

# Hazard Communication



**At Trinity Health, safety is a shared responsibility and a reflection of our Core Values.**  
This Hazard Communication course helps colleagues protect themselves, their coworkers, and the patients we serve by providing essential information about hazardous chemicals in the workplace.

## ☰ Introduction

### CHEMICAL SAFETY STARTS HERE

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## ☰ Protecting Your Right to Know and Stay Safe

## ☰ Meeting OSHA's Required Standard for Chemical Safety

### CHEMICAL HAZARD CLASSIFICATIONS

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## ☰ Types of Risks You May Encounter

## ☰ Where You Can Be Exposed

### GETTING TO KNOW PPE

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## ☰ Personal Protective Equipment (PPE)

## HAZARD LABELS AND PICTOGRAMS

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### **Know Your Risks at a Glance**

## UNDERSTANDING SAFETY DATA SHEETS

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### **Accessing Safety Data Sheets (SDSs)**

### **Structure of the SDS**

## THE WRITTEN HAZARD COMMUNICATION PLAN

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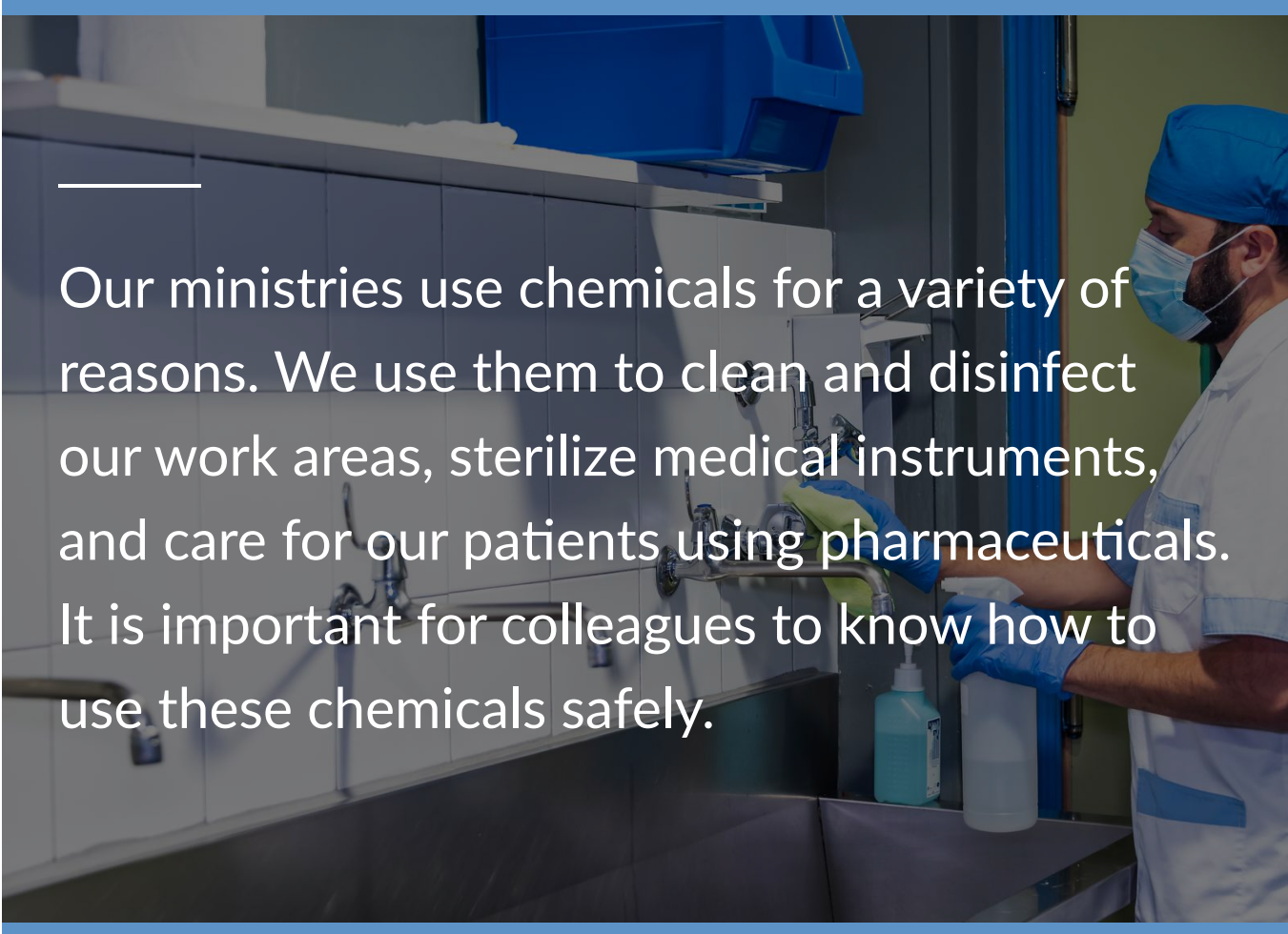
### **Putting It In Writing**

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### **Wrap-up**

# Introduction

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Our ministries use chemicals for a variety of reasons. We use them to clean and disinfect our work areas, sterilize medical instruments, and care for our patients using pharmaceuticals. It is important for colleagues to know how to use these chemicals safely.

## Course Overview

In this course, you will learn how risks and safety measures are communicated when working with chemicals.

Key topics covered in this course include:

- OSHA's Hazard Communication Standard (HazCom) Requirements
- Chemical Hazards (Health and Physical Risks and Common Hazards)
- Personal Protective Equipment (PPE)
- Reading and Understanding Hazard Labels and Pictograms
- Understanding Safety Data Sheets (SDSs)
- The Written Hazard Communication Program



# Protecting Your Right to Know and Stay Safe

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Chemicals that pose risks are common in many work areas. Before starting a new job or when new substances are introduced, you have the right to receive training on the safety measures needed to handle them properly. This foundational knowledge helps prevent accidents and supports a safe work environment.

## **Awareness is the First Step to Safety**

**Our Core Value of Safety starts with awareness, especially when working around chemicals.**

Knowing what substances are present and how they can affect you is essential to staying safe.

That's why OSHA requires every workplace to follow the **Hazard Communication Standard (HazCom)**, also known as the "**Right to Know**" law. This protects your right to know about chemical hazards and supports your ability to make informed decisions.

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# Meeting OSHA's Required Standard for Chemical Safety

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## OSHA's Hazard Communication Standard (HazCom) Requirements

OSHA's HazCom covers four main components. These components are listed below.

*Click to flip each card for a brief description of each part.*

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## Labels



## Labels

Every chemical container must be labeled with information that identifies its specific hazards



## Safety Data Sheets (SDSs)



## Safety Data Sheets (SDSs)

Standardized documents that provide detailed information about properties, hazards, and safe handling of chemicals



## Colleague Training



## Colleague Training

Provide training to ensure  
colleagues understand  
chemical hazards  
and protections



## Written Hazard Communication Program



## Written Hazard Communication Program

Document that outlines  
how Trinity Health ensures  
that all elements: labeling,  
SDSs, and training  
are implemented

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Following HazCom requirements helps colleagues recognize  
chemical risks and take steps to protect themselves, our patients,

**and fellow colleagues.**



# Types of Risks You May Encounter

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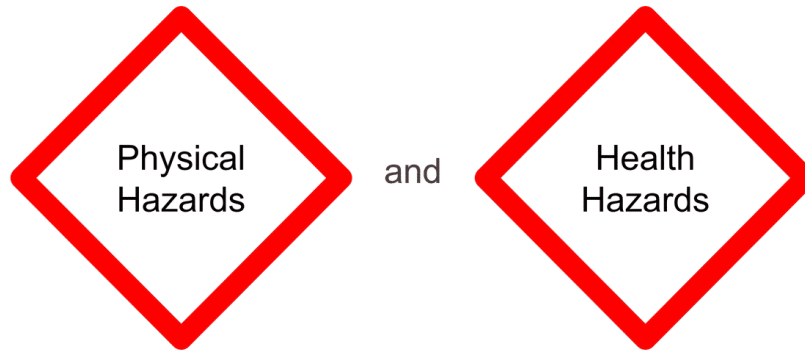
**Take a moment to look around your work environment.**

- Are there chemicals you use as part of your job?
- Do you know which ones are hazardous?

- How could you be exposed?

A chemical is considered hazardous if it has the **potential to cause harm**.

○ OSHA identifies two primary types of chemical hazards: ○



Let's look at both types, starting with **physical hazards**.

## Physical Hazards



A chemical is a **physical hazard** if it:

- Is likely to burn or support a fire
- May explode or release high pressures that can cause bodily injury
- Can have a sudden **violent reaction** on its own, or when exposed to water

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Two types of **physical hazards** involving chemicals are **flammable liquids** and **compressed gases**.

*Click the cards below to view examples of each.*

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### Flammable Liquids



Liquids that ignite easily and burn rapidly

### Flammable Liquid Examples



- Gasoline
- Ethanol-based cleaners
- Isopropyl alcohol (rubbing alcohol)

### Compressed Gases



Gases stored under high pressure

### Compressed Gas Examples



- Oxygen tanks
- Nitrogen cylinders
- Nitrous oxide cylinders



A chemical is considered a **health hazard** if it:

- Can cause short-term or long-term **harm to the body**, such as skin and eye damage, allergic reactions, or breathing problems
- **Affects vital systems**, like the nervous and circulatory systems, and organs such as lungs, liver, or kidneys
- Is linked to **serious health effects**, including cancer, reproductive harm, birth defects, or even death

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OSHA calls out three commonly used hazardous chemicals in health care settings. These substances are widely used and pose serious health risks to workers through routine exposure.

Click each tab to learn more about them.

ETHYLENE OXIDE (ETO)

FORMALDEHYDE

GLUTARALDEHYDE

**Ethylene oxide** (ETO) is a chemical commonly used for sterilizing medical equipment. Click on the table to enlarge.

Where You Could Be Exposed	Health Hazard	Protection & Treatment
<ul style="list-style-type: none"><li>• Procedural areas</li><li>• Laboratories</li><li>• Instrument processing departments</li></ul>	<ul style="list-style-type: none"><li>• Eye irritation and injury to the cornea</li><li>• Frostbite, severe skin irritation, blistering</li><li>• Respiratory irritation, lung injury, shortness of breath</li><li>• Headache, nausea, vomiting, diarrhea</li><li>• Cancer and reproductive effects</li></ul>	<ul style="list-style-type: none"><li>• Wear proper PPE.</li><li>• Ensure proper ventilation when working with and storing ETO gas.</li><li>• Use ETO away from smoking material, open flames, and some electrical devices.</li></ul>

Source: Occupational Safety and Health Administration. (1998, January 8). 1910.1047 App A - Substance Safety Data Sheet for Ethylene Oxide. US Department of Labor. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1047AppA>

ETHYLENE OXIDE (ETO)

FORMALDEHYDE

GLUTARALDEHYDE

**Formaldehyde** is a chemical that can be used as a disinfectant or sterilant. It can be used to prepare viral vaccines, as an embalming agent, or as a tissue fixative. Click on the table to enlarge.

Where You Could Be Exposed	Health Hazard	Protection & Treatment
<ul style="list-style-type: none"><li>• Laboratories</li><li>• Operating rooms</li></ul>	<ul style="list-style-type: none"><li>• Can cause an immune system response</li><li>• Highly irritating to the skin, eyes, nose, and throat, and is a cancer hazard</li><li>• May cause severe allergic reactions of the skin, eyes, and respiratory tract</li><li>• Ingestion can be fatal</li></ul>	<ul style="list-style-type: none"><li>• Wear proper PPE.</li><li>• Provide showers and eyewash stations if splashing is likely.</li></ul>

Source: US Centers for Disease Control and Prevention. Occupational Safety and Health Administration. (2011, April). OSHA FactSheet: Formaldehyde. United States Department of Labor. <https://www.osha.gov/sites/default/files/publications/formaldehyde-factsheet.pdf>

ETHYLENE OXIDE (ETO)

FORMALDEHYDE

GLUTARALDEHYDE

**Glutaraldehyde** is used in operations such as cold sterilization, high-level disinfection, tissue fixing, preservation, and x-ray processing.

*Click on the table to enlarge.*

Where You Could Be Exposed	Health Hazard	Protection & Treatment
<ul style="list-style-type: none"><li>• Areas where cold sterilization is done</li><li>• Operating rooms</li><li>• Dialysis departments</li><li>• Endoscopy units</li><li>• Intensive care units</li><li>• Research units</li><li>• Pharmacy</li><li>• Radiology</li><li>• Laboratories</li></ul>	<ul style="list-style-type: none"><li>• Throat and lung irritation</li><li>• Asthma, asthma-like symptoms, and breathing difficulty</li><li>• Nose irritation, sneezing, wheezing, and nosebleeds</li><li>• Burning eyes and conjunctivitis</li><li>• Staining of the hands (brownish or tan)</li><li>• Hives</li><li>• Headaches and nausea</li></ul>	<ul style="list-style-type: none"><li>• Wear proper PPE.</li><li>• Use local exhaust ventilation and at least 10 room air exchanges per hour.</li><li>• Keep glutaraldehyde baths under a fume hood where possible.</li><li>• Seal or cover all containers holding glutaraldehyde solutions.</li></ul>

Source: The National Institute for Occupational Safety and Health. (2014, June 6). Glutaraldehyde – Occupational Hazards in Hospitals. Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/docs/2001-115/>



## Knowledge Check

Check your understanding before you move on.

According to OSHA, there are two types of chemical hazards. What are they?

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- Health
- Environmental
- Physical
- Mental

**SUBMIT**



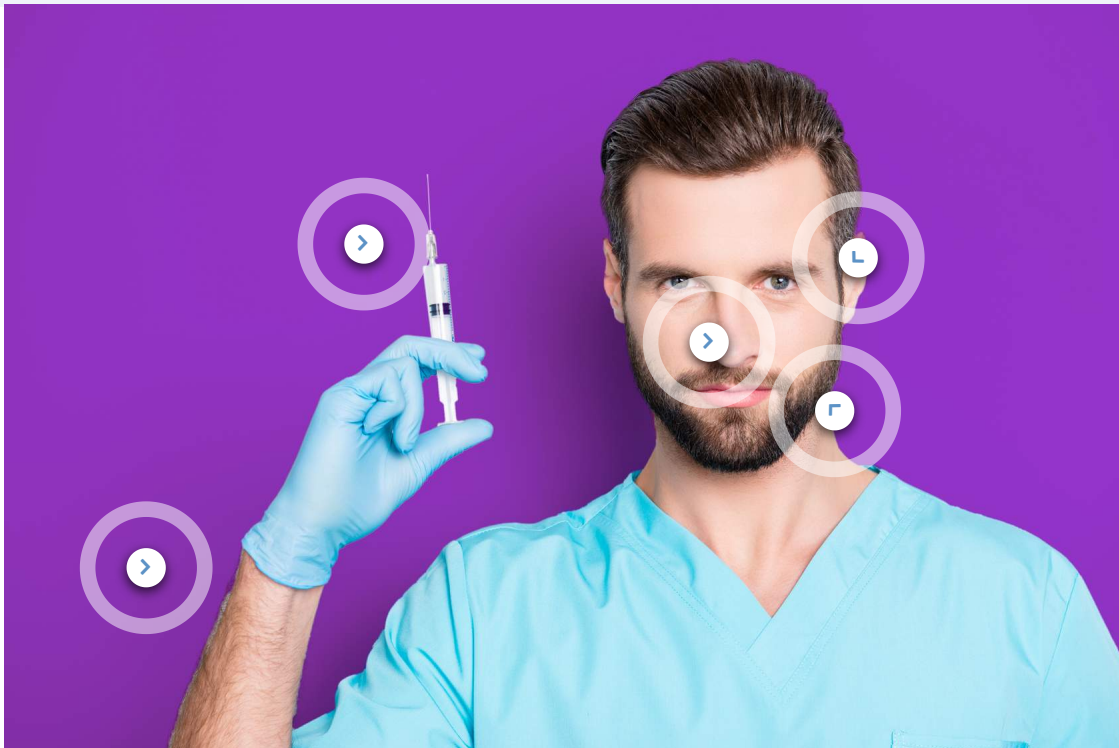
# Where You Can Be Exposed

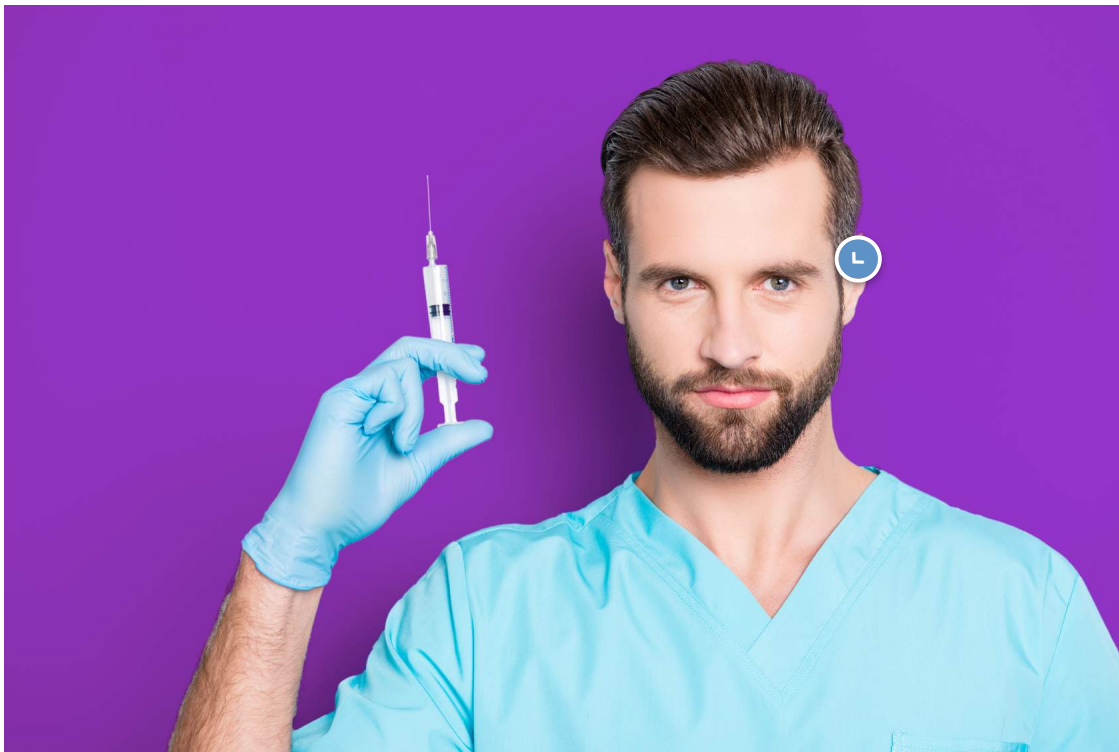
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## Routes of Exposure to Hazardous Chemicals

There are different ways you can come into contact with harmful chemicals. The effects depend on the type of chemical, how strong it is, how long you're exposed to it, and how it enters your body.

*Click the arrows to see how chemicals enter the body and how they can harm you.*

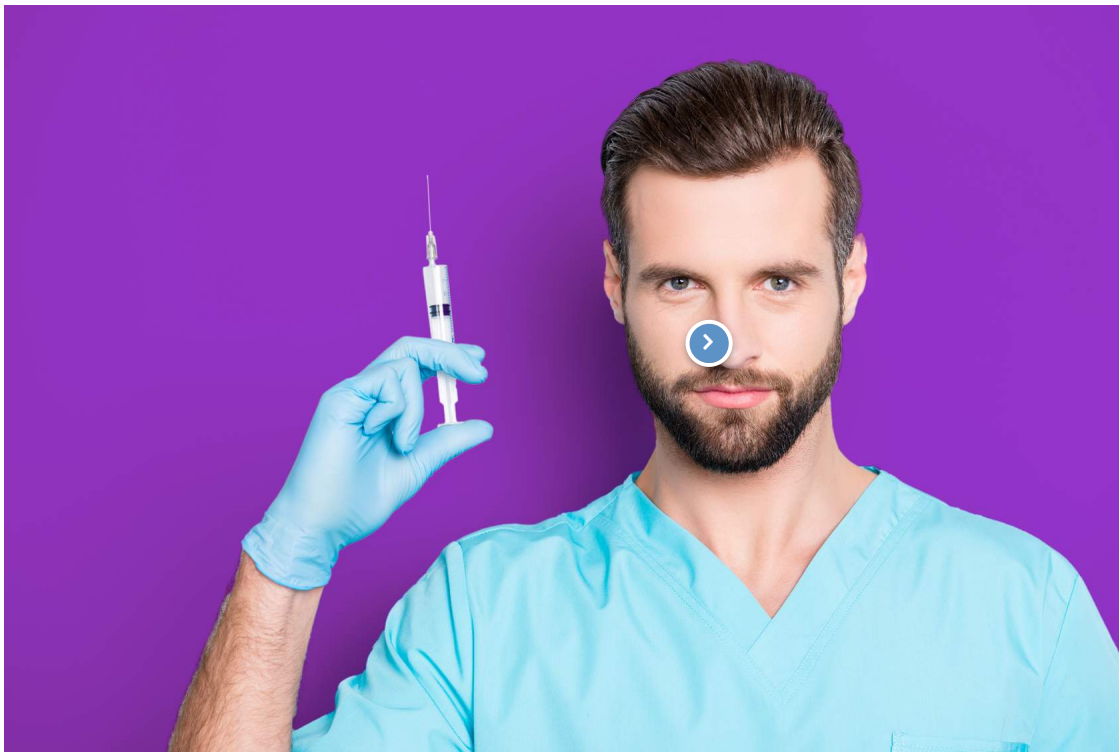




## Eye Contact

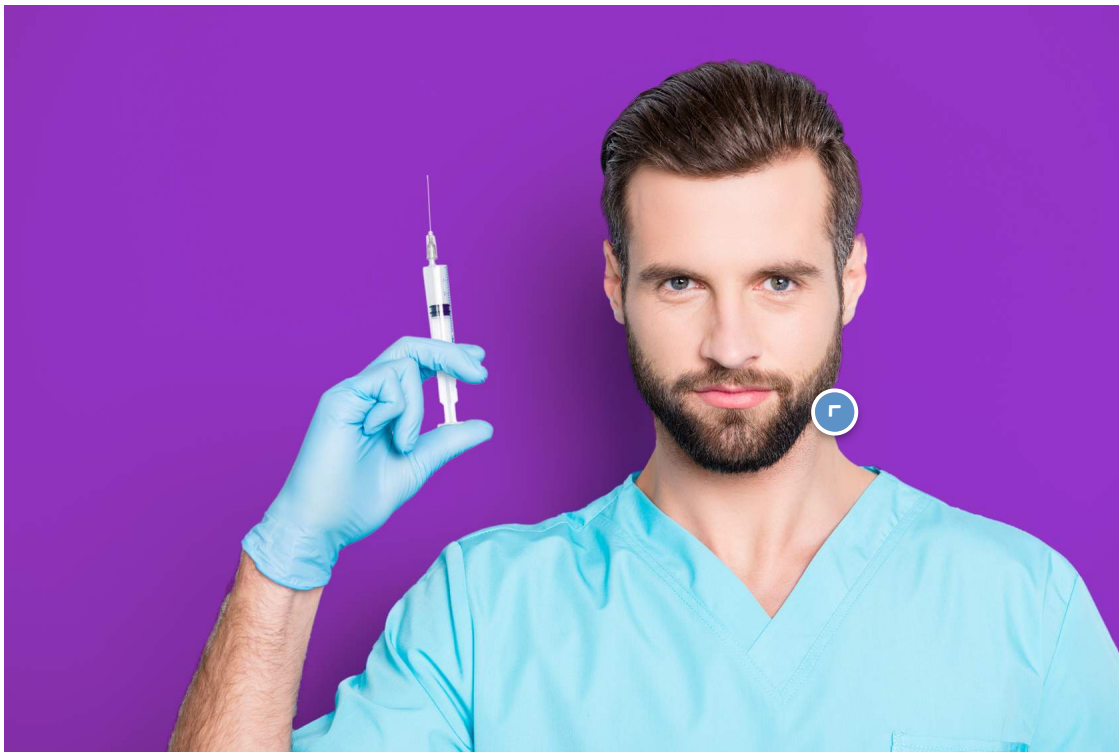
**Chemical splashes, vapors, or tiny particles in the air** can irritate or damage the eyes.

OSHA requires proper eye protection whenever there's a chance of being exposed to chemicals.



### **Inhalation (Nose/Lungs)**

**Breathing in gases, vapors, dust, or mist** is one of the most common ways colleagues can be exposed to harmful chemicals. This type of exposure can cause coughing, headaches, dizziness, confusion, and nausea.



### Ingestion (Mouth)

Swallowing harmful chemicals is not common, but it can happen. This might occur if someone **eats, drinks, or smokes in areas where chemicals are present, or if they touch their mouth with dirty hands or gloves**. Ingesting chemicals can cause nausea, vomiting, trouble swallowing, organ damage, cancer, or reproductive harm.



## **Injection**

Injections happen when a **substance or chemical enters the body through a puncture** wound. This can occur if someone is poked by a contaminated sharp object, like a needle, broken glass, or other sharp item.



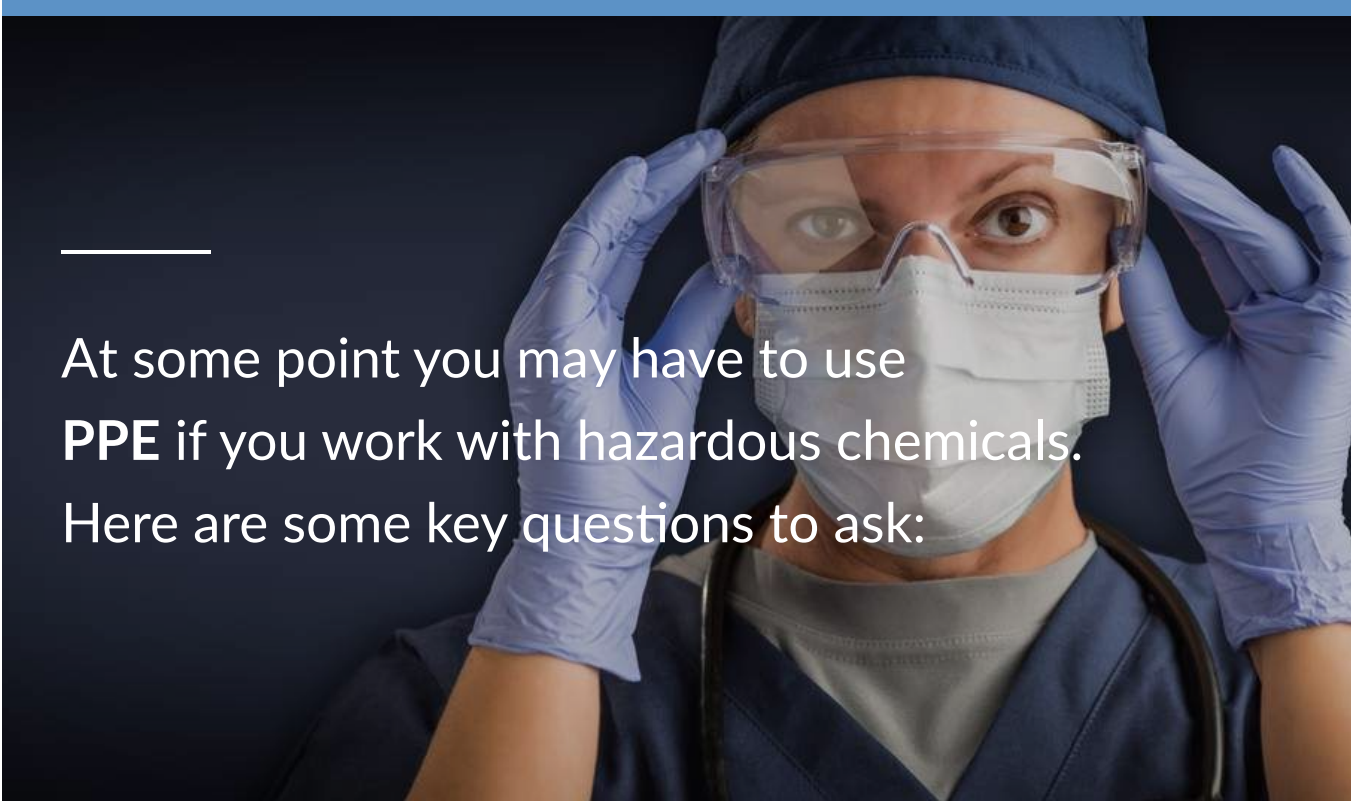
## Skin Contact

Skin exposure is a common way chemicals can enter the body. It happens **when a chemical touches the skin** through spills, splashes, or settles on the skin from the air. This type of exposure can cause redness, itching, swelling, rashes, blisters, tissue damage, or skin cancer.



# Personal Protective Equipment (PPE)

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At some point you may have to use **PPE** if you work with hazardous chemicals. Here are some key questions to ask:

## Who must wear PPE?

Colleagues must wear PPE to help avoid exposure to hazards that may cause serious workplace injuries and illnesses.

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## Who is responsible for providing PPE?

Your ministry is responsible for selecting and providing the right PPE for working with hazardous chemicals. In addition, they must also train you on which PPE to use, and how and when to use it, based on the chemical's safety data sheet.

## What topics should be covered in PPE training?

Trinity Health must provide training that includes:

- When it is necessary
- What kind is necessary
- How to properly put on, adjust, wear, and take it off
- The limitations of PPE
- Proper care, maintenance, useful life, and disposal of PPE

## What types of PPE should be used?

PPE may include, but is not limited to the following:



### **Gloves**

Protects your hands from chemical exposure

Make sure to use the right gloves for the chemical you're handling

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### **Body Protection**

Shields your body from chemical splashes, heat, or contamination

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### **Respirators**

Covers your nose and mouth to help filter the air you breathe

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### **Goggles**

Protects your eyes from chemical splashes and flying particles

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## Face Shields

Covers your entire face to guard against splashes and debris



## Knowledge Check

Check your understanding before you move on.

Who is responsible for providing you with PPE to protect you from exposure to hazardous chemicals?

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- OSHA
- You

- Your employer
- Your local health department

**SUBMIT**



# Know Your Risks at a Glance

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## Labels

Labels are written or printed information found on the container of a dangerous chemical. They include the product name, signal words, and pictograms that show the danger, safety messages, and details about the company that made it. Labels help colleagues quickly understand the risks and how to stay safe when using the chemical on the job.

HazCom compliant labels have **six sections**, as shown in the example below.



Click each number to continue the course.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891

Wear protective gloves.  
Do not breathe vapors.



**Danger!**

May cause liver or kidney damage.  
Highly flammable liquid and vapor.

## Acetone

1

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891

Wear protective gloves.  
Do not breathe vapors.



### Danger!

May cause liver or kidney damage.  
Highly flammable liquid and vapor.

### Product Identifier

Identifies the chemical. This can include the **chemical name**, **code**, or **batch number**.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891

2



## Danger!

Wear protective gloves.  
Do not breathe vapors.

May cause liver or kidney damage.  
Highly flammable liquid and vapor.


### Supplier Identification

The **name**, **address**, and **phone number** of the chemical's manufacturer.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891



Wear protective gloves.   
Do not breathe vapors.

## Danger!

May cause liver or kidney damage.  
Highly flammable liquid and vapor.

### Precautionary Statements

Provides guidance on preventing or reducing harm from exposure.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891

Wear protective gloves.  
Do not breathe vapors.



**Danger!**

May cause liver or kidney damage.  
Highly flammable liquid and vapor.

### Hazard Pictograms

Symbols that warn about the specific chemical hazard. Labels can have more than one pictogram.

You will learn more about pictograms in the next section.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891

Wear protective gloves.  
Do not breathe vapors.



5

**Danger!**

May cause liver or kidney damage.  
Highly flammable liquid and vapor.

### Signal Word

Indicates how serious the chemical hazard is. The signal word will be either "**Danger**" for severe hazards or "**Warning**" for less severe hazards.

## Acetone

Sigma-Aldrich Inc.  
3050 SPRUCE ST  
St. Louis Mo 63103  
United States  
563-555-4891



**Danger!**

Wear protective gloves.  
Do not breathe vapors.

**6** May cause liver or kidney damage.  
Highly flammable liquid and vapor.

### Hazard Statements

Describes the chemical's nature or degree of the hazard.

Source: Occupational Safety and Health Administration. (2024). OSHA QuickCard, Hazard Communication Standard Labels. US Department of Labor.  
<https://www.osha.gov/sites/default/files/publications/OSHA3492QuickCardLabel.pdf>



Click & review each number to continue the course

**Small Container Labeling**



## Small Containers

When chemicals are stored in small containers, it can be difficult to fit all the required label information into the limited space available. Depending on the container's size, OSHA allows for limited label content, as long as certain rules are followed.

### CONTAINERS THAT HOLD 3 ML OR LESS

### CONTAINERS THAT HOLD MORE THAN 3 ML UP TO 100 ML

#### Containers that hold 3 mL or less

No label is required if the chemical manufacturer, importer, or distributor can show that any label would interfere with the normal use of the container.

#### What is required:

- Product identifier
- The chemical's full label information must be on the immediate outer package

- The small container must be stored in the outer package with the complete label when not in use



#### CONTAINERS THAT HOLD 3 ML OR LESS

#### CONTAINERS THAT HOLD MORE THAN 3 ML UP TO 100 ML

#### Containers that hold more than 3 mL up to 100 mL must be labeled with:

- Product identifier
- Pictograms
- Signal word
- Chemical manufacturer's name and phone number
- A statement indicating that the full label information is available on the immediate outer package (including precautionary statements and hazard statements)



## Pictograms

Pictograms are symbols that warn you about the dangers of a chemical.

- There are nine different pictograms
- Each one stands for a type of chemical hazard
- All look similar: a standardized graphic symbol inside a red border on a white background.

One pictogram can stand for several hazards, depending on the chemical.



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**Activity: Can You Guess the Hazard?**

Look at each pictogram and guess what chemical hazard the symbol represents. Then click the card to see the answer. (We've included only **one hazard** per symbol, but most symbols have more than one).

**Note:** You must click all cards to continue the course.



**Name:** Flame Over Circle

**Hazard:** Oxidizers

**Description:** Represents oxidizing chemicals, which can cause or intensify fires.



**Name:** Exploding Bomb

**Hazard:** Explosives

**Description:** Marks substances that are explosive, including self-reactive and organic peroxide chemicals.



**Name:** Flame

**Hazard:** Flammables

**Description:** Identifies substances that can ignite easily under specific conditions.



**Name:** Skull and Crossbones

**Hazard:** Acute Toxicity (fatal or toxic)

**Description:** Indicates substances that can cause severe, immediate harm or death if inhaled, ingested, or absorbed through the skin.



**Name:** Corrosion

**Hazard:** Skin Corrosion/Burns

**Description:** Used for chemicals that can cause severe damage to skin, eyes, or metals.



**Name:** Gas Cylinder

**Hazard:** Gases Under Pressure

**Description:** Designates gases that are stored under pressure in a cylinder, which can explode if heated.



**Name:** Health Hazard

**Hazard:** Carcinogen

**Description:** Indicates substances that can cause serious long-term or chronic health effects, such as cancer, reproductive harm, or damage to specific organs.



**Name:** Environment

**Hazard:** Aquatic Toxicity

**Description:** Refers to chemicals that may cause harm to fish, plants, and other marine life.



**Name:** Exclamation Mark

**Hazard:** Irritant (skin and eye)

**Description:** Used to indicate a variety of health hazards that are generally less severe than those requiring other pictograms.

Source: Occupational Safety and Health Administration. (2024). OSHA QuickCard, Hazard Communication Standard Pictogram. US Department of Labor.  
<https://www.osha.gov/sites/default/files/publications/OSHA3491QuickCardPictogram.pdf>



Click & review all cards above to continue the course



## Knowledge Check

Check your understanding before you move on.

You will be using a chemical that has a pictogram of a **skull and crossbones** on the label. What kind of hazard does the pictogram represent?

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- Skin Corrosion/Burns
- Acute Toxicity (fatal or toxic)
- Flammable
- Gas Under Pressure

**SUBMIT**



# Accessing Safety Data Sheets (SDSs)

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A Safety Data Sheet (SDS) must be on file for every hazardous chemical in the workplace.

If you handle hazardous chemicals, you should have access to both **paper** and **electronic** versions of the SDS.

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At Trinity Health, you can access the electronic version of an SDS.

To access the MSDSonline | eBinder application, double-click the **Safety Data Sheets** icon in the ZENworks window (or in your ministry's application window).

You will learn how to use MSDSonline in the separate course that follows this one.

The screenshot displays the eBinder application interface. At the top, there is a search bar with the text "Search eBinder by" and a dropdown menu set to "All Categories". The search term "ethyl alcohol" is entered in the search field. Below the search bar, there are buttons for "Filters", "Share", and "Export". The results section shows "168 products match (0) selected" with a "Reset Search" link. A table of results is visible, with the first entry being "Ethyl Alcohol, pure" by Sigma-Aldrich Corporation. The table includes columns for "Revision Date" (03/02/2024), "Product CAS #" (64-17-5), and "Date Added" (05/13/2024). A "Select All" checkbox is present at the top left of the results table. A "Sort by" dropdown menu is set to "Last Added (Descending)". A help icon (question mark) is located in the bottom right corner of the application window.

**Safety Data Sheets**

eBinder for All Locations

Search eBinder by

All Categories ethyl alcohol

Filters Share Export

168 products match (0) selected Reset Search

Select All Sort by Last Added (Descending)

Product Name	Revision Date	Product CAS #	Date Added
Ethyl Alcohol, pure Sigma-Aldrich Corporation	03/02/2024	64-17-5	05/13/2024

?

*Click to enlarge*

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# Structure of the SDS

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## 16-Section Format

There are 16 required sections for a chemical's SDS. Review each section of a sample SDS for Glutaraldehyde below:

### Section 1: Identification

The chemical name, how it should be used and any restrictions, along with supplier contact information such as name and address

# SAFETY DATA SHEET

Version 6.14  
Revision Date 03/02/2024  
Print Date 06/15/2024

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Glutaraldehyde solution

Product Number : G5882  
Brand : Sigma-Aldrich

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : This product is not intended for consumer use. The product is being supplied under the TSCA R&D Exemption (40 CFR Section

[Click to enlarge](#)

## Section 2: Hazard(s) Identification

Chemical hazard description and any warning information related to it

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Respiratory sensitization (Category 1), H334

Page 1 of 15

[Click to enlarge](#)

## Section 3: Composition/Information on Ingredients

Substances and mixtures in the chemical, except when this would reveal a trade secret

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**SECTION 3: Composition/information on ingredients****3.2 Mixtures**

Synonyms : Glutaric dialdehyde solution  
Glutaraldehyde  
Pentane-1,5-dial

Molecular weight : 100.12 g/mol

Component	Classification	Concentration
<b>Glutaraldehyde</b>		
CAS-No.	111-30-8	Flam. Liq. 4; Acute Tox. 3; Acute Tox. 2; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1A; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 2; >= 20 - < 30 %
EC-No.	203-856-5	
Index-No.	605-022-00-X	

[Click to enlarge](#)

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**Section 4: First-Aid Measures**

Initial care and first-aid instructions for a person who has been exposed to the chemical, symptoms to look for, and recommendations for any necessary medical treatment

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**SECTION 4: First aid measures****4.1 Description of first-aid measures****General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

Page 3 of 15

[Click to enlarge](#)

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**Section 5: Fire-Fighting Measures**

Recommendations for putting out a chemical fire, the hazards it can cause, and the PPE suggested for those responding to the fire

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Carbon oxides

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Prevent fire extinguishing water from contaminating surface water or the ground water

*Click to enlarge*

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## Section 6: Accidental Release Measures

Appropriate response, containment, and cleanup for leaks, spills, or releases

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

Page 4 of 15

*Click to enlarge*

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## Section 7: Handling and Storage

Guidance on the safe handling and storage of the chemical

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons.

*Click to enlarge*

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**Section 8: Exposure Controls/Personal Protection****Exposure limits and measures to prevent exposure****8.2 Exposure controls****Appropriate engineering controls**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment****Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with

*Click to enlarge*

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**Section 9: Physical and Chemical Properties****Physical and chemical properties of the substance or mixture**

Note: On or before January 20, 2026, the "Appearance" field will be replaced with "Physical State," "Color," and "Particle Characteristics."

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**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Color: colorless
b) Odor	No data available
c) Odor Threshold	No data available
d) pH	2.9 at 100%
e) Melting point/freezing point	-10 °C (14 °F)
f) Initial boiling point	101 °C 214 °F at 1,013 hPa

*Click to enlarge*

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**Section 10: Stability and Reactivity**

Any hazards caused by a chemical reaction

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**SECTION 10: Stability and reactivity****10.1 Reactivity**

No data available

**10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

**10.3 Possibility of hazardous reactions**

Violent reactions possible with:  
The generally known reaction partners of water.

**10.4 Conditions to avoid**

no information available

**10.5 Incompatible materials**

Strong acids, Strong bases, Strong oxidizing agents

**10.6 Hazardous decomposition products**

In the event of fire: see section 5

*Click to enlarge*

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**Section 11: Toxicological Information**

Routes of exposure, health effects after exposure, and indicates if the chemical is a carcinogen

Note: On or before January 20, 2026, new subsections will be added and will cover interactive effects of chemicals and the source of alternative information when specific chemical data is unavailable.

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## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Mixture**

##### **Acute toxicity**

Acute toxicity estimate Oral - 784.33 mg/kg  
(Calculation method)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute toxicity estimate Inhalation - 4 h - 11 mg/l - vapor (Calculation method)

Symptoms: Possible symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract

Acute toxicity estimate Dermal - > 5,000 mg/kg  
(Calculation method)

##### **Skin corrosion/irritation**

Remarks: Mixture causes burns.

[Click to enlarge](#)

---

## **Section 12: Ecological Information (non-mandatory)**

The environmental impact of the chemical if it were released to the environment

### **12.7 Other adverse effects**

No data available

#### **Components**

##### **Glutaraldehyde**

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.8 mg/l - 96 h  
(US-EPA)

Toxicity to algae

static test ErC50 - Desmodesmus subspicatus (green algae) - 0.6 mg/l - 72 h  
(OECD Test Guideline 201)

Toxicity to bacteria

##### **Methanol**

Toxicity to fish

flow-through test LC50 - Lepomis macrochirus (Bluegill) -

[Click to enlarge](#)

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## **Section 13: Disposal Considerations (non-mandatory)**

## Proper disposal, recycling, and safe handling of the chemical and its container

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### **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods**

##### **Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

*Click to enlarge*

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## Section 14: Transport Information (non-mandatory)

Classification information for shipping and transporting of hazardous chemicals by road, air, rail, or sea

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### **SECTION 14: Transport information**

#### **DOT (US)**

UN number: 3265    Class: 8    Packing group: II  
Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Glutaraldehyde)  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

#### **IMDG**

UN number: 3265    Class: 8    Packing group: II    EMS-No: F-A, S-B  
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaraldehyde)  
Marine pollutant : yes

#### **IATA**

UN number: 3265    Class: 8    Packing group: II  
Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Glutaraldehyde)

*Click to enlarge*

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## Section 15: Regulatory Information (non-mandatory)

Identifies safety, health, and environmental regulations for the chemical that is not found anywhere else on the SDS

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**SECTION 15: Regulatory information****SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

CAS No. Revision Date

*Click to enlarge*

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**Section 16: Other Information**

When the SDS was prepared or when the last known revision was made

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**SECTION 16: Other information****Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Source: Occupational Safety and Health Administration. (2012, February). OSHA Brief: Hazard Communication Standard: Safety Data Sheets. United States Department of Labor. <https://www.osha.gov/sites/default/files/publications/OSHA3514.pdf>



# Knowledge Check

Check your understanding before you move on.

You need to work with formaldehyde during an upcoming shift and want to know more about the dangers of using this chemical. In what section of the safety datasheet can you find this information?

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- Identification
- First Aid Measures
- Hazard Identification
- Exposure Controls/Personal Protection

**SUBMIT**



# Putting It In Writing

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## Written Hazard Communication Program

The written Hazard Communication Program is a required workplace plan that explains how Trinity Health will tell colleagues about the dangers of the chemicals they use and how to stay safe. It must include rules for the following:

### How Trinity Health will meet requirements for...

- Labeling containers of chemicals in the workplace.
- Obtaining and distributing of Safety Data Sheets (SDSs) to colleagues.



**A chemical inventory consisting of...** —

- A list of all hazardous chemicals known to be present in the workplace.



**The development and implementation of...** —

- Colleague training programs on chemical hazards and protective measures.



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**With a written Hazard Communication Program in place, your ministry ensures that chemical safety practices are clearly defined and consistently followed.**

**Let's wrap up by reviewing the main topics covered in this course.**



# Wrap-up

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## Course Summary

In this course, you have learned important information on how to protect yourself when working with hazardous chemicals.

These topics were covered in the course:

- OSHA's Hazard Communication Standard (HCS) Requirements
- Chemical Hazards (Health and Physical Risks and Common Hazards)
- Personal Protective Equipment (PPE)
- Reading and Understanding Hazard Labels and Pictograms
- Understanding Safety Data Sheets (SDSs)
- The Written Hazard Communication Program

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## Resources

Occupational Safety and Health Administration. Other Hazards. US Department of Labor.  
<https://www.osha.gov/healthcare/hazards>

Occupational Safety and Health Administration. (2024, May 20). 1910.1200 – Hazard Communication. US Department of Labor. US Department of Labor. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200>

Occupational Safety and Health Administration. Flammable Liquids, 29 CFR 1910.106. US Department of Labor. [https://www.osha.gov/sites/default/files/training-library\\_TrngandMatlsLib\\_FlammableLiquids.pdf](https://www.osha.gov/sites/default/files/training-library_TrngandMatlsLib_FlammableLiquids.pdf)

Occupational Safety and Health Administration. (1998, January 8). 1910.1047 App A - Substance Safety Data Sheet for Ethylene Oxide. US Department of Labor. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1047AppA>

US Centers for Disease Control and Prevention. Occupational Safety and Health Administration. (2011, April). OSHA FactSheet: Formaldehyde. United States Department of Labor. <https://www.osha.gov/sites/default/files/publications/formaldehyde-factsheet.pdf>

The National Institute for Occupational Safety and Health. (2014, June 6). Glutaraldehyde – Occupational Hazards in Hospitals. Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/docs/2001-115/>

Occupational Safety and Health Administration. Personal Protective Equipment. US Department of Labor. <https://www.osha.gov/personal-protective-equipment>

Occupational Safety and Health Administration. (2023). Personal Protective Equipment, 3151-02R 2023. US Department of Labor. <https://www.osha.gov/sites/default/files/publications/osha3151.pdf>

Occupational Safety and Health Administration. (2024). OSHA QuickCard, Hazard Communication Standard Labels. US Department of Labor. <https://www.osha.gov/sites/default/files/publications/OSHA3492QuickCardLabel.pdf>

Occupational Safety and Health Administration. (2024). OSHA QuickCard, Hazard Communication Standard Pictogram. US Department of Labor. <https://www.osha.gov/sites/default/files/publications/OSHA3491QuickCardPictogram.pdf>

Occupational Safety and Health Administration. Hazard Communication Pictograms. United States Department of Labor. <https://www.osha.gov/hazcom/pictograms>

Occupational Safety and Health Administration. (2012, February). OSHA Brief: Hazard Communication Standard: Safety Data Sheets. United States Department of Labor. <https://www.osha.gov/sites/default/files/publications/OSHA3514.pdf>

Occupational Safety and Health Administration. (2013a, February). OSHA fact sheet: December 1st, 2013 training requirements for the revised hazard communication standard. United States Department of Labor. <https://www.osha.gov/sites/default/files/publications/OSHA3642.pdf>

