

ARKANSAS TECH UNIVERSITY HEALTH & SAFETY POLICY

DATE: March 9, 2022

SUBJECT: Respiratory Protection

PURPOSE: The Respiratory Protection Policy has been established to coordinate the use and maintenance of respiratory protective equipment used by Arkansas Tech University (ATU) employees. Respiratory protection may be needed to reduce an employee's exposure to chemicals, dusts, mists, or gases in the work environment.

SCOPE: This program applies to all Arkansas Tech University employees and will assist trained personnel to work safely in hazardous work environments, such as welding, oxygen deficient atmospheres, toxic atmospheres, hazardous materials response, confined space entries, etc.

RESPONSIBILITY: It shall be the responsibility of the Occupational Safety Coordinator (OSC) to maintain this program current with existing State and Federal standards and industry best practices, to ensure that employees affected by this policy are adequately trained and to ensure that all employees of this program are enforced. It shall be the responsibility of supervisors to ensure that employees under their control comply with all elements of this policy. It shall also be the responsibility of individual employees affected by this program to know, understand, and comply with this policy.

NOTE: It shall be the intent of the Director, Office of Facilities Management (Facilities Management) to strive to eliminate ALL chemicals and materials in the workplace that may be consider toxic, hazardous, or otherwise might require the use of a respirator. However, if and when that is not possible this policy will be followed.

Designation of Program Administrator

The Occupational Safety Coordinator has been designated as the one responsible for administering the elements of the respiratory protection policy at Arkansas Tech University. Responsibilities of the program administrator are:

- Evaluating the hazard in the workplace and identify jobs that may require employees to wear respiratory protection.
- Selection of appropriate respiratory protection equipment.
- Establish a training program for respirator users and ensure that the affected employees are properly trained.

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- Monitor respirator use and workplace conditions to ensure that respirators are used in accordance with designated training and certification.
- Ensure that annual fit testing is completed.
- Ensure that respiratory protection equipment is properly cleaned, inspected, maintained, and stored.
- Administer the medical surveillance program.
- Maintain records required by this policy.

Standard Operating Procedure for the Selection of Respiratory Equipment

- Determine areas on the ATU campus where hazardous substances are or may be present.
- Develop a list of hazardous substances that are, or are likely to be used in that area,
- With some degree of certainty determine the amount of chemical contamination an employee could possibly be exposed to.
- Determine the amount of oxygen normally present in the area.
- Based on the above information select an appropriate respirator.

Types of Respirators to be Used by Employees

Only respiratory protective equipment which has been approved by the National Institute of Occupational Safety and Health (NIOSH) and the OSC will be used by employees at ATU.

- Air Purifying: Filter respirators that remove hazardous particulates from the air.
- Air Supplying: supplies breathable air from a safe source.
- Self-Contained Breathing Apparatus (SCBA): specific use respirators in specific areas.

Types of Filters or Cartridges for Best Protection.

- Dust – dust respirators or purple cartridges
- Solvents – black cartridge
- Formaldehyde – black cartridge
- Ammonia – green cartridge
- Acid Gas (Sulfuric Acid) - yellow cartridge
- Welding Fumes – dust, mist, fume mask or purple cartridge

Life of Cartridges Used with Respirators.

- Employees wearing respirators to protect them from dusts and other particulates should change cartridge (or Masks) when they first begin to experience difficulty breathing (i.e. more resistance) while wearing their masks or when they become dirty.

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- Chemical filter cartridges will no longer function properly when they become saturated. Once the cartridge becomes saturated, chemicals will begin to leak through the cartridge into the respirator and ultimately into the wearer's lungs.
- The amount of time that a respirator cartridge can be used depends on exposure.
- Employees wearing respirators that utilize cartridges that filter the air must change the cartridges according to the schedule listed below:

WORK AREA	RESPIRATOR REQUIRED / ALLOWED	CATRIDGE CHANGE SCHEDULE
<ul style="list-style-type: none"> • Spray Booth 	<ul style="list-style-type: none"> • Half-mask respirator with organic vapor cartridges and dust pre-filters 	<ul style="list-style-type: none"> • 6 hours of use
<ul style="list-style-type: none"> • Welding / Grinding 	<ul style="list-style-type: none"> • Dust, Mist, Fume respirator 	<ul style="list-style-type: none"> • 8 hours of use
<ul style="list-style-type: none"> • Wood shop 	<ul style="list-style-type: none"> • Dust respirator 	<ul style="list-style-type: none"> • When resistance to breathing becomes noticeably harder

Voluntary Respirator Use

- Employees may wear respirators in other areas even though their use is not required. These respirators should be approved for the type of contaminants for which protection is desired.
- Employees must also complete an "Information for Employees Using Respirators When Not Required under This Policy" form.

Medical Evaluations

- All employees whose job requires the wearing of a respirator must pass a medical evaluation before being allowed to wear respirator equipment.
- Employees who refuse the medical evaluation will **not** be allowed to wear a respirator.
- The medical evaluation will be conducted confidentially by a physician or other licensed health care professional at Brannon Family Practice Medical Clinic.
- The program administrator will ensure that employees who are required to wear a respirator receive a medical evaluation before using such equipment.
- The following information will be provided to the physician or other health care professional conducting the medical evaluation:

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1. Type and weight of the respirator the employee will use.
 2. The duration and frequency of expected use (including use for rescue or escape).
 3. The expected physical work effort.
 4. Additional protective clothing required to be worn.
 5. Temperatures and humidity extremes that may be encountered.
 6. A copy of OSHA's respiratory protection standard and a copy of ATU's Respiratory Protection Policy.
- Medical Evaluations will be repeated whenever:
 1. An employee displays medical signs or symptoms that are related to his/her ability to use a respirator, or
 2. A physician or other health care professional, supervisor, or OSC determines the need for such a re-evaluation, or
 3. Information from the respiratory protection policy, including observations made during fit-testing and program evaluation, indicates a need to re-evaluate, or
 4. A change in workplace conditions (physical work effort, protective clothing, temperature, etc.) that may result in a substantial physical burden placed on the employee.

Fit Testing

- It is important that the respiratory protection equipment be properly fitted to the individual employee.
- The OSC will ensure that fit testing is conducted **before** employees are allowed to wear respirators and annually thereafter. Fit testing will be conducted in accordance with the procedures outlined in Appendix A, Respiratory Protection Standard, 29 CFR 1910.

Respirator Use

- It is **mandatory** that respirators be used correctly so that proper protection can be ensured.
- Fit checks shall be done each time is the respirator is put on or adjusted.
- Negative Pressure Check
 1. Place the palm of the hand over the filter cartridge inlet to close off the passage of air.
 2. Inhale so the face piece slightly collapses.
 3. Hold your breath for approximately 10 seconds.
 4. If the face piece remains slightly collapsed and no air leakage is detected, the respirator is fitted correctly.
 5. If air leakage is detected, the respirator will need to be re-adjusted and another fit check conducted.
- Positive Pressure Check

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1. Close off the exhalation valve of the respirator by covering it with the palm of the hand to close off the passage of exhausted air.
2. Gently exhale into the face piece.
3. If slight positive pressure can be built up inside the face piece without any outward leakage, the fit is correct.
4. If air leakage is detected, the respirator will need to be re-adjusted and another fit check conducted.

Sealing Surfaces

- **All employees who are required to wear a respirator must be clean shaven and have no other conditions that may affect respirator use.**
- Other conditions may include – sideburns, partial beards mustaches that come between the face and the sealing edges of the respirator; temple pieces of glasses that are between the face and the respirator; facial scars; deep skin creases or other facial abnormality; lack of teeth or dentures, etc.

Respirator Malfunction

- If a respirator malfunctions at any time and for any reason, the wearer shall immediately notify his/her supervisor and shall go to a designated safe area outside of the specific contaminated area to either repair or replace his/her respirator.
- The supervisor must ensure that the respirator is functioning before it is returned to service.

Emergency Procedures

- *The following areas have been identified as having the probability of emergencies:*
- Refrigeration units – system leaks
- Chemical spraying – vapors

Air Quality

- For supplied-air respirators, only Grade D breathing air can be used in the cylinders.
- The OSC will ensure that any air used is certified to meet specifications of Grade D Breathing Air. A copy of the certification will be maintained in the OSC's office.

Cleaning and Disinfecting

- Respirators used for emergency use are to be cleaned and disinfected on a monthly basis and/or after each use. Documentation of cleaning will be kept in OSC's office.
- Respirators issued for the exclusive use of one worker shall be cleaned after each day's use or more often if needed by the person to whom the respirator is assigned.

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- Respirators will be cleaned in the OSC's office or in the Director of Custodial Services' office.
- The OSC will ensure that adequate cleaning supplies are available.
- Respirators will be cleaned in accordance with the guidelines contained in Appendix A-4 of this policy.

Inspection Procedure

- All respirators must be thoroughly inspected routinely and before and after each use.
- Respirators that are routinely used (emergency respirators) must be inspected after each use or on a monthly basis.
- An inspection record, that includes date of inspection and a record of any negative finding, must be kept for all emergency respirators.
- Respirators found to be faulty will be taken out of service (Red Tagged) and repaired as soon as possible and re-certified.

Repairs and Maintenance

- Equipment in need of repair or readjustment must be returned to the OSC as soon as possible
- Worn, deteriorated, or malfunctioning parts will be replaced before the respirator is returned to service.
- Only manufacturer recommended part will be used when repairing a respirator.
- Repairs to the regulators or alarms of atmosphere- supplying respirators will be performed only by the manufacturer's representative.

Respirator Storage

- Respirators must be stored in a way that will assure protection from dust, sunlight, heat, cold, moisture and being damaged.
- Cleaned and completely dried respirators must be kept in individual, re-sealable plastic bags.
- Respirators should be stored so the face piece and exhalation valve is in the normal position.
- Respirators will be stored in the OSC's office or the Director of Custodial Services' office.
- Respirators will not be left lying out or hanging in the work area, on a workbench, table, in a tool cabinet or among heavy tools which can cause damage to the working parts or distort the face piece.

Training

- The OSC will ensure that proper training is provided to authorized respirator users and their supervisors prior to any respirator being used. **Not trained on respirator use – Do not use.**
- Training will include the following topics:

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1. The elements of the ATU Respiratory Protection Policy.
 2. Respiratory hazards encountered at ATU and their possible effects on the employee's health.
 3. Proper selection, fit testing techniques, limitations, proper donning, fit checks, inspection, cleaning, maintenance and emergency use procedures of respirators.
 4. Medical signs and symptoms limiting effective use of respirators.
- Training will be given annually to all employees required and authorized to use respirators. Employees will be required to demonstrate their understanding of the information through a written test and hands-on exercises.
 - Additional training will be required when there are changes in the workplace or when there are indications that the employee's use and/or knowledge of respirator knowledge are considered inadequate.

Program Evaluation

- The OSC and/or the Director of Facilities Management will conduct a periodic evaluation of the workplace to ensure that the provisions of the program are being properly implemented.
- The evaluations will include consultations with affected employees and their supervisors, visual inspection of equipment and usage, hazards in the workplace (including air monitoring if deemed appropriate) and a review of the written policy.