A Cup of Joe with the Safety Crew
“Job Hazard Assessments ”

January 2026 MUB

Announcing Lab Safety Week 2026
February 9–13

Goals

- Build a culture where safety feels shared, supportive, and empowering
- Highlight practical skills that make labs safer every day
- Celebrate the people who model great safety practices across campus

What to Expect

- Daily micro-trainings and pop-up demos
- Hands-on activities and scavenger hunts
- Safety Award nominations and community celebration
- Bingo cards, swag, and friendly competition

January 2026 MUB

Planned Events at a Glance

Monday — Kickoff & Awareness Warm campus message, library table, bingo cards, swag

Tuesday — Emergency Preparedness Scavenger hunt, spill response demo, fire extinguisher simulator

Wednesday — Chemical Safety Short talk: “Five Chemical Storage Mistakes,” self-check challenge

Thursday — PPE & Practical Skills Glove demos, eye protection table, eyewash micro-training

Friday — Community & Celebration Meet the EHS/RI team, prize drawings, Safety Award announcements

Creating a Job Hazard Assessment (JHA)

EHS Coffee Talk Edition January 2026

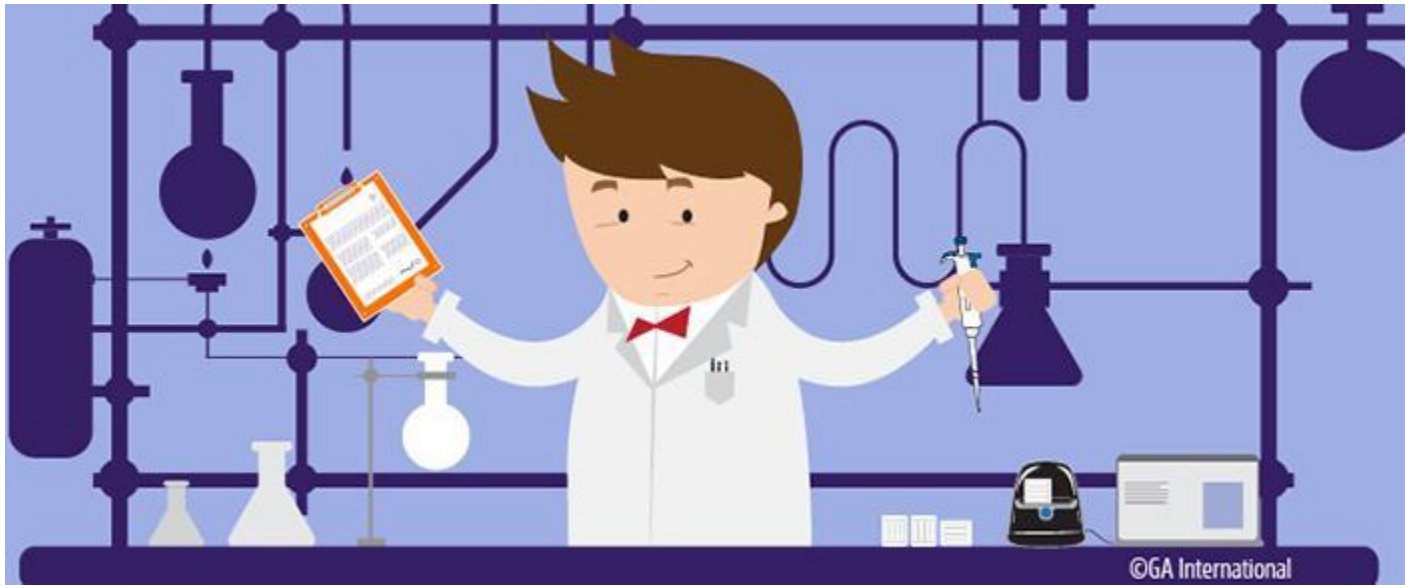
Michigan Tech Environmental
Health and Safety

🎯 Learning Objectives

- ✔ Explain the purpose and value of a Job Hazard Assessment in a Husky research environment
- ✔ Break down a laboratory task into discrete steps
- ✔ Identify hazards associated with each step
- ✔ Select appropriate controls using the hierarchy of controls
- ✔ Document a clear, actionable JHA that supports safe, repeatable work

📌 Breakout #1

“What’s one lab task you’ve done recently that felt more complicated or risky than it looked at first glance?”



Why JHAs Matter in a Husky Labs

- Uniform instructions for controlling routine lab operations with known hazards
- JHAs help standardize safety expectations across diverse experience levels
- They support compliance with OSHA's requirement to assess workplace hazards
- Facilitates more consistent training of new lab personnel and identifies training deficiencies
- Hazards are identified prior to work allowing for risk to be determined and controls to be implemented.
- Some hazards identified during the preparation of a JHA can be completely eliminated during the planning phase

The steps of a completed JHA translate readily into an experimental procedure

What Is a JHA?

A tool to identify hazards associated with a particular job or task. Control measures are developed for each hazard.

A job hazard analysis's real purpose is to bring safety concerns to light!

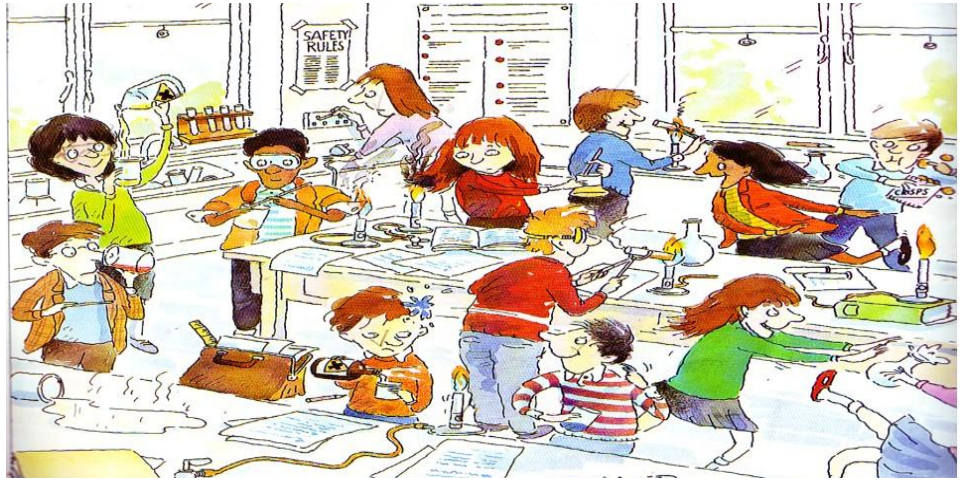
A Job Hazard Analysis:

- Breaks a task into steps
- Identifies hazard
- Defines controls
- Supports SOPs and training

Think of a JHA as “expertise” made visible

When Do MTU Labs Need a JHA ?

- Projects where human error could lead to severe accident or injury
- High hazard tasks
- New equipment and research procedures
- New research lab personnel
- Any process requiring written instructions
- Laboratory work to which students are being newly-introduced



Student/Researcher/Staff turnover is a major JHA driver in Academic Research Programs!

The MTU JHA Framework

Step 1: Describe the task

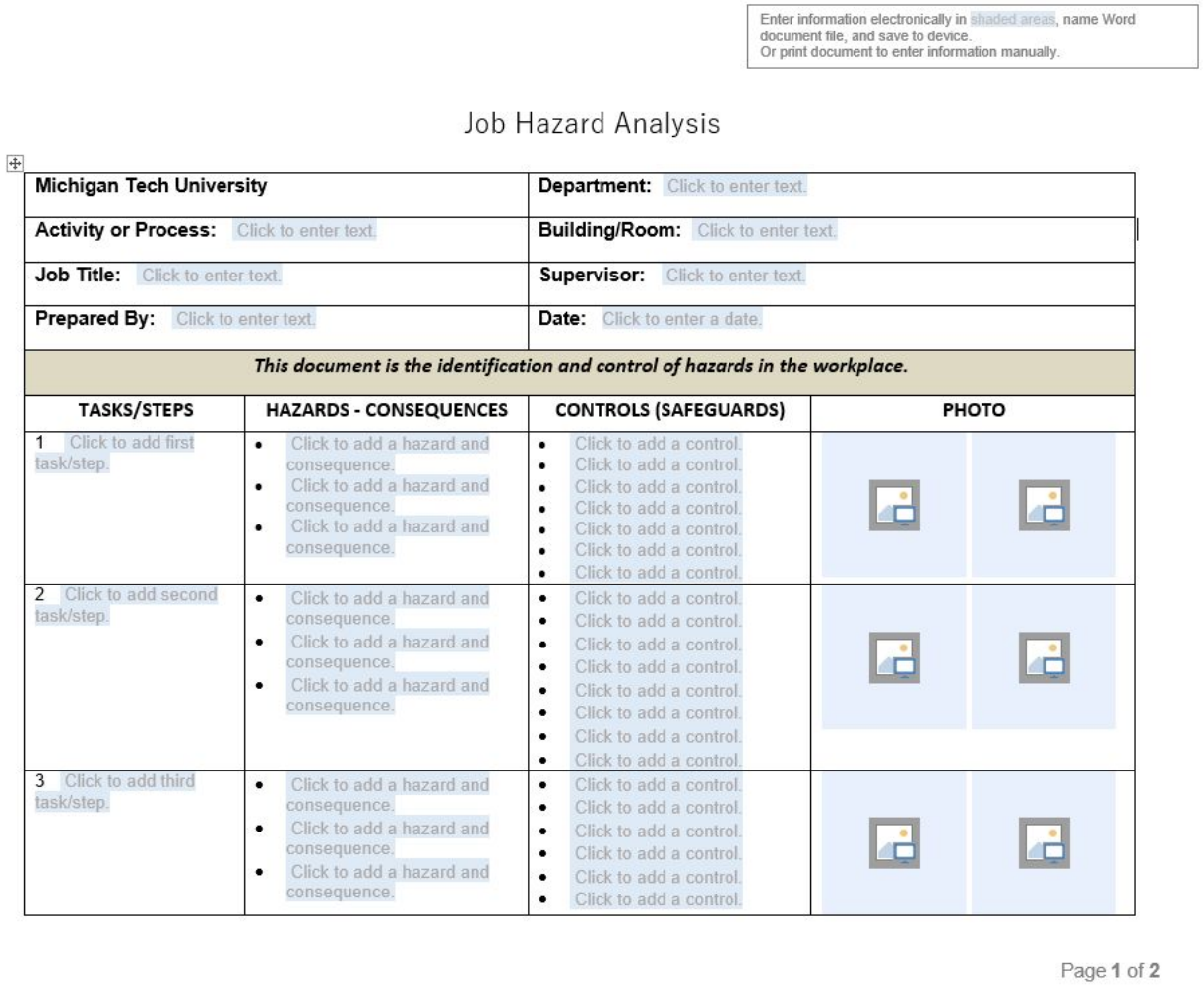
Step 2: Break it into steps

Step 3: Identify hazards

Step 4: Select controls

Step 5: Assign PPE

Step 6: Identify/Document training



Enter information electronically in shaded areas, name Word document file, and save to device.
Or print document to enter information manually.

Job Hazard Analysis

Michigan Tech University	**Department:** Click to enter text.
Activity or Process: Click to enter text.	**Building/Room:** Click to enter text.
Job Title: Click to enter text.	**Supervisor:** Click to enter text.
Prepared By: Click to enter text.	**Date:** Click to enter a date.

This document is the identification and control of hazards in the workplace.

TASKS/STEPS	HAZARDS - CONSEQUENCES	CONTROLS (SAFEGUARDS)	PHOTO
1 Click to add first task/step.	• Click to add a hazard and consequence. • Click to add a hazard and consequence. • Click to add a hazard and consequence.	• Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control.	
2 Click to add second task/step.	• Click to add a hazard and consequence. • Click to add a hazard and consequence. • Click to add a hazard and consequence.	• Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control.	
3 Click to add third task/step.	• Click to add a hazard and consequence. • Click to add a hazard and consequence. • Click to add a hazard and consequence.	• Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control. • Click to add a control.	

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Step 1: Describe the Task

Include:

- Purpose
- Location
- Equipment
- Material

Keep it clear and specific!

Analysis for neutralizing solution of glacial acetic acid, zinc sulfate heptahydrate, potassium chloride, and water

Table 9–2

Job Hazard Analysis			
Job Location: **Laboratory Group:** **Date:**			
Activity or Job	**Neutralizing the contents of a volumetric flask containing 350 mL of a solution of glacial acetic acid (200 mL); zinc(II) sulfate heptahydrate (10 g); potassium chloride (35 g); and water (150 mL). This procedure can be followed for neutralization of aqueous solutions where pH is the characteristic hazard. Down the drain disposal depends on federal, state, and local ordinances.**		
Completed By			
Equipment and Chemicals Required	**Stir plate; magnet; fume hood; ice; beakers; thermometer; 6 M sodium hydroxide; spill kit; waste container** **PPE required: chemical splash goggles; nitrile gloves; lab coat** **PPE optional: Face shield**		
Work Steps and Tasks *Describe the tasks or steps*	**Hazards Identified**	**Risk Level**	**Control/Safe Work Procedures for each**

American Chemical Society Example

Step 2: Breaking Down the Task: The Foundation of a JHA

Breakout #2

Lets choose a simple lab task:
“Preparing a 1M hydrochloric acid solution”

In pairs or small groups, generate a list of steps required to complete the task.

📌 Breakout #2 – The Breakdown

Breaking it into steps:

1. Retrieve/Don PPE
2. Gather materials and equipment
3. Move acid bottle to fume hood
4. Measure concentrated acid
5. Add acid to water
6. Label and store solution

Safety Knowledge Check Point: Are Volumetric Flasks suitable for Neutralization or Acid/Base Dilutions? Why or Why Not?

Step 2: Breaking Down the Task: The Foundation of a JHA

So… What Makes a Step?

A good step is:

- A single action
- Performed by one person
- With a clear beginning and end

Avoid “Russian Nesting Doll” Steps for example “prepare solution”—too broad.

Step 2: Breaking Down the Task: The Foundation of a JHA

📌 Breakout #3: Application

Now... choose a basic task from your own lab
(e.g., preparing standards, pipetting blood samples, running a centrifuge, etc).

List **5–8 steps**.

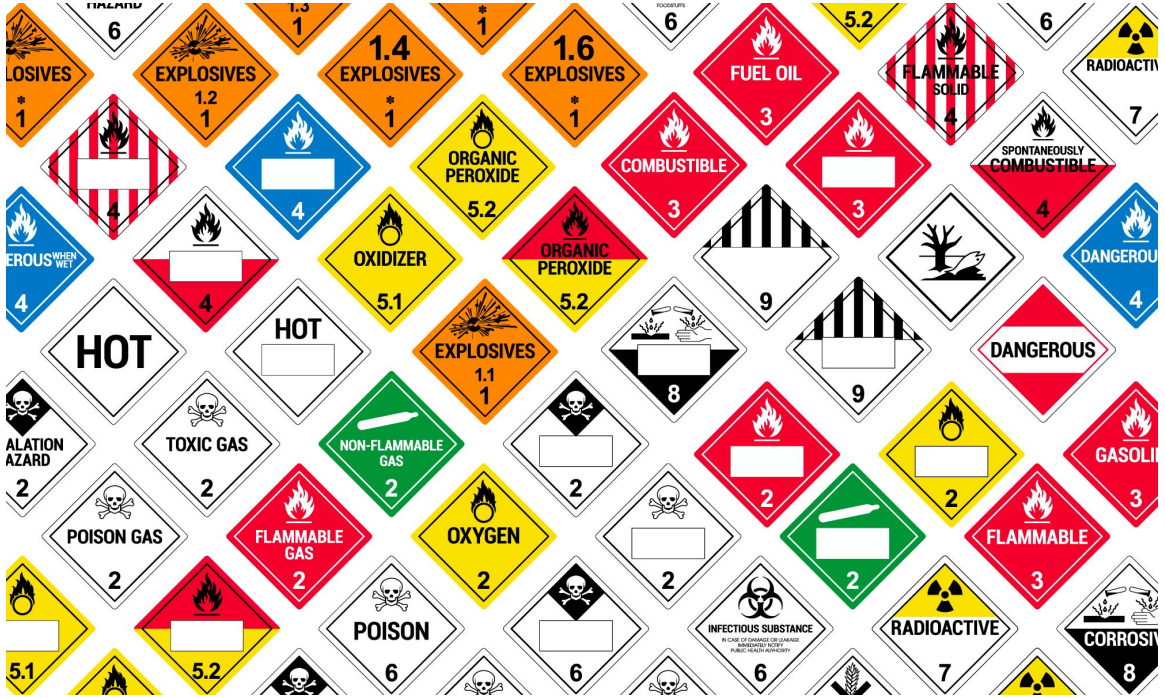
Be specific. “Move sample to centrifuge” is better than “prepare sample.”

Step 3: Identifying Hazards Step by Step

For Each Step Potential Hazards Need to Be Identified

Hazard Categories to Consider

- **Chemical** (corrosives, toxics, flammables)
- **Physical** (sharps, heat, noise, pinch points)
- **Biological** (pathogens, recombinant DNA, human materials)
- **Radiation** (lasers, UV, radioisotopes)
- **Ergonomic** (repetitive motion, awkward posture)
- **Environmental** (waste, spills, ventilation)



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Step 3: Identifying Hazards Step by Step

Common MTU Lab Hazard Examples

- Weighing powders → inhalation
- Cryogens → frostbite
- Centrifuge → rotor failure
- Autoclave → burns
- Pipetting → repetitive strain

⚠️ Step 3: Identifying Hazards Step by Step

📌 Breakout #4

For each step in your task, call out the hazards.

Example: “Measuring concentrated HCl” → corrosive splash, fumes, glass breakage.

Step 4: Choosing Controls: Applying the Hierarchy

Control measures are an action aimed to eliminate a hazard completely.

If the hazard you've identified can't be eliminated, follow the hierarchy of controls to select the next-best control to mitigate the risk.

Step 4: Choosing Controls: Applying the Hierarchy

📌 Breakout #5

The groups propose controls at each level.

The Hierarchy of Controls Questions to Ask

From most effective to least:

Elimination – Can the hazard be removed entirely?

Substitution – Can a safer chemical or method be used?

Engineering Controls – Fume hoods, guards, interlocks

Administrative Controls – SOPs, training, signage

PPE – Gloves, goggles, lab coats

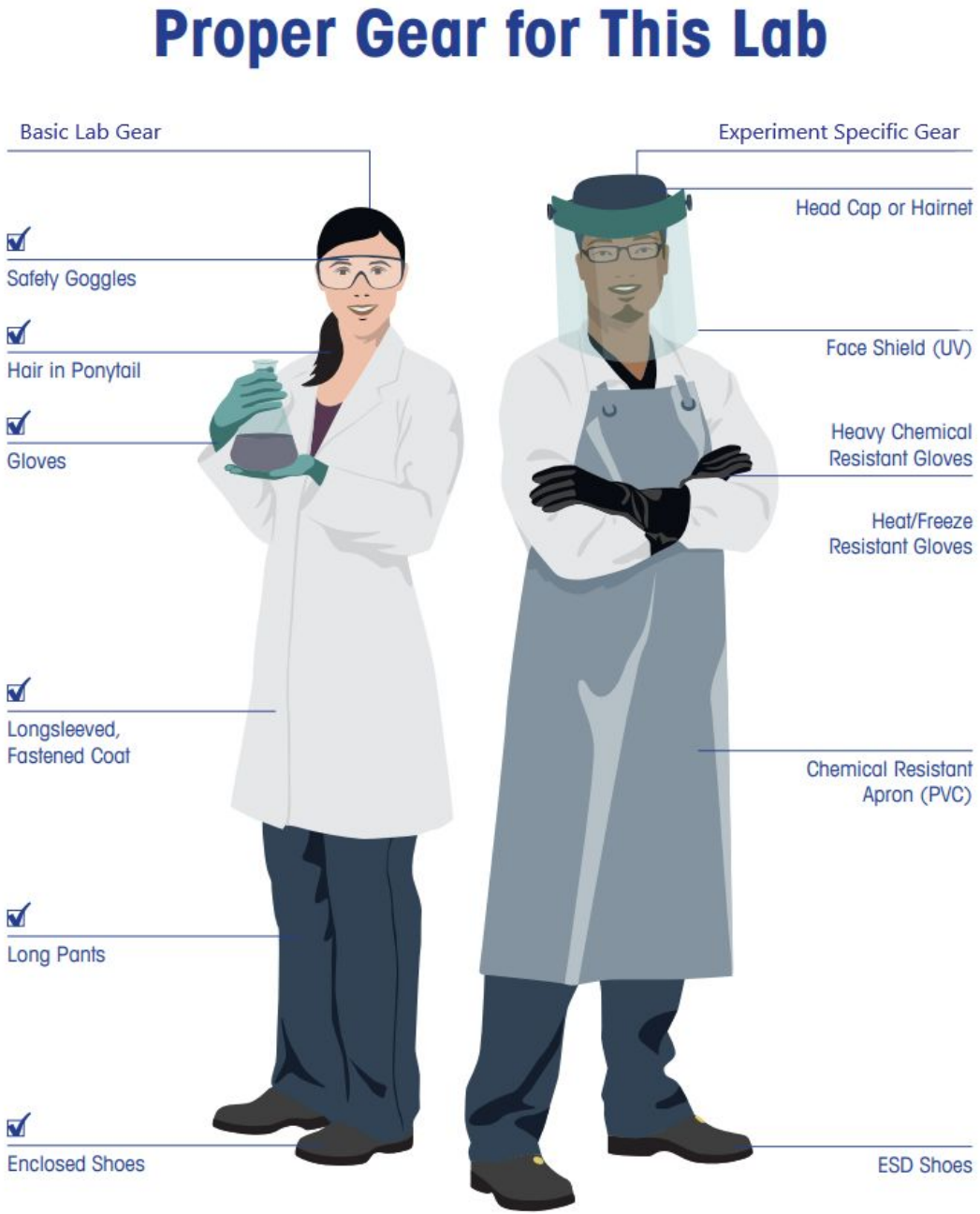
Step 5: PPE Selection

Even though PPE is the least effective of control measure, it should **absolutely** be used, in case other control measures fail.

The success of PPE depends in part on whether or not lab workers actually use it.

PPE is always essential, and especially critical in the following circumstances:

- When engineering controls are not feasible or they do not totally eliminate a hazard
- As a temporary control while engineering controls are being developed
- In emergency situations.



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Step 6: Training

Many Training Requirements

- Lab-specific
- Chemical Hygiene Plan
- Biosafety
- Equipment-specific
- Hazardous waste
- Emergency procedures

📌 Breakout #6

In your groups, determine PPE and Training Requirements

Permeation/Degradation Resistance Guide for Ansell Gloves

The first square in each column for each glove type is color coded. This is an easy-to-read indication of how we rate this type of glove in relation to its applicability for each chemical listed. The color represents an overall rating for both degradation and permeation. The letter in each square is for Degradation alone…

- GREEN: The glove is very well suited for application with that chemical.
- YELLOW: The glove is suitable for that application under careful control of its use.
- RED: Avoid use of the glove with this chemical.

CHEMICAL	LAMINATE FILM BARRIER			NITRILE SOL-VEX			UNSUPPORTED NEOPRENE 29-865			SUPPORTED POLYVINYL ALCOHOL PVA			POLYVINYL CHLORIDE (Vinyl) SNORKEL			NATURAL RUBBER CANNERS AND HANDLERS*			NEOPRENE/ NATURAL RUBBER BLEND CHEMI-PRO*		
	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Degradation Rating	Permeation: Breakthrough	Permeation: Rate
1. Acetaldehyde	■	380	E	NR	—	—	E	10	F	NR	—	—	NR	—	—	E	7	F	E	10	F
2. Acetic Acid	■	150	—	G	270	—	E	60	—	NR	—	—	F	180	—	E	110	—	E	260	—
3. Acetone	▲	>480	E	NR	—	—	E	10	F	NR	—	—	NR	—	—	E	10	F	G	10	G
4. Acetonitrile	▲	>480	E	F	30	F	E	20	G	■	150	G	NR	—	—	E	4	VG	E	10	VG
5. Acrylic Acid	—	—	—	G	120	—	E	390	—	NR	—	—	NR	—	—	E	80	—	E	65	—
6. Acrylonitrile	E	>480	E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Reviewing and Updating JHAs

📌 When to Update

- New equipment or chemicals
- New personnel
- After an incident or near miss
- When procedures change
- Annually, as part of lab housekeeping

🗣️ **RoundTable Reflection**
“What’s one JHA in your lab that probably needs updating?”

Wrap Up and Takeaways

Environmental Health and Safety

Key Messages

- JHAs are living documents
- They support training, consistency, and safety culture
- They empower students and staff to think critically about risk
- They help labs meet regulatory expectations without adding unnecessary burden

Have Questions…You Know Who to Call!!!

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