

University of Massachusetts Amherst
Written Respiratory Protection Program
EHS.RPP.3.17

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Attachment 1 University of Massachusetts at Amherst Request for Medical Evaluation

Attachment 2 OSHA Respirator Medical Evaluation Questionnaire

1. SCOPE

- 1.1. This Respiratory Protection Program applies to all University of Massachusetts Amherst employees (herein referred as employees) who need to wear a respirator to perform assigned duties on the Amherst campus and other affiliated locations.
- 1.2. This Respiratory Protection Program can offer services for visiting scholars and researchers, however, when possible, these individuals are encouraged to work with the program at their home institution.
- 1.3. In addition, any UMass-affiliated individual who voluntarily wears a respirator including personally owned respirators when one is not required (e.g., to minimize exposure to non-hazardous nuisance odors or non-hazardous levels of nuisance particulates) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this Program, and will be provided with necessary training.
- 1.4. A list of all UMass Amherst personnel currently enrolled in the entity's Respiratory Protection Program will be available through the Respiratory Fit Testing Access database.

2. PURPOSE

- 2.1. This document establishes the UMass Amherst Written Respiratory Protection Program, and sets forth the practices for respirator use, provides information and guidance on proper selection and care of respirators, and contains requirements for establishing respiratory protection procedures and criteria for program evaluation.
- 2.2. It is the goal of UMass Amherst to provide its employees with a safe and healthful work environment by maintaining airborne exposure to within acceptable standards and guidelines. The guidelines in this written program are designed to minimize employee exposure to occupational airborne contaminants such as harmful dusts, smoke, gases, vapors, sprays, and hazardous bioaerosols, as well as oxygen deficiency. This is accomplished, as far as feasible, by accepted engineering control measures, such as enclosure or confinement of the 'hazardous' operation, general and local exhaust ventilation, and substitution with less toxic materials. However, when effective engineering controls are not feasible, or while they are being implemented or evaluated, respiratory protection may be required to minimize *employee exposures*. In these situations, respiratory protection will be provided at no cost to the employees.
- 2.3. The official Respiratory Protection Policy for the UMass Amherst may be accessed in the [Environmental Health and Safety Policy Manual](#), at: <https://ehs.umass.edu/policies-and-guides>.

3. DEFINITIONS

- 3.1 **Air-purifying respirator** – A respirator with an air-purifying **filter**, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element. This includes dust masks and any filtering facepiece.
- 3.2 **Atmosphere-supplying respirator** – A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes **supplied-air respirators (SAR's)** and **self-contained breathing apparatus (SCBA)** units.
- 3.3 **Canister or cartridge** – A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.
- 3.4 **Emergency situation** – 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.

- 3.5 Employee exposure** – Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.
- 3.6 Exposure / hazard assessment** – An evaluation of the nature and magnitude of potential employee exposures to respiratory hazards in the workplace that would occur if the employee were not using respiratory protection, to provide a basis for selecting respiratory protection equipment. Employers must make a "reasonable estimate" of the employee exposures anticipated to occur as a result of those hazards, including those likely to be encountered in reasonably foreseeable **emergency situations**, and must also identify the physical state and chemical form of such contaminant(s).
- 3.7 End-of-service-life indicator (ESLI)** – A system that warns the respirator user of the approach of the end of adequate respiratory protection (e.g., the sorbent in a cartridge-type respirator is approaching saturation or is no longer effective).
- 3.8 Escape-only respirator** – A respirator intended to be used only for emergency exit.
- 3.9 Filter** – A component used in respirators to remove solid or liquid aerosols from the inspired air.
- 3.10 Fit test/fit testing** – The use of a protocol to evaluate how well a respirator ‘fits’ an individual. OSHA-approved fit testing protocols are provided in Appendix A of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.
- 3.11 High-efficiency particulate air (HEPA) filters** – A filter that is at least 99.97% efficient in removing particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR Part 84 particulate filters are the N100, R100, and P100 filters.
- 3.12 Immediately dangerous to life or health (IDLH)** – 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.
- 3.13 Negative pressure respirator (tight fitting)** – 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.
- 3.14 Oxygen-deficient atmosphere** – An atmosphere with oxygen content below 19.5% by volume.
- 3.15 Physician or other licensed health care professional (PLHCP)** – An individual whose legally permitted scope of practice (i.e. license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by the respiratory standard.
- 3.16 Portacount™** – A Quantitative Fit Test (QNFT) apparatus manufactured by TSI ® Inc. This apparatus uses the particulates found in ambient air as the challenge medium. Quantification is by optical density measurement using condensation nucleus counting technology. The instrument specifications include detection of particles as small as 0.2µm in a range of 0.1 to 5 x 10⁵particles/cm³.
- 3.17 Powered air-purifying respirator (PAPR)** – An air-purifying respiratory that uses a blower to force ambient air through air-purifying elements to the inlet covering.
- 3.18 Pressure demand respirator** – A positive pressure **atmosphere-supplying respirator** that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.
- 3.19 Qualitative fit test (QLFT)** – means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

- 3.20 **Quantitative fit test (QNFT)** – A test in which a challenge agent is administered outside the face piece and the presence of the agent is detected and enumerated by analytical instrumentation.
- 3.21 **Respiratory protection program administrator (RPPA)** – An individual having the knowledge, responsibility and authority sufficient to implement and supervise a proper respirator program.
- 3.22 **The (material) safety data sheet (SDS)** – a technical document which provides comprehensive information for use in workplace chemical management. Employers and workers use the SDS as sources of information about hazards and to obtain advice on safety precautions
- 3.23 **Seal check** – An action conducted by the respirator user to determine if the respirator is properly seated to the face.
- 3.24 **Self-contained breathing apparatus (SCBA)** – An *atmosphere-supplying respirator* for which the breathing air source is designed to be carried by the user.
- 3.25 **Supplied-air respirator (SAR) or airline respirator** – An *atmosphere-supplying respirator* for which the source of breathing air is not designed to be carried by the user.

4. RESPONSIBILITIES

NOTE: Words in *bold italics* throughout this Written Respiratory Protection Program indicate terms that are defined in Section 3.0 Definitions.

4.1 UMass Amherst (Employer)

- 4.1.1 UMass Amherst is responsible for providing respirators to employees when they are necessary for health protection. UMass Amherst will provide respirators that are appropriate for the intended purpose at no charge to affected employees. Any expense associated with respirator training, medical evaluations, and respiratory protection equipment will be borne by the UMass Amherst.

4.2 Respiratory Protection Program Administrator (RPPA)

- 4.2.1 The *RPPA* in EH&S is responsible for administering the Respiratory Protection Program. Duties of the program administrator include:
 - 4.2.2 Establish and maintain the UMass Amherst written respiratory protection program, and conduct required evaluations of its effectiveness.
 - 4.2.3 Conduct and/or oversee initial and periodic workplace *exposure/hazard assessments*.
 - 4.2.4 Conduct and/or oversee initial and annual respirator training on the proper use and care of respirators.
 - 4.2.5 Conduct and/or oversee initial and annual respirator *fit testing* for all respirator users.
 - 4.2.6 Select respirators for use in the workplace based on findings from workplace *exposure/hazard assessments*.

- 4.2.7 Maintain records of workplace *exposure/hazard assessments, fit testing*, and training.
- 4.2.8 Notify appropriate department supervisors and respirator users when they are due for renewal medical evaluations, respirator *fit testing* and/or refresher training
- 4.2.9 Provide a copy of the UMass written respiratory protection program and a copy of the OSHA respiratory protection standard to *PLHCP*.
- 4.2.10 Ensure that each employee prior to their medical evaluation complete **University of Massachusetts Request for Medical Evaluation Form (Attachment 1) and OSHA Respirator Medical Evaluation Questionnaire (Attachment 2)**
- 4.2.11 Determine appropriate respirator cartridge and canister ‘change-out schedules’ (when no *ESLI* exists) based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. *RPPA* will also include mention of the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data in this written program.
- 4.2.12 Authorize voluntary use of respiratory protective equipment on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations (see also Section 6.7, Voluntary Respirator Use).
- 4.2.13 Authorize exemptions from wearing respiratory protective equipment on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations. An exempted employee will not be permitted to work in an area requiring respirator use.
- 4.2.14 Conduct an annual review of the UMass Amherst respiratory protection program (see also Section 7.0, Annual Review of the Respiratory Protection Program) and making program or procedural changes as necessary.

4.3 Supervisors of Respirator Users

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of supervisors include:

- 4.3.1 Ensure that affected employees receive required medical evaluations.
- 4.3.2 Ensure that affected employees receive respirator training and *fit testing* prior to working with the respirator, and annually thereafter.
- 4.3.3 Provide new respirator users with on-the-job training about potential respirable hazards, respirator requirements, and this program.
- 4.3.4 Supply appropriate respirators to affected employees free of charge.
- 4.3.5 Ensure that affected employees wear assigned/appropriate respirators.
- 4.3.6 Ensure that the respirators are cleaned, maintained and stored.
- 4.3.7 Notify the *RPPA*:
 - 4.3.7.1 If there is evidence to suggest that an employee needs to be medically reevaluated for respirator use, including but not limited to changes to a user’s facial contour, weight gain

or loss, facial surgery or whenever the user experiences medical signs or symptoms related to their ability to wear a respirator.

- 4.3.7.2 Whenever there are significant changes in the workplace conditions for respirator users (e.g., physical work effort, protective clothing, and temperature).
- 4.3.7.3 Prior to requiring employees to use a product, chemical, or substance for which the product label or *Safety Data Sheet (SDS)* recommends the protection of a respirator at any concentration.
- 4.3.7.4 Whenever they believe there is a need for employees to use respirators to perform work.

4.4 Respirator Users

Each respirator user is responsible for wearing his or her respirator when and where required, and in the manner in which they are trained. Respirator users must also:

- 4.4.1 Use the respiratory protection provided in accordance with instructions and training provided by the *RPPA*.
- 4.4.2 Clean, disinfect, and properly store respirators.
- 4.4.3 Guard against damage to respirators during use, cleaning, and storage.
- 4.4.4 Attend training and obtain medical surveillance.
- 4.4.5 Comply with respirator *fit test* requirements.
- 4.4.6 Report any trouble with or malfunction of the respirator to the appropriate supervisor and/or to the *RPPA*.
- 4.4.7 Notify the appropriate supervisor or the *RPPA*:
 - 4.4.7.1 Whenever medical signs or symptoms of illness appear that may be related to respirator usage or exposure to hazardous atmospheres.
 - 4.4.7.2 Whenever a change occurs in the workplace conditions that could increase the physiological burden on the respirator users while wearing the respirator (e.g., increase in physical work effort required, significant increase or decrease in workplace temperature, the use of protective clothing, etc.).
 - 4.4.7.3 Prior to using a product, chemical, or substance for which the product label or *Safety Data Sheet (SDS)* recommends the protection of a respirator at any concentration.
 - 4.4.7.4 Whenever respirator use is thought to be necessary.
 - 4.4.7.5 If facial contours significantly change, such as by weight gain or loss, facial surgery, etc.

4.5 Physician or Other Licensed Health Care Professional (PLHCP)

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, UMass Amherst will provide a medical evaluation to determine each affected employee's ability to use a respirator, before that employee is *fit tested* or required to use the respirator in the workplace. An employee's medical evaluation will cease when the employee is no longer required to

use a respirator. The duties and responsibilities of the UMass Amherst **PLHCP** (University Health Services) are as follows:

- 4.5.1 Perform medical evaluations for respirator users (see Section 5.1, Medical Evaluation).
- 4.5.2 Provide UMass **RPPA** with a written recommendation for each potential respirator user regarding the individual's ability to use the intended respirator.
- 4.5.3 Determine the frequency of additional follow-up medical evaluations, if needed.
- 4.5.4 Approve employees for respirator use and specify any limitations.
- 4.5.5 Answer employee questions regarding any health effects of respiratory use.
- 4.5.6 Maintain confidential records of Respiratory Protection Program-related medical evaluations as required by law.

5. QUALIFICATIONS FOR RESPIRATOR USERS

5.1. Medical Evaluation

- 5.1.1. Employees who are either required to wear respirators, or who choose to wear an elastomeric face piece respirator voluntarily, must be medically evaluated by a **PLHCP**. Employees are not permitted to wear respirators until a **PLHCP** has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be permitted to work in an area requiring respirator use.
- 5.1.2. An initial medical evaluation will be completed by a **PLHCP** from the UMass Amherst University Health Services before an individual is *fit tested* or required to use a respirator in the workplace. (also see section 5.4)
- 5.1.3. The initial medical evaluation will either use the Medical Evaluation Questionnaire, Sections 1 and 2, Part A of Appendix C to OSHA's Respiratory Protection Standard 1910.134 or an initial medical examination will be conducted by a **PLHCP** that obtains the same information as the OSHA medical questionnaire.
- 5.1.4. The initial medical evaluation and any follow-up examination/evaluation will be administered confidentially during the employee's normal working hours. A follow-up medical examination/evaluation will be provided for an employee who whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the **PLHCP** deems necessary to make a final determination about the ability of an employee to wear a respirator.
- 5.1.5. The medical questionnaire, if used, will be administered in a manner that ensures that the employee understands its content; (i.e., if language barriers exist, translators will be utilized). When this is not possible, an employee will be sent directly to the **PHLCP** for medical evaluation.
- 5.1.6. The **RPPA** in conjunction with the employee's supervisor will provide the **PLHCP** the list of hazardous substances by work area, and the following information (through the completion of **OSHA Respirator Medical Evaluation Questionnaire (Attachment 2)** about

each employee requiring evaluation:

- 5.1.6.1. Name and date of birth.
 - 5.1.6.2. Employee's work area and/or job title.
 - 5.1.6.3. Proposed respirator type and weight.
 - 5.1.6.4. Length of time required to wear respirator.
 - 5.1.6.5. Expected physical work load (light, moderate, or heavy).
 - 5.1.6.6. Potential temperature and humidity extremes.
 - 5.1.6.7. Any additional protective clothing required.
- 5.1.7. After determining the employee's ability to use a respirator, the **PLHCP** will provide the **RPPA** with a copy of written recommendation with following:
- 5.1.7.1. Any limitations on respirator use related to the medical condition of the employee.
 - 5.1.7.2. Any limitations on respirator use related to the workplace conditions in which the respirator will be used.
 - 5.1.7.3. Whether the employee is medically able to use a respirator.
 - 5.1.7.4. The need for any follow-up medical evaluations.
 - 5.1.7.5. A statement that the **PLHCP** has provided the employee with a copy of the **PLHCP's** written recommendation.
- 5.1.8. **Powered air purifying respirators (PAPRs)** or other appropriate 'positive pressure' respirators will be provided to employees as required by medical necessity.
- 5.1.9. Additional Medical Evaluations
- 5.1.9.1. Additional medical evaluations for respirator users will be conducted whenever:
 - User reports medical signs or symptoms that are related to the ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
 - A **PLHCP** or supervisor informs the UMass **RPPA** that an employee needs to be reevaluated.
 - Information from the respiratory protection program, including observations made during **fit testing** and program evaluation, indicates a need for employee reevaluation.
 - A change occurs in workplace condition (e.g., physical work effort, protective clothing, and temperature) that may result in an increased physiological burden placed on the employee.
- 5.1.10. All examinations and questionnaires will remain confidential between the employee and the evaluating physician. The **RPPA** will only retain the physician's written recommendations regarding each employee's ability to wear a respirator.

5.2. Training

- 5.2.1. The **RPPA** will conduct and/or oversee training for respirator users on the contents of the UMass Amherst Written Respiratory Protection Program and their responsibilities under it. All affected employees and their supervisors will be trained prior to using a respirator in the workplace.
- 5.2.2. Employees using respirators will successfully complete training *specific* to the type of respirator used. Each employee shall demonstrate knowledge in the following:
 - 5.2.2.1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise its protective effect
 - 5.2.2.2. The limitations and capabilities of their particular respirator
 - 5.2.2.3. Respirator use in **emergency situations** (e.g., respirator malfunctions)
 - 5.2.2.4. How to inspect, don and doff, use, and '**seal check**' their respirator
 - 5.2.2.5. Maintenance and storage procedures
 - 5.2.2.6. Proper use of their respirator in routine and reasonably foreseeable **emergency situations**
 - 5.2.2.7. Cleaning, disinfecting, storing, inspecting, repairing, discarding and otherwise maintaining respirators
 - 5.2.2.8. How to ensure adequate air quality, quantity, and flow of breathing air for **atmosphere-supplying respirators**
- 5.2.3. Employees will be trained in the respiratory hazards to which they are potentially exposed at UMass Amherst during both routine and **emergency situations**.
- 5.2.4. Employees will be trained in the proper use of respirators, donning, **seal check**, doffing, limitations on their use, and their maintenance.
- 5.2.5. Training will be conducted in a manner that is understandable to the employee (e.g., if language barriers exist, translators will be utilized).
- 5.2.6. Training will take place prior to using a respirator in the workplace and at least annually thereafter.
- 5.2.7. Annual retraining will be conducted to reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary. Additionally, retraining will be administered if/when the following situations occur:
 - 5.2.7.1. Changes in the workplace or the type of respirator render previous training obsolete.
 - 5.2.7.2. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
 - 5.2.7.3. Any other situation arises in which retraining appears necessary to ensure safe respirator use, at the **RPPA's** discretion.
- 5.2.8. The RPPA will conduct training during the fit test, during which the employee is afforded the opportunity to ask questions. The employee will be given a document referencing the training

elements. Record of the fit test will be documented according to section 6.5.15, which will also serve to record the completion of training.

5.3. Fit Testing

- 5.3.1. The UMass **RPPA** will conduct and/or oversee initial and annual respirator **fit testing** for all respirator users in accordance with Appendix A of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.
- 5.3.2. Any individual required to use a respirator (with the exception of loose fitting **PAPR**) will successfully complete at least a **quantitative fit test (QNFT)** specific to the make, model, style, and size of respirator used, before its initial use and at least annually thereafter.
- 5.3.3. More frequent **fit testing** will be performed if required by OSHA regulations for specific substances (e.g., asbestos, lead, etc.).
- 5.3.4. **Fit testing** for tight-fitting **PAPR**'s and atmosphere-supplying respirators (including **SCBAs**) will be accomplished by performing a **quantitative fit test** in the negative pressure mode, regardless of the mode of operation during use.
- 5.3.5. If after passing the **quantitative fit test**, an individual subsequently believes that their respirator fit is unacceptable, the individual will be given a reasonable opportunity to select a different respirator and to be re-tested.
- 5.3.6. Additional **fit testing** will be conducted whenever the user reports, or the **PLHCP**, supervisor, or **RPPA** observe changes in a respirator user's physical condition that could affect the respirator fit, including but not limited to:
 - 5.3.6.1. Facial scarring
 - 5.3.6.2. Dental changes
 - 5.3.6.3. Cosmetic surgery
 - 5.3.6.4. A significant change in body weight
 - 5.3.6.5. Individuals are not permitted to wear respirators if they have:
 - 5.3.6.5.1. Facial hair that comes between the sealing surface of the face piece and the face.
 - 5.3.6.5.2. Facial hair that interferes with valve functions.
 - 5.3.6.5.3. A condition that interferes with face-to-face piece seal or valve function.
- 5.3.7. If a respirator user requires corrective eye glasses, the **RPPA** will make arrangements for providing prescription eyeglasses designed not to interfere with face-to-face piece seal, at no cost to the user.
- 5.3.8. The **RPPA** will issue 'UMass Amherst Respirator Card' to the individuals who successfully complete their **fit testing**.

5.4. Transfer of Qualifications

- 5.4.1 An individual may submit documentation of an appropriate respirator medical evaluation, **fit test** on a specific respirator or training within the previous year for transfer consideration.

5.4.2 The acceptability of transfer documentation will be at the discretion of the *RPPA*.

6. PROCEDURES

6.1. Exposure/Hazard Assessments

- 6.1.1. The *RPPA* or EHS specialist will conduct a workplace *exposure/hazard assessment* for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency.
- 6.1.2. The workplace *exposure/hazard assessment* will include:
 - 6.1.2.1. Identification and development of a list of hazardous substances used in the workplace by department or work process.
 - 6.1.2.2. Review of work processes to determine where potential exposure to hazardous substances may occur. This review will be conducted by surveying the workplace, reviewing the process records, and talking with employees and supervisors.
 - 6.1.2.3. Exposure monitoring to quantify potential hazardous exposures, as warranted.
- 6.1.3. The *RPPA* will select respirators to be used on site, based on findings from workplace *exposure/hazard assessments*, in conjunction with guidance from the OSHA Respiratory Protection Standard 29 CFR 1910.134, and other authoritative sources as appropriate (e.g., NIOSH guidance, manufacturers' instructions, etc.).

6.2. Updating the *Exposure/Hazard Assessments*

- 6.2.1. The *RPPA* will revise and update the *exposure/hazard assessment* as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, he/she should contact his/her supervisor or the *RPPA*. The *RPPA* or EHS specialist will evaluate the potential hazard, and conduct and/or oversee an appropriate work area *exposure / hazard assessment*. If it is determined that respiratory protection is necessary, all other elements of the Respiratory Protection Program will be in effect for those tasks, and the program will be updated accordingly.

6.3. Respirator Selection

- 6.3.1. Respirators may be used when engineering controls are not feasible, while engineering controls are being implemented, and during *emergency situations*.
- 6.3.2. Only NIOSH tested and certified respirators will be provided to employees.
- 6.3.3. The *RPPA* will ensure the evaluation of hazards in the workplace, and, identification of a relevant workplace and user factors, and will base respirator selection on these factors in accordance with the respiratory protection procedures.
- 6.3.4. *Air-purifying respirators* used for the protection against gases and vapors will be equipped with an *end-of-service-life indicator (ESLI)* certified by NIOSH for the contaminant [or] if there is no ESLI for the contaminant or the workplace condition, a change schedule for gas/vapor canisters and cartridges based on objective information or data will be developed and implemented that will ensure the canisters are changed before the end of their service life.

- 6.3.5. If the development of a gas/vapor *canister or cartridge* change schedule based on objective information or data is not feasible, a *supplied air respirator* system will be used.
- 6.3.6. For protection from particulates, an *air-purifying respirator* equipped with NIOSH-certified *high efficiency particulate air (HEPA) filters* or an *air-purifying respirator* equipped with a filter certified for particulates by NIOSH under 42 CFR Part 84 or an *atmosphere-supplying respirator* will be used.
- 6.3.7. For situations where vapors or gases are mixed with particulates, combination cartridges may be used provided that all program requirements are met.
- 6.3.8. *Pressure demand SCBA* or combination *pressure demand SAR* with auxiliary *SCBA* will be the only type of respirators used in *IDLH* atmospheres.
- 6.3.9. All oxygen-deficient atmospheres will be considered *IDLH*. If the atmosphere is uncharacterized, it must be assumed to be *IDLH* and a *pressure demand SCBA* or combination *pressure demand SAR* with auxiliary *SCBA* must be worn.
- 6.3.10. Breathing-air may be supplied to respirators from cylinders or breathing-air compressors

6.4. Air Quality

- 6.4.1. Compressed breathing air will meet at least the requirements for Type 1-Grade D breathing air, (see reference 8.2), as follows:
 - 6.4.1.1. Oxygen content (v/v) of 19.5-23.5%
 - 6.4.1.2. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less
 - 6.4.1.3. Carbon monoxide (CO) content of 10 ppm or less
 - 6.4.1.4. Carbon dioxide content of 1000 ppm or less
 - 6.4.1.5. Lack of noticeable odor
 - 6.4.1.6. Cylinders used to supply breathing air to respirators shall meet the following requirements:
 - 6.4.1.6.1. Cylinders are tested and maintained as prescribed in the Federal Department of Transportation shipping container specification regulations (see reference 8.3).
 - 6.4.1.6.2. Breathing air containers will be properly marked and stored in accordance with OSHA compressed gases standard (see reference 8.4).
 - 6.4.1.6.3. Only breathing gas containers marked in accordance with the NIOSH respirator certification standard shall be used (see reference 8.5).
 - 6.4.1.6.4. Cylinders of purchased breathing air shall have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1-Grade D breathing air.

6.4.1.6.5. The moisture content in the cylinder does not exceed a dew point of -50 °F (-45.6 °C) at 1 atmosphere pressure.

6.4.2. Air Compressors used to supply breathing air will be equipped with the necessary safety and standby devices as follows:

6.4.2.1. Only compressors designed to supply breathing air shall be used

6.4.2.2. The compressor used will be constructed and situated so as to: a) avoid entry of contaminated air into the system, and b) have suitable in-line air purifying sorbent beds and filters installed to assure breathing air quality.

6.4.2.3. The compressor's sorbent beds and filters will be maintained and replaced or refurbished periodically per the manufacturer's instructions.

6.4.2.4. Breathing air moisture content shall be minimized so that the dew point at 1 atmosphere pressure is 10 °F (5.56 °C) below the ambient temperature.

6.4.2.5. If an oil-lubricated compressor is used, it will have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is installed in the system, the air from the compressor will be frequently tested for carbon monoxide to ensure that levels are below 10 ppm carbon monoxide.

6.4.2.6. For compressors that are not oil-lubricated, the air from the compressor will be frequently tested for carbon monoxide to ensure that levels are below 10 ppm.

6.4.2.7. Air line couplings used (both compressed air and supplied air) will be incompatible with outlets for other gas systems to prevent inadvertent mixing of air line respirators with non-reparable gases or oxygen.

6.5. Fit Testing

The RPPA will conduct respiratory *fit testings* using the *Portacount*TM machine and in accordance with the OSHA accepted *fit testing* procedures as follows:

6.5.1. The test subject will be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

6.5.2. Prior to the selection process, the test subject will be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror will be available to assist the subject in evaluating the fit and positioning of the respirator.

6.5.3. The test subject will be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will perform as designed.

6.5.4. The test subject will be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.

6.5.5. The more acceptable face pieces will be noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. If the test subject is not familiar with using a particular respirator, the test subject will be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

- 6.5.6.** Assessment of comfort will include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
- 6.5.6.1.** Position of the mask on the nose
 - 6.5.6.2.** Room for eye protection
 - 6.5.6.3.** Room to talk
 - 6.5.6.4.** Position of mask on face and cheeks
- 6.5.7** The following criteria will be used to help determine the adequacy of respirator fit:
- 6.5.7.1** Chin properly placed;
 - 6.5.7.2** Adequate strap tension, not overly tightened;
 - 6.5.7.3** Fit across nose bridge;
 - 6.5.7.4** Respirator of proper size to span distance from nose to chin;
 - 6.5.7.5** Tendency of respirator to slip;
 - 6.5.7.6** Self-observation in mirror to evaluate fit and respirator position.
 - 6.5.7.7** The test subject will be asked to conduct a user seal check, either the negative and positive pressure seal checks described below:
 - **Positive pressure check:** test subject will be asked to close off the exhalation valve and exhale gently into the face piece. The face fit will be considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal.
 - **Negative pressure check:** test subject will be asked to close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s); inhale gently so that the face piece collapses slightly; and hold the breath for ten seconds. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator will be considered satisfactory.
- Before conducting the negative and positive pressure checks, the subject will be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece will be selected and retested if the test subject fails the user seal check tests.
- 6.5.8** *Fit test* will not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.
- 6.5.9** If a test subject exhibits difficulty in breathing during the tests, she or he will be referred to a *PHLCP*, as appropriate, to determine whether the test subject can wear a respirator while performing his or her duties.
- 6.5.10** If the employee finds the fit of the respirator unacceptable, the test subject will be given the opportunity to select a different respirator and to be retested.
- 6.5.11** Prior to the commencement of the *fit test*, the test subject will be given a description of the *fit test* and the test subject's responsibilities during the test procedure. The description of the

process will include a description of the test exercises that the subject will be performing. The respirator to be tested will be worn for at least 5 minutes before the start of the *fit test*.

6.5.12 The *fit test* will be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

6.5.13 Test Exercises. The test subject shall be fit tested according to the protocols listed in Tables 1 and 2 of this document. The test subject will be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator will be tried. The respirator will not be adjusted once the *fit test* exercises begin. Any adjustment voids the test, and the *fit test* will be repeated.

Table 1. Fit Testing Protocol for Full Facepiece and Half-Mask Elastomeric Respirators

Exercises	Exercise Procedure	Measurement Procedure
Bending Over	The test subject will be asked to bend at the waist as if he/she were to touch his/her toes.	A 20 second ambient sample, followed by a 30 second mask sample.
Jogging-in-Place	The test subject shall jog in place comfortably for 30 seconds	A 30 second mask sample.
Head Side-to-Side	Standing in place, the test subject will be asked to slowly turn his/her head from side to side between the extreme positions on each side. The test subject will be asked to hold the head at each extreme momentarily to inhale at each side.	A 30 second mask sample.
Head Up-and-Down	Standing in place, the test subject will be asked to slowly move his/her head up and down. The test subject will be instructed to inhale in the up position (i.e., when looking toward the ceiling)	A 30 second mask sample followed by a 9 second ambient sample.

Table 2. Fit Testing Protocol for Filtering Facepiece Respirators

Exercises	Exercise Procedure	Measurement Procedure
Bending Over	The test subject will be asked to bend at the waist as if he/she were to touch his/her toes.	A 20 second ambient sample, followed by a 30 second mask sample.
Talking	The test subject will be asked to talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject will be asked to read from a prepared text such as the Rainbow Passage ¹ , count backward from 100, or recite a memorized poem or song.	A 30 second mask sample.
Head Side-to-Side	Standing in place, the test subject will be asked to slowly turn his/her head from side to side between the extreme positions on each side. The test subject will be asked to hold the head at each extreme momentarily to inhale at each side.	A 30 second mask sample.
Head Up-and-Down	Standing in place, the test subject will be asked to slowly move his/her head up and down. The test subject will be instructed to inhale in the up position (i.e., when looking toward the ceiling)	A 30 second mask sample followed by a 9 second ambient sample.

¹**Rainbow Passage** *‘When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow’.*

- 6.5.14** Record of the **fit test** will be kept in the Access database, assuming the **fit test** was successful. The record will contain the test subject's name; make, model, style and size of respirator used; and date tested.

6.6 Respirator Use

6.6.1 General Requirements / Procedures

- 6.6.1.1** The user will perform a **seal check** in accordance with this program each time they don the respirator. Any hair growth or apparel (e.g., jewelry, headphones, etc.) that interferes with the face-to-face piece seal or valve function will be removed or altered so as to eliminate interference and allow a satisfactory respirator fit.
- 6.6.1.2** If corrective spectacles or goggles are required, they will be worn so as not to affect the fit of the face piece.
- 6.6.1.3** If a respirator user requires corrective eyeglasses, the **RPPA** will make arrangements for providing prescription eyeglasses designed not to interfere with face-to-facepiece seal, at no cost to the user.
- 6.6.1.4** Personal protective equipment must be worn in a manner that does not interfere with face-to-facepiece seal or valve function.
- 6.6.1.5** Work area conditions will be monitored by the **RPPA** or the supervisors for changes in work conditions, degree of **employee exposure** or stress that may affect respirator performance and reevaluate the continued effectiveness of the respirators used.
- 6.6.1.6** If a respirator user detects vapor or gas breakthrough, changes in breathing resistance or leakage of the face piece, they will immediately leave the airborne contamination area and determine the cause as follows:
- 6.6.1.6.1** **Cartridge** breakthrough and **cartridge** breathing resistance indicate a need for **cartridge** replacement
 - 6.6.1.6.2** Leakage in the facepiece requires a respirator inspection. If the respirator is damaged in any way, notify the supervisor, and request a replacement for the damaged unit.
 - 6.6.1.6.3** If the respirator is not damaged, perform a user respirator **seal check** in accordance with Respiratory Protection Procedures. If the facepiece still leaks, stop work and call the **RPPA**.

- 6.6.2** The **RPPA** will ensure that respirators selected for protection against gases and vapors are

equipped with an *ESLI* certified by NIOSH for the contaminant. If there is no *ESLI* appropriate for conditions in a particular work area, the *RPPA* will implement a change-out schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The *RPPA* will describe in this written program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

6.6.3 All employees will be permitted to leave the work area to maintain their respirator for the following reasons:

6.6.3.1 To clean their respirator if it is impeding their ability to work

6.6.3.2 To change filters or cartridges

6.6.3.3 To replace parts

6.6.3.4 To inspect the respirator if it stops functioning as intended

6.6.4 Additional Requirements / Procedures for Work in *IDLH* Atmospheres

6.6.4.1 If failure of the respirator could cause the user to be overcome by a toxic or *oxygen-deficient atmosphere*, then at least one additional person will be present.

6.6.4.2 Communications (visual, voice, or signal line) will be maintained between both or all individuals present.

6.6.4.3 Planning will be such that standby personnel will be unaffected by any likely incident and have *SCBA* and suitable rescue equipment, stationed at the nearest “clean” air location for rescue.

6.6.4.4 Employees working in *IDLH* atmospheres will use appropriate retrieval equipment for removing individuals in the event of an *emergency situation* as long as it would contribute to the rescue and would not increase the overall risk resulting from entry, in which case: Equivalent provisions for the rescue of persons from hazardous atmospheres will be provided.

6.7 Voluntary Respirator Use

6.7.1 The OSHA Respiratory Protection Standard permits the voluntary use of respirators by employees for their own comfort or sense of well-being, even when there is no recognized respiratory hazard.

6.7.2 The UMass Amherst *RPPA* will authorize voluntary use of respiratory protective equipment on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations.

6.7.3 Voluntary use of respirators does not require annual fit testing, but initial fit testing is *recommended* to help ensure proper size selection for elastomeric respirators.

6.7.4 Voluntary use of filtering face piece type respirators (e.g., N95, N100) does not require medical clearance, although it is recommended. Voluntary use of all other types of respirators does require that users complete the medical clearance questionnaire and be medically cleared.

6.7.5 The *RPPA* will provide all employees who choose to wear respirators on a voluntary basis with

a copy of Appendix D from the OSHA Respiratory Protection Standard as required.

6.8 Respirator Maintenance, Storage, Inspection, and Repairs

6.8.1 Maintenance/cleaning

6.8.1.1 Respirators will be properly maintained and cleaned in accordance with respiratory protection procedures as follows:

- Respirator maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use.
- Respirators issued for exclusive use of one employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition
- Respirators used by more than one person will be cleaned and disinfected before and after being worn by different individuals
- Respirators maintained for emergency use will be cleaned and disinfected after each use
- Respirators used in *fit testing* and training will be cleaned and disinfected after each use

6.8.2 Storage

6.8.2.1 All respirators will be stored to protect them from:

- Damage
- Contamination
- Dust
- Sunlight
- Extreme temperatures
- Excessive moisture
- Damaging chemicals
- Deformation of face piece or exhalation valve

6.8.2.2 Emergency Use Respirators:

- Will be stored in compartments or in covers that are clearly marked as containing emergency respirators
- Stored in accordance with manufacturer's recommendations
- Kept accessible to the work area

6.8.3 Inspection

6.8.3.1 All respirators will be inspected by users before each use and during cleaning for respirator function, tightness of connections, and the condition of the various parts including, but not limited to:

- Face piece
- Head straps
- Valves
- Connecting tube
- Cartridges, canisters or filters, *ESLI's*
- Elastic parts for pliability and signs of deterioration

6.8.3.2 Respirators that do not meet the requirements of this section will be removed from service, discarded or properly repaired or adjusted.

6.8.4 Repairs

6.8.4.1 Respirator repairs will only be performed by persons appropriately trained to do so [and] using only the manufacturer's NIOSH-approved parts designed for the respirator being repaired; and

6.8.4.2 Will be made in accordance with manufacturer's recommendations and specifications.

6.8.4.3 Repairs or adjustments to reducing and admission valves, regulators, and alarms will be performed by the manufacturer or a technician trained by the manufacturer.

7. ANNUAL REVIEW OF THE RESPIRATORY PROTECTION PROGRAM

7.1. An annual program review will be performed by the *RPPA* as follows:

7.1.1. Evaluate the respiratory protection program to assure compliance with OSHA regulations and University policy and guidelines

7.1.2. Evaluate the respiratory protection procedures to ensure they take into account any new information on hazards, equipment, engineering controls, etc.

7.1.3. Review the medical evaluation and *fit testing* processes.

7.1.4. Review the respirator training curriculum

7.1.5. Use conclusions and "lessons learned" from the period reviewed to make necessary program or procedure changes.

8. REFERENCES

- 8.1. OSHA Respiratory Protection Standard, 29 Code of Federal Regulations 1910.134
- 8.2. ANSI/Compressed Gas Association Commodity Specifications for Air, G-7.1-1989
- 8.3. Federal Department of Transportation shipping container specification regulations, (49 Code of Federal Regulations parts 173 and 178)
- 8.4. OSHA Compressed Gases Standard, 29 Code of Federal Regulations 1910.101
- 8.5. NIOSH Respirator Certification Standard, 42 Code of Federal Regulations Part 84
- 8.6. 3M™ Administrative Respiratory Protection Program, 3M™ Website Training link: http://solutions.3m.com/wps/portal/3M/en_US/Health/Safety/Products/Two/

University of Massachusetts at Amherst Request for Medical Evaluation

When completed, send this and the completed OSHA Health Questionnaire form to:

Occupational Health Nurse
University Health Services
150 Infirmary Way
Amherst, MA 01003

I am requesting a medical evaluation for the following reason(s):

- HAZWOPER annual physical
- Respirator fit test

If this is for a respirator fit test please specify type of respirator:

- N-95 filtering face piece
- Half face respirator
- Full face respirator
- SCBA (self-contained breathing apparatus)
- Other _____

Please provide a reason why you need to wear a respirator if you have selected one:

- Dust protection/animal allergies
- Pesticide protection
- Chemical hazards
- HAZWOPER
- Other _____

My contact info:

Name: _____

Work Tel: _____ Cell: _____

Dept: _____ Supervisor: _____

Work Address: _____

**OSHA Respirator
Medical Evaluation Questionnaire**

University Health Services
University of Massachusetts

Amherst, MA 01003
413-577-5000

uhs

IDX MRN _____

Last _____ First _____ M_

DOB _____ Sex _____

To the employee – can you read (circle one): Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and a place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the healthcare professional who will review it.

Medical Evaluation Questionnaire Reviewed By: _____
Licensed Health Care Provider *Date*

PART A/SECTION 1 (MANDATORY)

The following information must be provided by every employee who has been selected to use any type of respirator (*please print*).

Today's Date: _____

Your Name: _____

Date of Birth: ____/____/_____

Sex: (check one) ____Male ____Female

Your Height: ____Feet ____Inches

Your Weight: _____pounds

Your Job Title: _____

A phone number where you can be reached by the healthcare professional who reviews this questionnaire (include area code) (_____) _____

The best time to phone you at this number: _____AM _____PM

Has your employer told you how to contact the healthcare professional who will review this questionnaire? _____Yes _____No

Check the type of respirator you will use (you can check more than one category):

____N____R or ____P disposable respirator (*filter-mask, non-cartridge type only above*).

Other type (for example half/full face-piece type, powered air purifying, supplied-air self-contained breathing apparatus): _____

Have you worn a respirator (filter mask, non-cartridge type only)?: _____Yes ____No

If yes, what type(s)?: _____

PART A/SECTION 1 (MANDATORY)

Questions 1-9 below must be answered by every employee who has been selected to use any type of respirator (*please circle yes or no*).

- | | | |
|--|-----|----|
| 1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: | Yes | No |
| 2. Have you ever had any of the following conditions? | | |
| a. Seizures: | Yes | No |
| b. Diabetes (sugar disease): | Yes | No |
| c. Allergic reactions that interfere with your breathing: | Yes | No |
| d. Claustrophobia (fear of closed-in places): | Yes | No |
| e. Trouble smelling odors: | Yes | No |
| 3. Have you ever had any of the following pulmonary or lung problems? | | |
| a. Asbestosis: | Yes | No |
| b. Asthma: | Yes | No |
| c. Chronic bronchitis: | Yes | No |
| d. Emphysema: | Yes | No |
| e. Pneumonia: | Yes | No |
| f. Tuberculosis: | Yes | No |
| g. Silicosis: | Yes | No |
| h. Pneumothorax (collapsed lung): | Yes | No |
| i. Lung cancer: | Yes | No |
| j. Broken ribs: | Yes | No |
| k. Any chest injuries or surgeries: | Yes | No |
| l. Any other lung problem that you've been told about: | Yes | No |
| 4. Do you currently have any of the following symptoms of pulmonary or lung illness? | | |
| a. Shortness of breath: | Yes | No |
| b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: | Yes | No |
| c. Shortness of breath when walking with other people at an ordinary pace on level ground: | Yes | No |
| d. Have to stop for breath when walking at your own pace on level ground: | Yes | No |
| e. Shortness of breath when washing or dressing yourself: | Yes | No |
| f. Shortness of breath that interferes with your job: | Yes | No |
| g. Coughing that produces phlegm (thick sputum): | Yes | No |
| h. Coughing that wakes you early in the morning: | Yes | No |
| i. Coughing that occurs mostly when you are lying down: | Yes | No |
| j. Coughing up blood in the last month: | Yes | No |
| k. Wheezing: | Yes | No |
| l. Wheezing that interferes with your job: | Yes | No |
| m. Chest pain when you breathe deeply: | Yes | No |
| n. Any other symptoms that you think may be related to lung problems: | Yes | No |
| 5. Have you ever had any of the following cardiovascular or heart problems? | | |
| a. Heart attack: | Yes | No |
| b. Stroke: | Yes | No |
| c. Angina: | Yes | No |
| d. Heart failure: | Yes | No |
| e. Swelling in your legs or feet (not caused by walking): | Yes | No |
| f. Heart arrhythmia (heart beating irregularly): | Yes | No |
| g. High blood pressure: | Yes | No |
| h. Any other heart problem that you've been told about: | Yes | No |

- | | | |
|---|-----|----|
| 6. Have you ever had any of the following cardiovascular or heart symptoms? | | |
| a. Frequent pain or tightness in your chest: | Yes | No |
| b. Pain or tightness in your chest during physical activity: | Yes | No |
| c. Pain or tightness in your chest that interferes with your job: | Yes | No |
| d. In the past two years, have you noticed your heart skipping or missing a beat: | Yes | No |
| e. Heartburn or indigestion that is not related to eating: | Yes | No |
| f. Any other symptoms that you think may be related to heart or circulation problems: | Yes | No |
| 7. Do you currently take medication for any of the following problems? | | |
| a. Breathing or lung problems: | Yes | No |
| b. Heart trouble: | Yes | No |
| c. Blood pressure: | Yes | No |
| d. Seizures (fits): | Yes | No |
| 8. If you've used a respirator, have you ever had any of the following problems?
(If you've never used a respirator, check the following space and go to question 9:) _____ | | |
| a. Eye irritation: | Yes | No |
| b. Skin allergies or rashes: | Yes | No |
| c. Anxiety: | Yes | No |
| d. General weakness or fatigue: | Yes | No |
| e. Any other problem that interferes with your use of a respirator: | Yes | No |
| 9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? | Yes | No |

Employee Signature

Date

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

- | | | |
|---|-----|----|
| 10. Have you ever lost vision in either eye (temporarily or permanently)? | Yes | No |
| 11. Do you currently have any of the following vision problems? | | |
| a. Wear contact lenses: | Yes | No |
| b. Wear glasses: | Yes | No |
| c. Color blind: | Yes | No |
| d. Any other eye or vision problem: | Yes | No |
| 12. Have you ever had an injury to your ears, including a broken ear drum? | Yes | No |
| 13. Do you currently have any of the following hearing problems? | | |
| a. Difficulty hearing: | Yes | No |
| b. Wear a hearing aid: | Yes | No |
| c. Any other hearing or ear problem: | Yes | No |
| 14. Have you ever had a back injury: | Yes | No |
| 15. Do you currently have any of the following musculoskeletal problems? | | |
| a. Weakness in any of your arms, hands, legs, or feet: | Yes | No |
| b. Back pain: | Yes | No |
| c. Difficulty fully moving your arms and legs: | Yes | No |
| d. Pain or stiffness when you lean forward or backward at the waist: | Yes | No |
| e. Difficulty fully moving your head up or down: | Yes | No |

- | | | | |
|--|-------------|-----|----|
| f. Difficulty fully moving your head side to side: | (continued) | Yes | No |
| g. Difficulty bending at your knees: | | Yes | No |
| h. Difficulty squatting to the ground: | | Yes | No |
| i. Do you currently have any of the following musculoskeletal problems? | | Yes | No |
| j. Climbing a flight of stairs or a ladder carrying more than 25 lbs: | | Yes | No |
| k. Any other muscle or skeletal problem that interferes with using a respirator: | | Yes | No |

Employee Signature

Date

Part B:

Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

- | | | |
|---|-----|----|
| 1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: | Yes | No |
|---|-----|----|

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest or other symptoms when you're working under these conditions:	Yes	No
--	-----	----

- | | | |
|---|-----|----|
| 2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: | Yes | No |
|---|-----|----|

If "yes," name the chemicals if you know them: _____

- | | | |
|--|-----|----|
| 3. Have you ever worked with any of the materials, or under any of the conditions, listed below: | | |
| a. Asbestos: | Yes | No |
| b. Silica (e.g. , in sandblasting): | Yes | No |
| c. Tungsten/cobalt (e.g., grinding or welding this material): | Yes | No |
| d. Beryllium: | Yes | No |
| e. Aluminum: | Yes | No |
| f. Coal (for example, mining): | Yes | No |
| g. Iron: | Yes | No |
| h. Tin: | Yes | No |
| i. Dusty environments: | Yes | No |
| j. Any other hazardous exposures: | Yes | No |

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

- | | | |
|---|-----|----|
| 7. Have you been in the military services? | Yes | No |
| If "yes," were you exposed to biological or chemical agents (either in training or combat): | Yes | No |

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes No
 If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters:	Yes	No
b. Canisters (for example, gas masks):	Yes	No
c. Cartridges:	Yes	No

11. How often are you expected to use the respirator(s)?

a. Escape only (no rescue):	Yes	No
b. Emergency rescue only:	Yes	No
c. Less than 5 hours per week :	Yes	No
d. Less than 2 hours per day :	Yes	No
e. 2 to 4 hours per day:	Yes	No
f. Over 4 hours per day:	Yes	No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour):	Yes	No
--	-----	----

If "yes," how long does this period last during the average shift: _____hrs. _____mins.

Examples of a light work effort are **sitting** while writing, typing, drafting, or performing light assembly work; or **standing** while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour):	Yes	No
--	-----	----

If "yes," how long does this period last during the average shift: _____hrs. _____mins.

Examples of moderate work effort are **sitting** while nailing or filing; **driving** a truck or bus in urban traffic; **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour):	Yes	No
--	-----	----

If "yes," how long does this period last during the average shift: _____hrs. _____mins.

Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; **shoveling; standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes No

If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes No

15. Will you be working under humid conditions:

Yes No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, and security):

Employee Signature

Date