



Jordanian Accreditation System
نظام الاعتماد الأردني
Accreditation Unit

SAFETY POLICY IN TESTING LABORATORIES

Purpose

The purpose of this **JAS-AU** policy is:

- To ensure that lab workers in testing laboratories are informed about hazards in their workplace.
- To protect the lab workers in testing laboratories from potential health hazards.
- To establish safe work practices in testing laboratories.

Scope

This policy addresses general safety & health requirements for work in the laboratories performing various testing.

Authorship

This publication has been written by the technical committee, and approved by the accreditation director.

Official language

The text may be translated into other languages as required. The English language version remains the definitive version.

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Further information

This policy is mandatory for laboratories, and shall be implemented within four months from its issuance date. For further information about this publication, kindly contact **JAS-AU**.

This document is also available at our website where you can update directly.

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1. Introduction

It is essential that all users of laboratories be knowledgeable of basic safety principles. This is most important for your own health and safety. This policy provides guidelines for safety in general. Some items will not apply specifically.

2. Important items to address

Take time to look at your lab/working area to see that things are in proper order and the workplace is safe. Check yourself on these items:

1. Do you have the proper training to perform the tasks?
2. Do you know where fire extinguishers, emergency stop buttons, emergency contact phone numbers, and personal protective equipment are located?
3. Are there maintenance and inspection procedures for critical equipment and materials?
4. Is the work area clean and litter free?
5. Are all containers labeled?
6. Is there a list on the outside of the door showing what potential hazards are in the lab (high voltage, chemicals, lasers, etc.) and who to contact in case of an emergency?
7. Are there procedures for you to follow in case of an emergency, fire, or injury?
8. Is the area secure so that people cannot just wander in and potentially get hurt?
9. Are there proper guards on power equipment? **Are there warning signs against potential hazards? Illustrations on quick first aid where necessary?**

Get additional information and training from your health and safety department. All employees who use hazardous and toxic chemicals, chemical products, or generate hazardous waste **MUST** receive this training.

Perform an annual safety inspection of your area. Follow the general checklist in Figure 1.

3. Safety Basics

A hazard is any activity or situation with the potential of harming people, equipment, or the environment. Safety involves the two-step process of:

1. Hazard recognition
2. Hazard elimination or avoidance

Thus the first goal of safety is to keep an accident from happening and minimize the resulting damage. The second goal is to be trained and equipped to respond to an accident in such a manner as to minimize the damage.

Armed with these two goals, anyone with reasonable intelligence can figure out what to do to operate safely. Stand in front of your assigned task and ask three questions:

1. What could go wrong with this equipment that might harm people, equipment, or the environment?
2. What can I do to prevent this from happening?
3. If it does happen, what actions should be taken to minimize the resulting damage?

3.1 Hazard Recognition

Hazards can be classified into various categories or types of threats:

- a) Kinematic hazards
- b) Energy hazards
- c) Electrical/chemical/nuclear hazards
- d) Human factors hazards
- e) Misuse and abuse hazards
- f) Environmental hazards

And the magnitude of these threats can be evaluated based on:

- a) Magnitude of the danger severity
- b) Length of exposure
- c) Short or long term effects
- d) Frequency of occurrence
- e) Environmental impact

3.2 Hazard elimination and avoidance

Hazard elimination and avoidance involves reducing the probability of occurrence or the severity of an accident. The most four common methods for hazard avoidance are:

- a) Modify
- b) Guard
- c) Warn
- d) Train

4. Accident Response

The severity of an accident is greatly reduced when:

- a. Personnel are trained and drilled in safety procedures such as CPR, first aid, firefighting, and chemical spill cleanup.
- b. Equipment for response to accidents is readily available, appropriate, and properly maintained.

PPE (Personnel Protective Equipment) such that: Fire extinguishers, stretchers, first aid kits, eye washes, showers, chemical spill cleanup kits, emergency communication systems, backup power and light systems, alarm stations, and a host of other facilities must be provided within easy access of workers. These are checked regularly.

Emergency training and practice drills are also commonplace and required by law in many instances. You will be put through such training programs wherever you work.

- In brief, the laboratory management is responsible to inform, and to ensure that the lab workers apply this policy, as well as, to provide the laboratories with the safety equipment, requirements, and guidelines.
- The lab shall enforce a clear procedure to to:
 1. Identify hazards
 2. Evaluate risks
 3. Determine, implement and evaluate appropriate and necessary measures (controls)

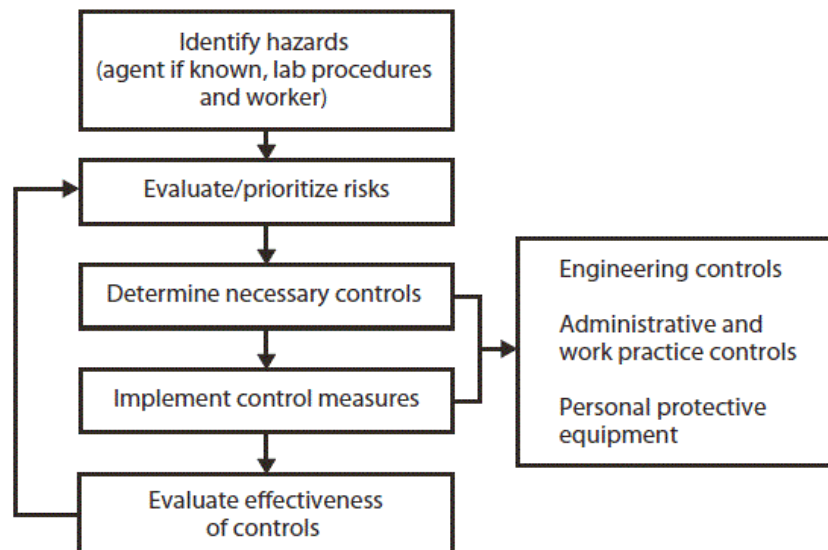


Figure 1

- The lab workers are responsible to follow and apply this policy for their safety.

5. Responsibilities:

Basic Responsibilities

- Employer:
 - Insure Health and Safety of Workers
 - Workers Aware of Responsibilities and Duties
 - Identify hazards at the work place
- Worker
 - Insure Health and Safety of Self and Co-workers

- Co-operate with Employer to Protect Health and Safety

6. General guidelines strictly to be followed

- Use personal protective equipment (PPE) as required. You can use the chemical's safety data sheet, label and/or manufacturer's instructions to identify the required level of PPE and hygiene practices needed for your activity.
- Restrict laboratory access to authorized persons only.
- Absolutely no food, drinks, chewing gum, or smoking is allowed in the laboratory.
- Do not store food in areas where chemicals are stored.
- Don't wear sandals or open shoes, wear safety lab shoes.
- Long hair must be tied back.
- Keep your head scarf under your lab coat.
- Never touch your face, mouth or eyes while working on tests.
- Never put anything in your mouth, such as pencils, pens, labels, or fingers.
- Keep working under chemical fume hoods to reduce exposure to hazards.
- Remove your gloves before using instruments, telephone, and cell phones.
- Laboratory coats must be kept fastened. Avoid loose fitting items of clothing.
- If you have an allergy to lab materials or suffer from, a medical condition which may affect you in the laboratory (e.g. diabetes or epilepsy), ensure that your supervisor knows.
- Cover any cuts on your hands with a bandage. Gloves may be worn as extra protection.
- Wash your hands frequently throughout the day, after using chemicals, and before eating and leaving the lab.
- Never smell or taste a chemical or substance for identification purposes.
- Always use hazardous chemicals as intended.
- Do not wear lab coats, gloves, or other personal protective clothing outside of lab areas.
- Don't wear Jewelry (bracelets, rings, necklaces, ear rings) and ties when working in the lab
- Cell phones and use of music headphones should be avoided while working in the lab.
- Have a separate, labeled containers for broken glass, for each different type of hazardous chemical waste, for metal trash and general trash.
- Avoid working alone in the lab. If you must work alone, make someone aware of your location.
- Know all emergency procedures and equipment.
- Keep work areas as neat and clean as possible.
- Avoid storing heavy containers above shoulder level.
- Avoid storing chemicals in fume hoods or on counter tops.
- Avoid storing chemicals near sources of heat or in direct sunshine.
- Store concentrated acids and bases separately.
- Keep your workspace free of all unnecessary materials. Backpacks, purses, and coats should be placed in the cupboard by the front door of the lab.
- Label everything clearly.
- Be careful when lifting heavy objects and ask for assistance

- Avoid using extension cords whenever possible. Extension cords should not go under doors, across aisles, be hung from the ceiling, or plugged into other extension cords.
- Check and inspect the grounding system in your lab regularly.

7. Safety Rules to Avoid Physical Hazards

- Always keep floors clean and dry.
- Keep corridors and passageway clear with no obstruction across.
- Ensure that spills are reported and cleaned up immediately.
- Close cabinet doors and drawers to prevent accidental fall down.
- Keep cutting tools sharp. They are less likely to cause an accident than dull ones.
- Keep your fingers away from the beaters and blades in appliances.
- Use knives and other tools only for their intended purposes.
- Sweep up broken glass immediately; use a dustpan and brush, not your hand, to pick up broken glass.
- Don't leave sharp knives and other sharp objects in a sink full of water.
- Use appropriate tools to handle hot objects
- Keep electrical cords away from water and hot objects.
- Before using an electrical appliance, make sure your hands are dry and that you are standing on a dry surface.
- Never leave heat sources unattended.
- Locate the main power supply panel to be turned off in case of an emergency and maintain an unobstructed access to it. Or Maintain unobstructed access to all exits, fire extinguishers, electrical panels, emergency showers, and eye washes.
- Maintain a comfortable temperature, humidity, and air movements for the worker in the laboratory, taking into consideration the requirements of the test procedure.

8. Equipment:

1- Laboratory Equipment:

- Never use any laboratory equipment unless you are trained & have been authorized to do so.
- Always keep instruction manuals for each equipment accessible to every authorized person as some equipment need special handling.
- Ensure that installation, modification, and repairs of analytical equipment are carried out by authorized maintenance engineers.
- When using knives, cut/slice away from your body so. Also, if you need to let someone else use a knife, hand it to him by the handle, not the blade.
- Unplug electric appliances before cleaning them. Do not immerse them in water for cleaning. Some parts may be taken out to be cleaned with other glassware, but you should wipe down these parts with a damp cloth.

- Never use gas cylinders without formal training, store them externally and well fitted. Use a cylinder trolley to move gas cylinders, check all connections of the gas cylinder using soap solution.
- Never use glassware under pressure or vacuum unless it is designed for the job and suitably shielded.
- Use heat- resistant glassware for the preparation of solutions that generate heat (e.g., not bottles or graduated cylinder).
- Don't put dirty glassware back in with clean glassware.
- Check the right fuse is used on your electrical instrument's.

2- Safety Equipment:

- Laboratories must be equipped at least with the following (depending on the nature of tests carried out in the lab): Fume hoods, biological safety cabinets, eyewash units, emergency showers, first aid kits, flammable storage cabinets, **smoke detectors, heat detectors, suitable fire fighting system**, fire extinguishers, and emergency electrical generators.
- Carry out periodical inspection of the conditions of emergency equipment.
- Do not block access to emergency exit Keep the floor area around them free and clear of all obstructions.
- All lab workers must locate and know how to use and operate emergency equipment.
- All lab workers must familiarize themselves with the content of first aid kit and how to use them.
- Keep instructions readily available for using of emergency equipment.
- Assign and train some of lab workers on first aid principles.

3- General Tidiness

- Keep your workplace tidy. A tidy laboratory avoids accidents to everyone.
- Decontaminate any equipment or work areas that may have been in contact with hazardous materials.
- Clean up waste, deal with washing up and put things away as you finish.
- Leave behind protective clothing when leaving the lab.

9. References

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