

Right-to-Know: Hazard Communication

Annual Compliance Education



This course contains annual compliance education necessary to meet compliance and regulatory requirements.

Instructions:

To receive completion credit, do two things:

1. Read each slide in full.
2. Complete the online or paper exam.



Carolinan HealthCare System

Last Revised: 06/22/15

One

Right-to-Know: Hazard Communication

Welcome

Purpose:

The purpose of this course is to introduce you to your Right-to-Know information to protect yourself, our patients and our visitors from contact with hazardous material.

Learning Objectives:

When finished with this course, you should be able to:

- Explain Right-to-Know
- Describe the new Safety Data Sheets (SDS) and where to find instructions about disposing of hazardous materials
- Identify the new pictograms that will be used on warning labels
- Describe how to correctly label a secondary container
- Describe how to respond to a chemical spill



Right-to-Know: Hazard Communication

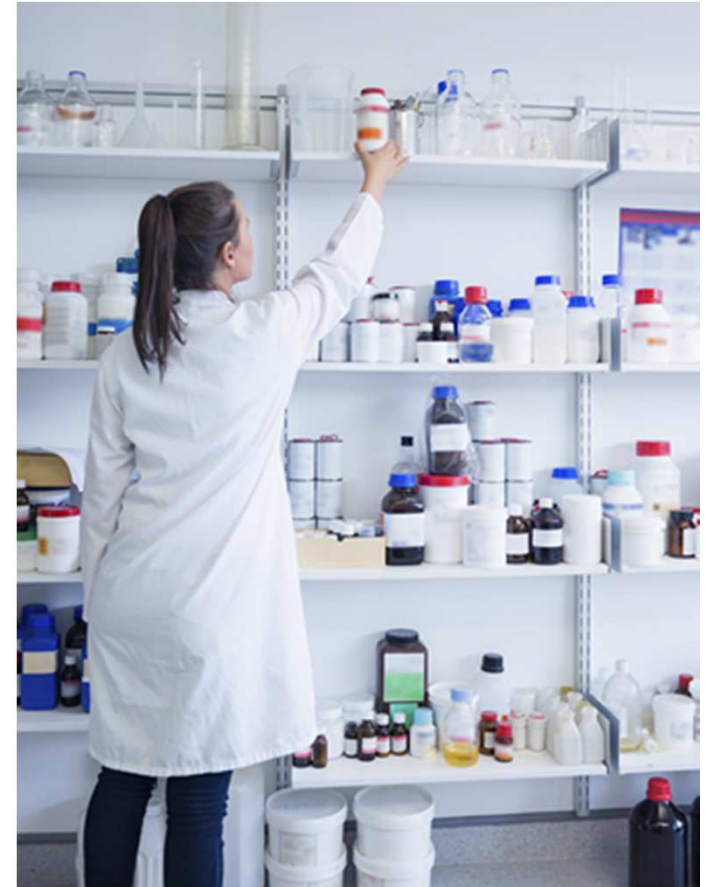
Your Right-To-Know by Law

The **Right-to-Know** is a federal law to protect employees who work with items that may be unsafe or harmful. The law is sometimes called the **HazCom** and is overseen by the Occupational Safety & Health Administration (OSHA).

Right-to-Know, or **HazCom**, is an information system. This system alerts teammates to chemical dangers in the workplace.

Your health and safety depend on your **Right-to-Know** the correct way to handle, store, move and dispose of chemicals.

Knowing may help prevent injuries, serious illness and even death due to explosions, fires or too much contact to chemicals.



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Global Harmonized System

The Global Harmonized System (GHS) is a way of labeling and sharing information about chemicals. This system uses the same method in all countries around the world.



The most recent changes include:

- Different labels and symbols on containers
- Safety Data Sheet (SDS) replacing the older Material Safety Data Sheet (MSDS)



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Hazard Communication Program

The Right-to-Know/HazCom program includes:

- Education on proper handling, use, storage, moving and disposal
- Yearly refresher education
- Education about new chemicals
- Departmental chemical supplies
- Safety Data Sheets (SDSs) for each hazardous chemical in your work area
- Actions to take and needed supplies for hazardous material emergencies and spills
- Personal Protective Equipment (PPE) and safety when using chemicals



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Your Responsibility

Your health and safety depend on knowing the correct way to handle, store, move and dispose of chemicals.

- **Know** the chemicals used in your work area
- **Read** important information on all chemical labels, SDS and educational materials. These are provided during new teammate orientation, department/job specific education and yearly refresher and update education sessions (including this course).
- **Ask** your leader or Safety Officer if you do not understand any part of the Right-to-Know/HazCom program



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Safety Data Sheets (SDS)

Starting June 1, 2015, manufacturers must make SDSs in the same design.

Carolinas HealthCare System uses an online system to manage SDSs. Access to SDSs can be found on the Corporate Safety webpage on PeopleConnect.

An SDS is good, as long as all of the following remain the same:

- Chemical name
- Chemical makeup
- Manufacturer
- Possible dangers related to the chemical

The SDS is the new term used in the law. The old term MSDS is no longer used.



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SDS Design Requirements

All SDSs have the same design. This design includes section numbers, headings and information.

1. Product and Company Identification

- The product identifier
- Manufacturer’s or distributor’s name, address, phone number and emergency phone number
- Recommended use
- Restrictions on use

2. Hazards Identification

- Hazards regarding the chemical
- Required label elements

SAFETY DATA SHEET
Version 5.4
Revision Date 09/12/2014
Print Date 12/02/2014

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product Name : Isopropyl alcohol
Product Number : 10030
Brand : Sigma-Aldrich
Index-No. : 603-117-00-0
CAS-No. : 67-63-0

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910.1201 (OSHA 309)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)
H225 : Highly flammable liquid and vapour.
H319 : Causes serious eye irritation.
H336 : May cause drowsiness or dizziness.

Precautionary statement(s)
P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 : Keep container tightly closed.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ventilating/lighting/ equipment.
P242 : Use only non-sparking tools.
P243 : Take precautionary measures against static discharge.
P261 : Avoid breathing dust/fume/gas/mist/vapours/spray.

Sigma-Aldrich - 10030

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SDS Design Requirements (continued)

3. Composition/Information on Ingredients

- Information about the chemical ingredients
- Trade secret claims (valuable information such as a formula)

4. First Aid Measures

- Symptoms/effects to watch for, both acute and delayed
- Required treatment

5. Firefighting Measures

- Correct ways to put out a fire and equipment to use
- Chemical dangers from fire

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₂H₆O
Molecular Weight : 60.10 g/mol
CAS-No. : 67-63-0
EC-No. : 200-561-7
Index-No. : 603-117-00-0
Registration number : 01-2119457568-25-XXXX

| Component | Classification | Concentration |
|------------|--|---------------|
| 2-Propanol | Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, X334 | - |

4. FIRST AID MEASURES

- 4.1 Description of first aid measures:**
General advice:
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled:
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact:
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact:
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed:
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- 4.2 Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**
Suitable extinguishing media:
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**
Carbon oxides
- 5.3 Advice for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.
- 5.4 Further information**
Use water spray to cool unopened containers.
- Digma-Kleber - 19230



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SDS Design Requirements (continued)

6. Accidental Release Measures

- Emergency actions/steps
- Protective equipment
- Proper methods of control and cleanup

7. Handling and Storage

- Precautions for safe handling and storage, including any chemicals that cannot be stored together

8. Exposure Control/Personal Protection

- OSHA's Permissible Exposure Limits (PELs) *
- Threshold Limit Values (TLVs)*
- Correct control of contact
- Personal Protective Equipment (PPE)

*PELs and TLVs give guidance on hazardous exposure levels

6. ACCIDENTAL RELEASE MEASURES

Use personal protection equipment, such as breathing apparatus, hood or gas cylinder, adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors may accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

Flash back possible over considerable distance. Container explosion may occur under fire conditions. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Handle under nitrogen, protect from moisture. Store under nitrogen. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and store under inert gas. Hygroscopic.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROL/PESONAL PROTECTION

| Component | CAS-No. | Value | Control parameters | Basis |
|------------|---------|---|--------------------|--|
| 2-Propanol | 67-63-0 | TWA | 200 ppm | USA, ACGIH Threshold Limit Values (TLV) |
| | Remarks | Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen | | |
| | STEL | 400 ppm | | USA, ACGIH Threshold Limit Values (TLV) |
| | | Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen | | |
| | TWA | 400 ppm 980 mg/m ³ | | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | STEL | 500 ppm 1,225 mg/m ³ | | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | TWA | 400 ppm 980 mg/m ³ | | USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |

Digna-Adtech - 19030

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SDS Design Requirements (continued)

9. Physical and Chemical Properties

- Physical appearance, such as color and odor
- Chemical characteristics

10. Stability and Reactivity

- How stable the chemical is and the possibility of hazardous reactions

11. Toxicological Information

- Routes of exposure
- Symptoms, acute and chronic
- Numerical measures of poison

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--|
| a) Appearance | Form: liquid Colour: colorless |
| b) Odour | odorless |
| c) Odour Threshold | No data available |
| d) pH | no data available |
| e) Melting point/freezing point | Melting point/range: -89.5 °C (-129.1 °F) - lit. |
| f) Initial boiling point and boiling range | 82 °C (180 °F) - lit. |
| g) Flash point | 12.0 °C (53.6 °F) - closed cup |
| h) Evaporation rate | 3.0 |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 12.7 % (V) Lower explosion limit: 2 % (V) |
| k) Vapour pressure | 43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F) 58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F) |
| l) Vapour density | no data available |
| m) Relative density | 0.785 g/cm ³ at 25 °C (77 °F) |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| 10.1 Reactivity | no data available |
| 10.2 Chemical stability | May form peroxides of unknown stability. Stable under recommended storage conditions. Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year. |
| 10.3 Possibility of hazardous reactions | Vapours may form explosive mixture with air. |
| 10.4 Conditions to avoid | Heat, flames and sparks. Extremes of temperature and direct sunlight. |
| 10.5 Incompatible materials | Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids |
| 10.6 Hazardous decomposition products | |

11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| 11.1 Information on toxicological effects | |
| Acute toxicity | LD50 (oral) - rat - 6,340 mg/kg |
| Remarks: | Behavioral-related sleep time (including strange in righting reflex), Behavioral Somnolence (general depressed activity). |
| LC50 Inhalation - rat - 8 h - | 19,000 ppm |
| LC50 Dermal - rabbit - | 12,800 mg/kg |

Sigma-Aldrich - 0630

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SDS Design Requirements (continued)

The SDS also has information for other federal government agencies (not OSHA enforced).

12. Ecological Information

- Environmental Information

13. Disposal Considerations

- Things to consider when disposing of a chemical

14. Transport Information

- Information about moving a chemical

15. Regulatory Information

16. Other Information



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Chemical Warning Labels

Containers have new and different labels.

All labels will have a standard format that includes:

- Product Identifier
- Supplier Identification
- Precautionary Statements
- Hazard Pictograms
- Signal Word (Warning or Danger)
- Hazard and Precautionary Statements
- Supplemental Information

SAMPLE LABEL

| | |
|--|--|
| <p>CODE _____ } Product Identifier Product Name _____ }</p> <p>Company Name _____ } Supplier Identification Street Address _____ } City _____ State _____ } Postal Code _____ Country _____ } Emergency Phone Number _____ }</p> | <p style="text-align: center;">Hazard Pictograms</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;">Signal Word Danger</p> <p style="text-align: center;">Highly flammable liquid and vapor. May cause liver and kidney damage. } Hazard Statements</p> <p style="text-align: center;">Precautionary Statements</p> <p style="text-align: center;">Supplemental Information</p> <p style="text-align: center;">Directions for Use</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Fill weight: _____ Lot Number: _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____</p> |
| <p>Keep container tightly closed. Store in a cool, well-ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking. Only use non-sparking tools. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.</p> <p>In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO₂) fire extinguisher to extinguish.</p> <p>First Aid If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.</p> | |












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Hazard Pictograms

All labels must have hazard pictograms starting June 1, 2015. Each pictogram will:

- Have a symbol on a white background framed by a red border
- Stand for a different hazards

| | | | | |
|---|---|---|---|--|
| <p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity | <p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides | <p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory) | <p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure | <p>Corrosion</p>  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals |
| <p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides | <p>Flame Over Circle</p>  <ul style="list-style-type: none"> • Oxidizers | <p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity | <p>Skull and Crossbones</p>  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic) | |



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Secondary Containers

A “secondary container” is created when you pour a chemical from an original container into another container.

You must label the secondary container with:

- The chemical identity
- Hazard warnings, such as:
 - Flammable (easily catches fire)
 - Corrosive (acid like)
 - Causes lung damage

Where are the labels?



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Torn or Missing Labels



The most dangerous chemical is one without a label.

If you find a container with a torn or missing label:

- Do not handle it. Never handle a chemical unless you know what it is.
- Immediately tell your leader



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Storing and Moving Chemicals

If chemicals are not stored correctly, they can react. The reaction could form a dangerous product. When moving chemicals, take care to avoid or control any spills.

- Inspect storage areas for proper labeling and conditions
- Properly dispose of expired chemicals or chemicals that are no longer needed
- Do not store chemicals above eye level
- Do not store chemicals on bench tops or under hoods (the only exception is temporary storage for working chemicals or solutions)
- Keep chemical storage areas neat, orderly and clearly identified
- Use secondary containers, such as plastic bottle carriers, to move glass containers of chemicals
- Use a bottle carrier when moving more than 500 mL of a flammable (easily catches fire) or corrosive (acid like) liquid
- Never move or store chemicals that cannot go together in the same secondary containment or in any way that might allow the chemicals to combine or react
- Seal containers correctly
- Wear the right Personal Protective Equipment (PPE) when handling chemicals



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Mercury

Carolinas HealthCare System (CHS) is committed to becoming mercury-free. Most work areas should not have liquid mercury items. If your department must use a liquid mercury item, then you **MUST** have a mercury spill kit.

You may get a mercury spill kit from your facility's Distribution Center.



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Acids and Bases



Never use water to clean up an acid or base spill!

Acids and bases may react violently with water.

When cleaning up spills involving acids and bases:

- Never use water
- Use a neutralizing solution

Departments using acids and bases must have neutralizing solutions available for spills. Teammates in these departments must be educated in how to clean up and what to use for spills. Corporate Safety is available to assist with review of department steps about how to handle spills.



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Flammable Items (Can Easily Catch Fire)

Flammable items must be handled carefully. Vapors (gas) can catch fire from a spark.

If you come upon a flammable item spill, you should:

- Surround and absorb the spilled chemical with a material, such as kitty litter or other absorbent
 - Place used materials in an appropriate hazardous waste container
 - Label as “hazardous waste” and write down the contents
 - Contact your leader or Safety Officer to arrange for proper disposal
-



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Asbestos

Asbestos is a group of natural mineral fibers. Asbestos was used in the past in construction products. Examples of things that may have asbestos are pipe insulation, spray applied ceilings, fireproofing, roofing materials and floor tile. These items are not a health risk unless disturbed in a way that creates dust or fibers.

Buildings constructed after 1981 probably do not contain asbestos. However, asbestos surveys are required on any building before renovation can occur.

CHS is committed to safely managing asbestos on our property. Facility Operations and Maintenance Plans include survey data and drawings. The Plans also include steps for managing asbestos. This document is available for your review. If you have questions about asbestos, contact Corporate Safety at 704-512-7283.



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Ethylene Oxide

Hazardous materials may also come in the form of gas. An example of a hazardous gas is Ethylene Oxide (ETO). Some facilities use ETO to sterilize equipment that cannot be steam sterilized. This gas has no color or smell, even when it is at dangerous levels. Facilities that use ETO must have an ETO alarm.



If the ETO alarm goes off, teammates are to follow emergency steps in their department's ETO Emergency Action Plan. Teammates who work with ETO must review and understand the plan every year.



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Responding to a Chemical/Hazardous Material Spill

Read and understand your department spill clean up procedures BEFORE an emergency occurs!

If a spill occurs, the material must be cleaned up properly. One source of information for spill cleanup steps is the SDS. The SDS will guide you on what to do for different kinds of spills.

For a chemical spill:

- Notify your leader immediately
- Follow department instructions, when available
- Clean up the spill yourself **only if you have proper education and Personal Protective Equipment (PPE)**



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Responding to a Chemical/Hazardous Material Spill (continued)

If the spill is too large, very dangerous or the identity of the spilled item is unknown:

- Contact your leader or designee immediately (as you would do with any spill)
- Follow your location's disaster plan for a Hazardous Material Release
- Contact the Corporate Administrator
- **Do not contact the EVS or housekeeping services to perform chemical/hazardous material spill cleanup**

NOTE: Facilities do NOT have spill response teams. Carolinas HealthCare System will call an emergency spill response contractor if needed.



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Personal Protective Equipment Hazard Assessment

Leaders must complete hazard assessments (review) for jobs or tasks with possible dangers. Part of this review is to decide on any needed personal protective equipment (PPE) for teammates.

PPE Hazard Assessments and education must be documented. This information can be documented using the PPE Hazard Assessment form found in CHS 2.11 – Personal Protective Equipment.

If you need help with PPE selection or you experience problems with the PPE provided, contact your leader or Corporate Safety.



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Disposal of Hazardous Wastes

For questions about disposal of a hazardous material, consult:

- The *CHS Waste Disposal Guide*, available on PeopleConnect
- Safety Data Sheets (SDS)
- Your leader
- The Hazardous Materials Coordinator, Safety Officer or Corporate Safety



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Summary

You have the **Right-to-Know** if the items you work with may be unsafe or harmful to you. Learn about the chemicals used in your area. Read the information that is available to you about those chemicals. Ask your leader or Safety Officer if you have any doubts or questions.

The following was covered in this course:

- Identify the chemicals used in your work area. Learn more about them.
- Read and follow warnings on chemical labels
- Review educational materials and SDS information for a better understanding of the chemicals you work with in your area
- Label secondary containers correctly. Report chemicals that are not labeled to your leader.
- Follow correct steps for storage, moving and disposal of chemicals
- Participate in spill cleanup only if you have the right education and Personal Protective Equipment (PPE)

