encounter during their shift. MSDSs can be kept either at the specific work area where the chemical is used or produced, or at another location that is easily accessible to miners in case of an emergency. The operator must keep MSDSs for as long as the hazardous chemical remains at the mine. They must also inform miners at least three months before they dispose of any MSDSs, ensuring that necessary information remains available for safety and reference purposes. [47.54, 47.55]
- **Making HazCom Information Available.** Mine operators must provide miners and designated representatives access to all required HazCom materials upon request, excluding trade secrets. Initial HazCom copies and revisions are free; subsequent copies must be reasonably priced. For hazardous chemicals produced, operators must provide customers with requested labels and MSDSs. [47.71, 47.72, 47.73]
- **Trade Secret Hazardous Chemical.** Mine operators may withhold the identity of a chemical deemed a trade secret from the hazardous chemicals list, label, and MSDS if they can substantiate its trade secret status, provide an alternative identifier, note the withheld identity in the MSDS, and include information on its properties and effects. However, they must disclose the chemical’s identity to miners, designated representatives, and health professionals. [47.81]
- **Disclosure of information to MSHA.** Even with a trade secret claim, mine operators must disclose all required information to MSHA upon request. The operator must assert the trade secret claim when providing information to MSHA to allow for determination and protection of its trade secret status. [47.82]
- **Disclosure in a medical emergency.** In a medical emergency a mine operator must promptly reveal the identity of a trade secret chemical to the treating health professional upon request, even without a confidentiality agreement, if the chemical's

identity is essential for emergency treatment. The operator can request a statement of need and confidentiality agreement later. [47.83]

- **Non-emergency disclosure.** Upon request, a mine operator must disclose the identity of a trade secret chemical in a non-emergency to an exposed miner, designated representative, or health professional if specific conditions are met. The request must be in writing, detailing an occupational health need such as hazard assessment, exposure monitoring, medical treatment, or protective equipment selection. It must explain why other disclosed information won't suffice, outline confidentiality procedures, and require a signed agreement to use the information solely for stated health purposes, barring specific authorized circumstances. [47.84]
- **Confidentiality agreement and remedies.** The confidentiality agreement for trade secret chemical identities restricts the use of the chemical identity solely to the health purposes outlined in the written statement of need. The agreement can include legal remedies for breaches, detailing reasonable damages. Parties involved retain the option to pursue non-contractual remedies within the bounds of applicable law. [47.85]
- **Denial of a written request for disclosure.** To refuse a written request for disclosure of a trade secret chemical's identity, the mine operator must submit a written denial within 30 days of the request. The request must contain evidence supporting the trade secret claim, specific reasons for denial, and an explanation of how alternative information can fulfill the medical or occupational health needs without revealing the chemical's identity. [47.86]
- **Review of denial.** A health professional, miner, or designated representative may seek MSHA review of a denied request for trade secret chemical identity disclosure. Submission requires the original request, confidentiality agreement, and mine operator's denial. MSHA may issue citations if disclosure was warranted or enforce additional safeguards if confidentiality measures are insufficient. Disputes are resolved by the Federal Mine Safety and Health Review Commission. [47.87]
- **Exemptions from the HazCom standard.** If a hazardous chemical or substance releases negligible amounts under normal use conditions and presents no physical or health risk to miners exposed, it is exempt. [47.91]
- **Exemptions from labeling**. Chemical substances, consumer products, hazardous substances, or pesticides that remain in their original packaging as labeled under federal requirements are exempt from labeling, as well as hazardous waste, raw materials being mined or processed, and wood products. [47.92]