Safety and Incident Management Plan

Wet Processing Lab

Department of Textile Engineering

Ahsanullah University of Science and Technology

Introduction

The Wet Processing Laboratory of the Department of Textile Engineering (TE) at Ahsanullah University of Science and Technology (AUST) places the highest priority on the safety and welfare of students, faculty members, researchers, and staff. As a core laboratory for textile wet processing education and research, the laboratory provides practical training in pre-treatment, dyeing, printing, finishing, chemical preparation, and testing operations. Due to the use of chemicals, dyes, heated equipment, steam, and electrical machinery, strict safety measures are essential. This plan outlines the procedures and practices established to prevent, address, and manage laboratory incidents and accidents while ensuring a safe learning and research environment.

Objective

To ensure a safe, well-managed laboratory environment by implementing a comprehensive plan to prevent and manage incidents and accidents in the Wet Processing Laboratory, aligning with accreditation requirements and laboratory safety standards.

1. Laboratory Safety Rules

1. General Rules

- All students, faculty, and staff must wear appropriate PPE, including lab coats, safety goggles, chemical-resistant gloves, masks (where necessary), and closed-toe shoes.
- No unauthorized individuals are allowed in the laboratory.
- Food, drinks, smoking, and open flames are strictly prohibited.
- All students must enter their information (ID, Name, Supervisor name) in the requisition form before using any equipment apart from class time.
- Chemical containers must be clearly labeled, handled and recorded accurately in the stock registrar book.
- Users must be familiar with the location and proper use of eye-wash stations, fire extinguishers, first-aid kits, and emergency exit.
- Chemical waste must never be disposed of directly into sinks unless approved by laboratory guidelines.
- Mobile phone use is prohibited while operating laboratory equipment.

2. **Behavioral Rules**

- Follow instructions provided by the Lab In-Charge, course teacher, and Lab Attendant.
- Do not conduct experiments without prior training or authorization.
- Always maintain a clean and organized workspace.
- Report spills, chemical leaks, equipment malfunction, or unsafe conditions immediately.

3. **Machine-Equipment Specific Safety**

- Inspect dyeing machines, dryers, ovens, padding mangles, and all the laboratory instruments before use.
- Handle acids, alkalis, oxidizing agents, reducing agents, dyes, and auxiliaries according to approved procedures.
- Use fume hoods or well-ventilated areas when handling volatile or hazardous chemicals.
- Never mix chemicals unless instructed by laboratory procedures or supervisors.
- For final year projects and research work, students must obtain approval from the supervisor and Lab In-Charge before conducting experiments.

2. Safety Procedures and Practices

1. **Before Lab Sessions**

- The Lab In-Charge ensures weekly inspection of laboratory equipment and safety systems.
- The Lab Attendant verifies the availability of first-aid supplies, spill kits, eye-wash stations, and fire safety equipment.
- A safety orientation covering chemical handling, emergency response, and equipment operation is conducted at the beginning of each semester.

2. **During Lab Sessions**

- The Lab Attendant supervises laboratory activities to ensure compliance with safety practices.
- Course teachers ensure only authorized students handle chemicals and operate equipment.
- Chemical preparation, heating operations, and dyeing processes must be monitored continuously.

3. **After Lab Sessions**

- All chemicals and glassware must be returned to designated storage areas.
- Laboratory equipment must be cleaned and switched off after use.
- Chemical waste and contaminated materials must be disposed of according to laboratory waste management procedures.

3. Provisions in Case of Accidents and Health Hazards

1. Emergency Equipment

- First Aid Kit: Safely Stocked and easily accessible.
- Eye-Wash Station: Available for chemical exposure emergencies.
- Chemical Spill Kits: Available for safe containment and cleanup of chemical spills.
- Fire Safety Equipment: Includes fire extinguishers, fire blankets, and alarms, inspected regularly by the Lab Attendant.

2. Emergency Response

- Minor Incidents:
  - First aid administered by the Lab Attendant.
  - Incident documented in the Lab Incident Report Log.
- Major Incidents:
  - Immediate notification to the Lab In-Charge.
  - Activation of emergency services via the AUST Fire/Disaster Safety Team.

3. Evacuation Procedures

- Follow AUST's established evacuation plan.
- The Lab In-Charge and lab attendant coordinates evacuation procedures.
- The Lab In-charge ensures all students exit safely and no one remains inside the laboratory.

4. Roles and Responsibilities

1. Lab In-Charge

- Supervise overall lab safety and compliance.
- Organize safety training on chemical handling and equipment operation.
- Report emergencies to the Warden/Assistant Warden and ensure timely action.

2. Lab Attendant

- Ensure day-to-day implementation of safety practices.
- Conduct safety checks before and after lab sessions.
- Assist in emergency response and first aid.

3. Students

- Follow all safety rules and standard operating procedures.
- Use PPE properly and handle chemicals responsibly.
- Report incidents, injuries, spills, and unsafe conditions immediately to the Lab Attendant.

5. Documentation for Accreditation

1. **Safety Rules and Procedures**
   - A written manual outlining all safety rules and experimental procedure for Wet Processing Lab is kept in the laboratory.
2. **Incident Records**
   - A Lab Incident Report Log book for all reported incidents, including date, time, nature, and actions taken is maintained.
3. **Inspection Logs**
   - Document machine inspections, safety equipment checks, chemical safety check and safety training sessions.

Conclusion

The Safety and Incident Management Plan of the Wet Processing Laboratory ensure a structured and proactive approach to maintaining a safe, disciplined, and risk-controlled working environment. Through proper chemical management, equipment safety, emergency preparedness, and continuous training, the laboratory supports safe academic, research, and industrially relevant activities while fostering a strong culture of safety within the Department of Textile Engineering.