
Chemical Lab Safety Rules Assessment

Instructor Guide

Note to the Instructor:

This assessment is an assessment and Observation Checklist for *Chemical Lab Safety Rules*. The assessment consists of 20 safety questions. The checklist consists of 20 observations and a four-scale rating for each.

This assessment is the third unit of the Chemical Lab Safety Rules Learning Module.

- Chemical Lab Safety Rules Primary Knowledge
- Chemical Lab Safety Rules Activity
- **Chemical Lab Safety Rules Assessment**

This assessment is used to ensure that the participants do know and understand the safety rules for working in an environment that has hazardous materials. It is suggested that before entering a lab or manufacturing facility that the participant score at least an 80% on this assessment.

The true assessment is the application of the safety rules once in the facility. Therefore, this assessment also provides an *Observation Checklist* (separate file) to be used by the instructor / supervisor to ensure that the learner is applying the rules effectively. For each safety rule, the participant is rated on how and how often they apply it.

For more safety learning modules and educational materials related to microtechnologies, please visit the SCME website (scme-nm.org.)

Description

This assessment is an assessment for *Chemical Lab Safety Rules*. The assessment consists of 20 safety questions related to proper execution of safety practices in a chemical laboratory or facility. However, the true test is the proper implementation of these rules while working in a laboratory. At the end of the questions, is a list of practices that an instructor or supervisor may rate you on through observation. Study this list and make sure that you understand the proper safety practice associated with each item.

Below are 20 assessment questions. Answer each question relative to one's behavior in a facility that uses chemicals. (Answers marked in red)

1. Which of the following behaviors is NOT allowed in a facility that uses chemicals?
 - a. **Chewing gum**
 - b. Writing in a notebook
 - c. Using a phone
 - d. Working with a friend

2. _____ should be worn AT ALL TIMES when in the facility.
 - a. Shoe covers
 - b. Chemical gloves
 - c. **Safety Glasses**
 - d. Lab coat

3. What is "working within sight and hearing of at least one other person who is familiar with the kind of work you are doing?" _____

Answer

This is the buddy system and should always be used when working around hazardous materials.

4. Which of the following is NOT necessary when you first enter a new lab environment?
 - a. Locate the emergency exits
 - b. Study the evacuation plan
 - c. Locate safety shower, eye wash and first aid kits
 - d. **Identify all chemicals in the lab**

5. What is the purpose of a safety shower?
 - a. To take a shower after running
 - b. **To remove chemicals from a person's body**
 - c. To rinse out chemical bottles
 - d. To clean acid gear after use

6. Which of the following should NOT be worn when working with chemicals?
 - a. Shorts sleeve shirt
 - b. Long pants
 - c. **Contact lenses**
 - d. Make-up

7. What is your best source for information about a chemical?
- Immediate Supervisor
 - Chemical's label
 - Safety Data Sheet**
 - Chemical Engineer
8. What is the proper procedure for carrying bottles of chemicals?
- Support from the bottom as well as from the neck**
 - Hold the sides of the bottle with both hands
 - With you hand around the neck, hold securely against your body
 - A or C are both acceptable
9. Which of the following statements is NOT TRUE.
- Working with corrosives requires a face shield, chemical resistant apron, and appropriate chemical gloves.
 - It is O.K. to walk with an open chemical container as long as it is not more than 75% full and is carried properly.**
 - NEVER pour excess chemicals back into the stock bottle.
 - Pour ONLY corrosive chemicals in the corrosive waste drain.
10. Scenario: You smell chemicals and you notice that the acid bench exhaust is not working. What do you do?
- Try to fix it.
 - Finish what you are working on then inform everyone else and leave the facility.
 - Inform everyone in the facility that the exhaust is not working and exit the facility.**
 - Quit working and leave the facility immediately.
11. Which of the following is NOT required before pouring a chemical into a secondary container?
- Check the surroundings for ignition sources or obstructions.
 - Aspirate the chemical from the original bottle.**
 - Put on the proper PPE.
 - Check to make sure the exhaust is working at the pouring station.
12. For all chemicals, twist the bottle cap off _____. (*Answer: Slowly*)
13. What is the proper method for diluting an acid?
- Acids should never be diluted with water
 - Always add water to acid
 - Always add acid to water**
 - It does not matter which is added first

14. Before heating a flammable, always know the chemical's _____. (One can refer to the SDS)

Answer: Flashpoint

15. Which of the following statements is TRUE?
- Adjust the ventilation sash if bench is not exhausting properly
 - A chemical can be set on a hot plate as long as the plate is off and cold.
 - Solvents and corrosives are stored in the same cabinet
 - Never mix corrosives and solvents.**
16. When storing chemicals, which of the following statements is NOT true.
- Chemicals should never be stored in the same cabinets as food or drink.
 - Chemicals should be properly marked before returning them to storage.
 - Solvents and corrosives can be stored in the same cabinet, but must be on different shelves.**
 - Chemical storage cabinets should ALWAYS be properly marked.
17. Which of the following chemical can NOT be poured at a caustic bench?
- Solvents
 - Acids**
 - Flammables
 - Water
18. Which of the following statements is NOT TRUE?
- NEVER touch a common item such as a door handle or phone when wearing acid gloves.
 - Horseplay is allowed as long as it is controlled and does not endanger anyone.**
 - There are different waste receptacles for each type of waste in a chemical lab (corrosives, solvents, sharps, common waste).
 - When the fire alarm goes off, get you and your buddy out of the facility and don't wait for instructions.
19. A CO₂ Suppression System is designed to deplete the environment of _____ when it is set off. **Answer: Oxygen**
20. Scenario: You arrive at your station and you see a clear liquid puddle on the floor. How should you respond?
- Avoid the spill and start work.
 - Check the spill with a pH strip and notify facility's management.**
 - Check the pH and clean it up if it shows neutral.
 - Clean up the spill assuming it's water.

Chemical Lab Safety Rules Checklist Items

Description

Score the individual on how they apply each of the following safety rules.

- Demonstrates an attitude of "safety first".
- Uses the buddy system when working with chemicals.
- Reads the label and MSDS before working with a specific chemical.
- Executes the proper procedures for accidents and emergencies.
- Applies the basic rules for working with chemicals (never touches exposed skin, doesn't eat or chew gum, etc.).
- Checks the exhaust and for heat sources or obstructions before working with a chemical.
- Wears the proper PPE when working with chemicals.
- Properly transfers chemicals from one place to another.
- Applies all the safety rules when pouring a chemical.
- Follows the rules for correctly mixing chemicals or chemicals with water.
- Disposes of contaminated material in the proper containers.
- Disposes of chemicals in the proper drains.
- Stores chemicals in their proper locations.
- Never attempts to clean up a spill before notifying the instructor / supervisor.
- Always cleans the tools and station properly after use.
- Knows how to respond to an emergency situation.
- Only performs tasks on which s/he has been trained.
- Follows the evacuation procedure for a fire alarm.
- Applies the rules for maintaining OSHA compliance.
- Works with others to ensure a safe environment.

Name:				
Procedure: Chemical Lab Safety Rules				
	0 = never 1 = sometimes 2 = mostly 3 = always			
1. Demonstrates an attitude of "safety first".	0	1	2	3
2. Uses the buddy system when working with chemicals.	0	1	2	3
3. Reads the label and MSDS before working with a specific chemical.	0	1	2	3
4. Executes the proper procedures for accidents and emergencies.	0	1	2	3
5. Applies the basic rules for working with chemicals (never touches exposed skin, doesn't eat or chew gum, etc.).	0	1	2	3
6. Checks the exhaust and for heat sources or obstructions before working with a chemical.	0	1	2	3
7. Wears the proper PPE when working with chemicals.	0	1	2	3
8. Properly transfers chemical from one place to another.	0	1	2	3
9. Applies all the safety rules when pouring a chemical.	0	1	2	3
10. Follows the rules for correctly mixing chemicals or chemicals with water.	0	1	2	3
11. Disposes of contaminated material in the proper containers.	0	1	2	3
12. Disposes of chemicals in the proper drains.	0	1	2	3
13. Stores chemicals in their proper locations.	0	1	2	3
14. Never attempts to clean up a spill				

before notifying the instructor / supervisor\	0	1	2	3
15. Always cleans the tools and station properly after use.	0	1	2	3
16. Knows how to respond to an emergency situation.	0	1	2	3
17. Only performs tasks on which s/he has been trained.	0	1	2	3
18. Follows the evacuation procedure for a fire alarm.	0	1	2	3
19. Applies the rules for maintaining OSHA compliance.	0	1	2	3
20. Works with others to ensure a safe environment.	0	1	2	3

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