

## JOB SAFETY ANALYSIS



**Worksheet Number or Identifier:**

Laboratory Job Hazard Analysis

**Job/Operation Title:** Labroatory activities involving radioactive materials, and both ionizing and nonionizing radiological equipment

**Date:**  
01/08/2021

**Department/Division/Section:**

Environmental Health and Safety

**Developed By:**  
Chris Frydenlund

**Person(s) Performing This Job:**

Students, faculty and staff

**Reviewed By:**  
Paula Tate

**Start Date:** All Spring, Summer, and Fall semesters.

**Duration:** 24/7

Task/Step	Potential Hazards	Recommended Safe Job Procedures
1. Entry into laboratories utilizing radioactive materials or radiological equipment.	1. Exposure to radiological materials and/or equipment (inhalation, ingestion, contact, or injection).  2. Exposure to toxic chemicals related to use of  2. Exposure to needles/sharps	Observa all hazard and warning signs  Observe all SDS material  Do not handle materials unless you are following safe procedures  Do not recap needles or pickup broken glass  Maintain situational awareness and inform supervisor of any unusual conditions  Ensure all general and lab specific safety training is completed and passed
2. Conduct wipe tests	1. Exposure to radiological materials and/or equipment (inhalation, ingestion, contact, or injection).  2. Exposure to toxic chemicals related to laboratory work.  9. Exposure to needles/ broken glass	Wear appropriate PPE for the work involved  Maintain situational awareness and inform supervisor of any unusual conditions  Ensure wipe tests are completed at all possible radioactive material contact locations.  Do not pick up sharps or broken glass by hand.  Use proper lifting techniques

## POTENTIAL HAZARDS OF THIS JOB

Hazards	Prob.	Sev.	Consequences
Combustible materials	1	2	Radiation Burns
Corrosive materials	1	2	Carcinogen/teratogen/mutagen
Flammable materials and liquids	1	2	Blood borne pathogens
Radioactive Material	1	3	Penetration by sharp object
Radiological Equipment	1	2	Toxin/poison

## HAZARD CONTROL MEASURES USED FOR THIS JOB

<p><b>Administrative Controls:</b></p> <ul style="list-style-type: none"> <li>Emergency procedures</li> <li>Fire protection program</li> <li>Housekeeping practices</li> <li>Inspections (ongoing) work areas, equipment, tools, etc.</li> <li>Inspections (pre-job) - work areas, equipment, tools, etc.</li> <li>Material handling procedures</li> <li>Monitoring (biohazards)</li> <li>Monitoring (hazardous atmospheres)</li> <li>Operating instructions (equipment)</li> <li>Operating procedures (process)</li> <li>Policy or policies</li> <li>Safety and health program</li> <li>Safety checklists (use to document inspections)</li> <li>Safety Data Sheets (SDS)</li> <li>Signage</li> <li>Trained personnel</li> <li>Work practices</li> <li>Work schedules (adjust time)</li> </ul>	<p><b>Required Training:</b></p> <ul style="list-style-type: none"> <li>Hazard Communication (HAZCOM).</li> <li>Laboratory safety.</li> <li>Personal protective equipment (PPE).</li> </ul>
<p><b>Engineering Controls:</b></p> <ul style="list-style-type: none"> <li>Air filtration</li> <li>Chemical reduction</li> <li>Chemical substitution</li> <li>Ventilation and exhausting</li> </ul>	<p><b>Required PPE:</b></p> <ul style="list-style-type: none"> <li>Clothing - chemical resistant Clothing - long pants</li> <li>Eye protection</li> <li>Nitrile gloves</li> <li>Personal protective equipment Safety glasses</li> <li>Side shield</li> </ul>
<p><b>Required Permit(s):</b> Licensure by the State of Texas.</p>	<p><b>Other Information:</b> This is a continuous process.</p>

## HAZARD CONTROL MEASURES USED FOR THIS JOB

<p><b>Administrative Controls:</b></p> <p>Emergency procedures          Fire protection program          Housekeeping practices          Inspections (ongoing) work areas, equipment, tools, etc.          Inspections (pre-job) - work areas, equipment, tools, etc.          Material handling procedures          Monitoring (biohazards)          Monitoring (hazardous atmospheres)          Operating instructions (equipment)          Operating procedures (process)          Policy or policies          Safety and health program          Safety checklists (use to document inspections)          Safety Data Sheets (SDS)          Signage          Trained personnel          Work practices          Work schedules (adjust time)</p>	<p><b>Required Training:</b></p> <p>Hazard Communication (HAZCOM).          Laboratory safety.          Personal protective equipment (PPE).</p>
<p><b>Engineering Controls:</b></p> <p>Air filtration          Chemical reduction          Chemical substitution          Ventilation and exhausting</p>	<p><b>Required PPE:</b></p> <p>Clothing - chemical resistant          Clothing - long pants          Eye protection          Nitrile gloves          Personal protective equipment          Safety glasses          Side shield</p>
<p><b>Required Permit(s):</b></p> <p>Completion of required training.</p>	<p><b>Other Information:</b></p> <p>This is a continuous process.</p>

Probability	Severity
1 - Low	1 - Low
2 - Medium	2 - Medium
3 - High	3 - High