

TITLE:

**SAF-371, RESPIRATOR PROTECTION PROGRAM**

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## TITLE:

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## 1.0 Introduction

### 1.1 Purpose

To provide guidelines for the use of respiratory protection at Emory University and Health Care System as prescribed in the Occupational Safety and Health Administration's (OSHA's) Respiratory Protection Standard - 29 CFR 1910.134

### 1.2 Scope

This program is all inclusive of Emory University students and employees - including faculty and Emory Health Care System.

### 1.3 Definitions

**EHS.** Employee Health Services

**EHSO.** Environmental Health and Safety Office

**Emergency Situation.** Means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

**Employee Exposure.** Means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

**Immediately Dangerous to Life or Health (IDLH).** Means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

**Negative Pressure Respirator (tight fitting).** Means a respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

**NIOSH.** National Institute for Occupational Safety and Health

**OSHA.** Occupational Safety and Health Administration

**Powered Air-Purifying Respirator (PAPR).** Means an air purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

**Self-Contained Breathing Apparatus (SCBA).** Means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

### 1.4 Responsibilities

#### ***Program Administrator***

The Program Administrator for the Respirator Protection Program is the Environmental Health & Safety Office's (EHSO's) Industrial Hygienist and is responsible for:

- Development, implementation, and administration of the Respirator Protection Program;
- Conducting workplace exposure assessments to determine the need for

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respiratory protection;

- Selection of the appropriate types of respirators;
- Development and implementation of training on the proper selection, use, care cleaning and storage of respiratory protection;
- Conducting respirator fit testing; and
- Reviewing, updating, and evaluating overall effectiveness of the Respirator Program.

***Directors, Supervisors, and Managers/Principle Investigators (PIs)***

The principle investigators, directors, supervisors, and managers have primary responsibility for the management and enforcement of the Respirator Protection Program in their areas.

***Employees***

Employees are responsible for complying with the rules set forth by this program.

***Employee Health Services (EHS)***

Employee Health Services (EHS) is responsible for conducting appropriate medical surveillance to ensure that the employee is capable of wearing a respirator.

**1.5 Training Requirements**

The Program Administrator is responsible for ensuring that respirator training is provided to affected employees annually.

- The respiratory training includes the following:
  - Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
  - What the limitations and capabilities of the respirator are;
  - How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
  - How to inspect, put on and remove, use, and check the seals of the respirator;
  - What the procedures are for maintenance and storage of the respirator;
  - How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
  - The general requirements of 29 CFR 1910.134.
- Retraining is provided annually and when any of the following situations occur:
- Changes in the workplace or the type of respirator render previous training obsolete;
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.
- The basic advisory information on respirators, as presented in (Mandatory) Information for Employees Using Respirators When not Required Under Standard. - 1910.134 App D is provided in any written or oral format to employees who wear respirators when such use is not required.

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Records of medical evaluations required by this section are retained and made available in EHS in accordance with [29 CFR 1910.1020](#). Qualitative fit test records are retained in EHSO central file until the next fit test. Fit test records contain the following information:

- The name or identification of the employee tested;
- Type of fit test performed;
- Specific make, model, style, and size of respirator tested;
- Date of test; and
- The pass/fail results for fit testing.

**1.7 Program Evaluation**

The Program Administrator is responsible for evaluating the written Respirator Protection to ensure continued compliance to the OSHA Respirator Standard. As a part of the evaluation, employees required to use respirators are consulted to assess their views on program effectiveness and to identify any problems. Any problems identified during this assessment are corrected.

- Factors to be assessed include, but are not limited to:
- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);
- Appropriate respirator selection for the hazards to which the employee is exposed;
- Proper respirator use under the workplace conditions the employee encounters; and
- Proper respirator maintenance

**2.0 Selection and Issuance of Respirators**

The Program Administrator has the following responsibilities in the selection and usage of respirators:

- Conducts workplace exposure assessments to quantify employees' exposure to airborne hazards;
- Selects appropriate type of respirator based upon the respiratory hazards in the work area;
- Conducts periodic exposure monitoring throughout the Emory Campus to ensure that exposure levels remain at acceptable levels;
- Determines the appropriate respirator to be used, based upon the results of the workplace exposure assessment. Only respirators that have been approved by the National Institute for Occupational Safety and Health (NIOSH) are issued to Emory employees; and
- Selects respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to and correctly fits the user.
- The PI, director, supervisor, and manager are responsible for purchasing the type of respirator based upon direction from the Program Administrator.
- Recommended types of respirators to be worn at Emory University are listed in Table 1.0.

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**Table 1.0 – Recommended Types of Respirators**

LOCATION	CONTAMINANT	RESPIRATOR TYPE
Research Laboratories	Animal Dander; Airborne Biological Pathogens	3M N95
Gross Anatomy Laboratories	Formaldehyde	3M, MSA and North ½ and full face mask respirator equipped with Formaldehyde Organic Vapor Cartridges or 3M PAPR equipped with Formaldehyde Organic Vapor Cartridges
Morgue	Formaldehyde	3M, MSA and North ½ and full face mask respirator equipped with Formaldehyde Organic Vapor Cartridges or 3M PAPR equipped with Formaldehyde Organic Vapor Cartridges
Yerkes	Animal Dander; Airborne Biological Pathogens	3M N95 3M PAPR
	Phenyl Tetrahydropyridine (MPTP)	3M, MSA and North ½ and full face mask respirator equipped with P100 Cartridges
Health Care	Tuberculosis; Measles; Varicella (chickenpox); Smallpox; SARS	3M N95
Environmental Health & Safety Office (EHSO)	Spill Team Work conducted in regulated areas	<ul style="list-style-type: none"> <li>▪ Both MSA and 3M Type Respirators</li> <li>▪ Full Face &amp; Half Mask</li> <li>▪ PAPR</li> <li>▪ SCBA</li> </ul>
Police Department	Crowd Control Gas	Avon Gas Mask
Visual Arts Department	Silica Dust	3M N95, P95, or R95

### 3.0 Voluntary Use of Respirators

- Employees may choose to wear respirators even when not required to by the OSHA standard or management.
- The Employees choosing to wear respirators, other than single use respirators (e.g. N95 or dust masks), must be medically evaluated and fit tested.
- All employees volunteering to wear respirators must read and sign the Voluntary Use of Respirators document which can be found on the EHSO website located at [www.ehso.emory.edu](http://www.ehso.emory.edu).

### 4.0 Medical Evaluation

- Employee Health Services (EHS) performs medical evaluations using the OSHA Respiratory Protection Questionnaire.

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- A follow-up medical examination may be provided if indicated by the Medical Evaluation Questionnaire.
- The medical questionnaire and examinations are administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.
- The medical questionnaire is administered in a manner that ensures that the employee understands its content.
- The employee is given the opportunity to discuss the questionnaire and examination results with EHS at the time of the examination.
- Upon completion of the medical evaluation, EHS provides the Program Administrator with the following information:
  - Any limitations on respirator use related to the medical condition of the employee or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
  - The need for any follow-up medical evaluations; and
  - A statement that EHS has provided the employee with a copy of their written recommendation.
- If EHS identifies a medical condition that may place the employee's health at increased risk when wearing a negative pressure respirator, the Program Administrator will work with EHS and the employee to evaluate alternative respiratory protection.
- The employee completes and EHS reviews the Emory Medical Questionnaire annually.
- Additional medical evaluations are provided to the employee if:
  - An employee reports medical signs or symptoms that are related to their ability to use a respirator;
  - EHS, the PI, director, manager, supervisor, or the Respirator Program Administrator deems it necessary that the employee be re-evaluated;
  - Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation; or
  - A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

## 5.0 Fit Testing

- Employees using tight-fitting facepiece respirators will need to pass an annual qualitative fit test.
- Employees using tight-fitting facepiece respirators are fit tested prior to initial use of the respirators, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.
- An additional fit test is conducted whenever the employee reports, or Employee Health Services, the PI, director, manager, supervisor, or the Respirator Program Administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include - but are not limited to - facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

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- If after passing a qualitative fit test, the employee subsequently notifies the Respirator Program Administrator, the PI, director, manager, supervisor, or EHS that the fit of the respirator is unacceptable, the employee is given a reasonable opportunity to select a different respirator facepiece and be retested.
- Qualitative fit testing of Self-Containing Breathing Apparatus (SCBAs) and Powered Air-Purifying Respirators (PAPRs) are accomplished by temporarily converting the respirator user's actual facepiece into a negative pressure respirator with appropriate filters or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.

## 6.0 Use of Respirators

- Respirators with tight-fitting facepieces are not to be worn by employees who have.
- Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
- Any condition that interferes with the face-to-facepiece seal or valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, the equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.
- The employee performs a user seal check each time they put on a tight fitting negative pressure respirator using the User Seal Check Procedures (Mandatory). - 1910.134 App B-1 or procedures recommended by the respirator manufacturer that the employer demonstrates are as effective as those in Appendix B-1 of the Respiratory Protection Standard. This is also known as the negative and positive fit test.
- The PI, director, manager, and supervisor are responsible for surveillance of the work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the PI, director, manager, or supervisor informs the Respirator Program Administrator who then re-evaluates the continued effectiveness of the respirator.
- The employees are required to leave the respirator use area under any of the following situations:
  - to wash their faces or respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or
  - if they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or
  - to replace the respirator or the filter, cartridge, or canister elements.
- If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, the respirator is replaced or repaired before the employee is allowed to return to the work area.
- Employees wearing respirators equipped with chemical cartridge respirators are required to change the chemical cartridge as recommended by the manufacturer or every 8-hours of use, whichever is shorter.

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## 7.0 Immediately Dangerous to Life and Health (IDLH) Atmospheres

Emory employees are not allowed to knowingly enter an area which has an IDLH atmosphere. In these situations a contractor will be contacted through EHSO.

## 8.0 Interior Structural Fires

In the event of a fire, call 911 from a campus phone or 404-727-6111 from a cell phone for the Emory University Fire/Police.

## 9.0 Maintenance and Care of Respirators

- Each respirator user is provided a respirator that is clean, sanitary, and in good working order. Respirators are cleaned and disinfected using the procedures in Respirator Cleaning Procedures (Mandatory). - 1910.134 App B-2, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness.
- The respirators are cleaned and disinfected at the intervals listed in Table 2.0.

**Table 2.0 – Respirator Cleaning Intervals**

RESPIRATORS ISSUE USE	CLEANING & DISINFECTION INTERVAL
for the exclusive use of an employee	as often as necessary to be maintained in a sanitary condition.
to more than one employee	before being worn by different individuals.
maintained for emergency use	after each use
fit testing and training	after each use

## 10.0 Respiratory Storage

- All respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they are packed or stored to prevent deformation of the facepiece and exhalation valve.
- In addition to the requirements of the above paragraph emergency respirators are:
  - Kept accessible to the work area;
  - Stored in compartments or in covers that are clearly marked as containing emergency respirators; and
  - Stored in accordance with any applicable manufacturer instructions.

## 11.0 Inspection of Respirators

- Respirators used in routine situations are inspected before each use and during cleaning;
- Respirators maintained for use in emergency situations are inspected at least monthly and in accordance with the manufacturers' recommendations, and are checked for proper function before and after each use;
- Respirator inspections include the following:
- a check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and



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- a check of elastomeric parts for pliability and signs of deterioration.
- In addition to the requirements of the above paragraphs, SCBAs are inspected monthly by EHSO. Air and oxygen cylinders are maintained in a fully charged state and are recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The regulator and warning devices are checked to ensure that they are functioning properly.
- EHSO certifies the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator.
- This inspection information is provided on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information is maintained in EHSO's central file until replaced following a subsequent certification.
- Respirators that fail an inspection or are otherwise found to be defective are removed from service and discarded or repaired or adjusted in accordance with the following procedures:
- Repairs or adjustments to respirators are made only by persons appropriately trained to perform such operations, and only the respirator manufacturer's NIOSH-approved parts designed for the respirator are used;
- Repairs are made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- Reducing and admission valves, regulators, and alarms are adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

## 12.0 Breathing Air Quality and Use for Air Supplied Respirators

Cylinders used to supply breathing air to respirators meet the following requirements:

- Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the 49 CFR Part 173 and 49 CFR Part 178;
- Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and
- The moisture content in the cylinder does not exceed a dew point of -50°F (-45.6°C) at 1 atmosphere pressure.

## 13.0 Identification of Filters, Cartridges, and Canisters

All filters, cartridges, and canisters used at Emory are labeled and color coded with the NIOSH-approval label, and the label is not removed and is legible. Filters, cartridges or canisters are changed as needed and at least once a year during the annual training and fit testing.

## 14.0 References

- [Respiratory Protection Standard - 29 CFR 1910.134](#)
- [OSHA Respirator Medical Evaluation Questionnaire \(Mandatory\). - 1910.134 App C](#)
- [User Seal Check Procedures \(Mandatory\). - 1910.134 App B-1](#)

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- [Respirator Cleaning Procedures \(Mandatory\). - 1910.134 App B-2](#)
- [49 CFR Part 173](#)
- [49 CFR Part 178](#)
- [\(Mandatory\) Information for Employees Using Respirators When not Required Under Standard. - 1910.134 App D](#)
- [29 CFR 1910.1020](#)

**15.0 List of Associated Documents**

- Voluntary Use of Respirators
- Respirator Fit Test Form