Respiratory Protection Program  
Tufts University

Your health depends upon breathing clean air. In some shops, clean rooms, labs, medical facilities, and maintenance environments the air may at times become contaminated with materials that are hazardous to breathe. The Tufts Respiratory Protection Program establishes guidelines for the use of respirators to protect the health of employees who, during their normal duties, are or could be exposed to hazardous substances or atmospheres.

**Hazards to the Respiratory System**

Your body's respiratory system is constantly working to cleanse and purify the air you breathe. Some occupational activities and/or environments require the extra protection of equipment specifically designed to protect against hazards that may enter the body through the nose and mouth when a person breathes. Like clean air, many of these hazards are invisible and odorless. Breathing (or respiratory) hazards include dusts, fumes, mists; gases and vapors; oxygen deficient atmospheres and temperature extremes. Knowing the characteristics of each hazard helps to understand why respiratory protection is so important.

**Dusts, Fumes, and Mists** - are tiny particles that float in the air. Dusts are formed when solid materials are broken down in activities such as sanding, grinding, or crushing. Fumes occur when metal is melted, vaporized, then quickly cooled, creating very fine particles that drift in the air - welding and furnace work are likely to produce fumes. Mists are tiny liquid droplets usually created by spraying, mixing, or cleaning activities. Mists may be a combination of several hazardous ingredients. When hazardous dusts, fumes, or mists are breathed in, they become trapped in the respiratory system causing irritation. Short-or long-term health problems may result, even death.

**Gases and Vapors** - are invisible contaminants mixed in the air. Gases are substances that become airborne at room temperature. Gases are often produced by chemical processes and high-heat operations. They drift quickly and undetected from their source. Vapors are formed when liquids or solids evaporate, typically occurring with solvents, paints, or refining activities. Breathing hazardous gases or vapors irritates the respiratory system, causing either short- or long-term health problems or even death.

**Oxygen Deficiency** - a lack of oxygen in the air. Oxygen deficiency can be caused by chemical reactions, fire, or displacement by other gases. In confined spaces, where ventilation is very limited or non-existent, aerobic bacterial growth and oxidation of rusting metals can also cause an oxygen deficient atmosphere. Oxygen comprises only a small percentage, about 21%, of the air we breathe. Yet, when levels of oxygen fall below 19.5% (minimal acceptable level), life-threatening health problems begin to occur very quickly. Oxygen deficiency is a very serious situation that can cause loss of consciousness or death in minutes.

**Temperature Extremes** - extremely hot or extremely cold air can damage the respiratory system, depending on the length of exposure. Activities involving high-heat furnaces and walk-in freezers are subject to this hazard.

**How the Program Works**

Tufts Respiratory Protection Program is administered by the Office of Environmental Health & Safety (EH&S). The program endeavors to control occupational diseases caused by breathing contaminated air.

Job sites and tasks where workers may be exposed to breathing hazards are carefully evaluated by EH&S staff using air-monitoring and measuring devices to determine what type of protection is needed, if any. EH&S has four approaches to achieving respiratory protection: The first method is substitution, use a less toxic material, whenever possible. The second method is local engineering controls such as fume hoods or exhaust systems - the most effective and efficient means of protecting employees from on-site breathing hazards. Thirdly EH&S recommends administrative controls; these include reassessing the task to see if exposure can be minimized or eliminated, and the possibility of job rotation to reduce the exposure of any one person to...
acceptable levels. Fourth, when the first three methods are not feasible, not yet in place, or cannot provide adequate protection, personal protection equipment is necessary.

Employees requiring respirators are medically screened to identify any health reason that might prohibit or limit their use of a respirator. When medical clearance is received, the employee is fit tested to find the right size and type of mask for them. After a suitable respirator has been selected, they will learn how to properly use, clean, and maintain their equipment. Annual re-evaluations assure that the program is working.

**Who Must Wear Respiratory Protection Equipment?**

Respiratory protection equipment is required:

- For activities that cannot be safely controlled by substitution, engineering methods or administrative means
- When the working atmosphere is or may be oxygen deficient <19.5%, Tufts University does not allow employees into this type of atmosphere.
- When airborne or toxic materials could exceed acceptable limits. Known toxic materials only.
- For emergency use when loss of life or serious property loss or damage may be involved

Only those persons who have been designated by their supervisor, principle investigator, or EH&S as being required to utilize respiratory protection equipment, and who have been medically approved, properly fitted, and trained in its use are authorized to utilize such equipment.

**How Do You Obtain Respiratory Protection Equipment?**

Contact the Office of Environmental Health & Safety at (6-3615). A trained staff member will evaluate your workplace activities to determine the most effective and efficient means of respiratory protection for your circumstances. A respirator may not be necessary. If a respirator is indicated, you must satisfactorily complete a pulmonary function tests, medical history questionnaire, respirator fit testing, and training on the use and limitations of the equipment. When these qualifications have been met, EH&S will recommend to the department the purchase or use of a new or cleaned and reconditioned respirator. These same requirements must be repeated annually. EH&S will assist in recommendations for the proper equipment to be used.

**Medical History and Pulmonary Function Test**

Each employee whose duties require the use of a respirator will be referred for medical evaluation prior to their fit appointment. They will be asked to fill out a Medical History Form and may be required to satisfactorily complete a pulmonary function test before being fitted with a respirator. The Medical History Form and the pulmonary function test results will be reviewed by an occupational health physician for medical approval. Employees who are medically denied will not be issued a respirator, and an additional referral to the occupational health physician may be required.

**Education and Training**

Before a respirator is recommended, EH&S provides instruction on the need for respiratory protection. Training includes a complete description of the equipment issued: its purpose and limitation, and how it works; how to wear and check the respirator for a good fit each time it is used; cleaning, storing, and maintaining it; how to inspect the respirator for damage or wear and recognize when it needs to be replaced. Pertinent State and Federal regulations, as well as campus policies, will also be discussed.

The length of these instruction sessions vary with the type of equipment being described.
Procurement of Respirators
EH&S evaluates and approves the purchase of all respiratory equipment before it is used. Selection is dependent upon the type and concentration of the contaminant. Each respirator issued is equipped with a filter and/or cartridges for the specific hazard to be protected against. Respiratory protection equipment such as powered air-purifying respirators may only be purchased upon approval by EH&S. Emergency needs are also processed through EH&S.

Only a properly fitted respirator can help protect you. Face shape, facial hair, eyeglasses, missing dentures, and certain skin conditions can all affect respirator fit. Choosing a respirator that both fits properly and provides the protection required for a specific type of contaminant is essential. Each employee who is required to use respiratory protection equipment (with the exception of disposable dust/mist masks if used only for comfort against nuisance dusts) must be fit tested before any equipment can be issued.

Fit Testing

The employee is asked to perform a series of exercises that attempt to dislodge or create a leak in the seal between the face and the facepiece:

- **Normal Breathing (NB)** - In a normal standing position, without talking, the test subject shall breathe normally for at least one minute.
- **Deep Breathing (DB)** - In a normal standing position, without talking, the test subject shall breathe slowly and deeply, taking care so as not to hyperventilate.
- **Turning Head Side to Side (SS)** - Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
- **Moving Head Up and Down (UD)** - Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).
- **Talking (T)** - The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.
- **Grimace (G)** - The test subject shall grimace by smiling or frowning.
- **Bending Over (B)** - The test subject shall bend at the waist as if he/she were to touch his/her toes.
- **Jogging in Place (J)** - The test subject shall jog in place.
- **Normal Breathing (NB)** - Same as the first exercise.

Each test exercise shall be performed for one minute except for the grimace which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become uncomfortable, another model of respirator shall be tried.

Employees who were eyeglasses will be tested while wearing them. *Contact lenses are prohibited while using certain respiratory equipment and contaminants.*

The test will not be conducted if there is any hair growth between the skin and the face-mask sealing surface.

Fit Testing Requirement
Fit testing must be repeated at least annually. In addition, because the seal of the respirator may be affected, fit testing must be repeated immediately if the employee has:

1. a weight change of 20 pounds or more
2. significant facial scarring in the area of the facepiece seal
3. significant dental changes (i.e., multiple extractions without prosthesis, or dentures)
4. reconstructive or cosmetic surgery
5. any other condition that may interfere with facepiece sealing

Records and Documentation
After fitting has been satisfactorily completed, the employee can be certified to wear the particular type of respirator identified. Fit test and training records will be filed with EH&S.

Operating Procedures and Limitations for Fit Testing

Disposable Dust Masks
Limitations - Disposable dust masks offer very little protection due to poor sealing characteristics. Since they provide no protection against gases and vapors and supply no oxygen, they cannot be used in oxygen deficient areas. Neither can they be worn for protection against toxic contaminants, nor when facial hair extends under the facepiece sealing area.

Air Purifying Half Mask Respirators
Availability and Types for Use - Reusable half-masks are the most commonly used type of respirator. Half-mask respirators are air-purifying devices that cover the nose, mouth, and chin. The facepiece is equipped with either cartridges that capture gases and vapors, or filters which capture particles, purifying the air as the user breathes. Each cartridge or filter is made for a specific gas, vapor, or particle hazard, with some offering protection against a combination of hazards.

Limitations - Since this type of respirator does not supply air, it cannot be used in oxygen deficient atmospheres, in IDLH atmospheres, or in confined spaces. It can only be used for protection against the contaminants listed on the cartridge or the manufacturers cartridge selection chart at known concentrations. The half-mask has a protection factor of 10, only allowing the wearer to be exposed to a specific contaminant at concentrations less that 10 times the allowable limits (TLV or PEL). It cannot be used against natural gas or vapors with poor warning properties. The wearer should leave an area immediately if the smell of gas or vapor is detected inside the mask or if the breathing resistance increases.

The half-mask respirator cannot be worn when facial hair extends under the face-mask sealing area.

Procedure - To put on and adjust a half-mask:

1. Inspect your respirator: Make sure both inhalation and exhalation valves are inside the mask. Check for any signs of wear or deterioration.
2. Hold the mask so the narrow nose-cup points upward.
3. Grasp both of the lower mask straps and hook them behind the neck; place the top cradle straps on the top of and behind the head.
4. Before using your respirator, check for leaks by performing both positive- and negative pressure checks:

Positive-Pressure Check - Block the exhaust port(s) with the heel of your hand and exhale with enough force to cause a slight positive pressure inside the facepiece. If the facepiece bulges slightly and no air leaks between the face and facepiece are detected, a proper fit has been obtained.
**Negative-Pressure Check** - Block the intake port(s) with your palms and inhale for five to ten seconds. If the facepiece collapses slightly and no air leakage is detected between your face and the facepiece, a proper fit has been obtained.

**Availability and Types For Use** - Full face-mask respirators provide more protection than half-mask because their shape allows a better mask-to-face seal. The addition of a facepiece protects the eyes from irritating chemicals, splashes, or particulate atmospheres. Full face-masks are equipped with selective types of air-purifying cartridges or filters - dependent upon the protection required - to capture dust, mists, fumes, or gas and vapor hazards.

**Limitations** - Air-purifying full face-masks have the same limitations for use as half-mask respirators. Since they do not supply air, they cannot be used in oxygen deficient atmospheres or temperature extremes, in IDLH atmospheres, or in confined spaces. The full-mask has a protection factor of 50, only allowing the wearer to be exposed to a specific contaminant at concentrations less than 50 times the allowable limits (TLV or PEL). Contact lenses may not be worn unless specifically approved by EH&S.

Standard eyeglasses interfere with the mask-to-face seal; therefore, the wearer should obtain an additional pair of prescription lenses attached to a spectacle mount kit for installation into the mask.

**Procedure** - To put on a full face-mask:

1. Inspect your respirator. Check for any signs of wear or deterioration. Make sure the appropriate cartridges or filters are securely attached.
2. Loosen all straps; pull the harness over the head and place the chin in the chin cup.
3. Pull the head harness well down on the back of the head.
4. Tighten the harness gently, starting with the bottom straps and then the middle and top straps.
5. Before using your respirator, check for leaks by performing the positive- and negative pressure checks described in the half-face section of this booklet.
6. Return the respirator to EH&S for maintenance or for replacement if it becomes damaged or shows signs of wear.

**Powered Air Purifying Respirators (PAPR); Loose & Tight Fitting Facepieces**

**Availability and Types For Use** - Powered Air Purifying Respirators (PAPR) are belt-mounted, or mask/head-mounted PAPR, battery-operated blower respirators. Contaminated air is filtered through a cartridge, filter, or cartridge/filter combinations, while a constant supply of purified air is supplied to the facepiece. Since the blower has rechargeable batteries, it can be reused with the addition of a freshly charged battery or after the batteries have been recharged. Tight and loose fitting facepieces are approved by NIOSH.

**Limitations** - A PAPR with a belt-mounted blower and selected cartridges cannot be used in oxygen-deficient atmospheres or in IDLH atmospheres. The batteries should be fully charged before using the blower. The protection factor varies depending upon the face piece. It cannot be used in emergency situations.

**Procedure** - To use a powered air purifier:

1. Inspect your equipment. Check for any signs of wear or deterioration. Make sure the appropriate cartridge(s)/filter(s) are securely attached.
2 Mount the unit on your waist and adjust the belt until it is comfortable.

3 Put on the face mask.

Emergency Use of Respirators

Emergency Situations
An emergency can be defined as "an unforeseen combination of circumstances that calls for immediate action". Respiratory hazards often occur during emergencies when fire fighters or other emergency service personnel need immediate entry into a fire or accident scene. Tufts employees do not respond in this type of emergency. We will rely on specially trained local fire department or other outside emergency personnel.

Reporting Emergency Situations
Notify campus police at 6-6911 following any incident.

Maintenance and Care of Respirators

Respirator Maintenance and Care--The User
Primary responsibility for maintaining the respirator in proper and clean condition rests with the employee.

- Before each use, inspect your equipment for defects, signs of wear, or damage. Make sure it is clean before you put it on.
- Disposable N-95 respirators can not be re-used
- P+R rated filtering face-pieces can only be used in Oily environments.
- Visually inspect the area between the cartridge and the facepiece to make sure the cartridge is seated correctly - it will lie flush against the facepiece. cartridge is seated correctly - it will lie.
- After each use, clean and disinfect your respirator with safety equipment wipes. Clean the inside first, and then the outside, so exterior contaminants don’t get inside the mask. Protect your respirator and cartridges/filters from dirt and damage by storing them separately in sturdy plastic bags. Write your name on the bag.
- Store your respirator in such a way that no part of it will be stretched, bent, compressed, or exposed to temperature extremes - if its shape becomes distorted, it may develop leaks.
- The rule-of-thumb for replacing cartridges is: if you detect any odor or taste of contaminant inside your mask, or if you experience difficulty in breathing due to blockage of particulate on the filters, it is time to change cartridges/filters. For some employees, this may be difficult to determine, so EH&S recommends changing cartridges/filters after 8 hours of total use. The life of a cartridge depends on three factors: the contaminant concentration, length of exposure time, and the user's exertion or breathing rate. Write the date on new cartridges/filters so you’ll know when you started using them.

If you have questions about respiratory hazards in your workplace, or about the respiratory protection equipment you have been issued, call EH&S.

Program Responsibilities

University Policy
It is the policy of Tufts University to maintain, insofar as it is reasonably within the control of the University to do so, an environment that will not adversely affect the health, safety, and well-being of students, employees, visitors, and neighboring human populations.
Because of the potential risks involved from exposure to hazardous substances in the workplace, Tufts provides necessary respiratory protection equipment, and develops operational procedures for those employees who are required to use the equipment. The Tufts Respiratory Protection Program establishes procedures and requirements to meet various enforcing agencies regulations for use of respiratory protection equipment, and provides the necessary health and safety protection to those persons falling within the jurisdiction of the program.

**Principal Investigator, Supervisor, or Division Head**
Each person in charge of a research project or other activity where respiratory protection equipment is used is responsible for:

- Identifying, with the assistance of EH&S, those employees who may need respiratory protection equipment; scheduling them for medical evaluation, fit testing, and training in the proper use and maintenance of the equipment.
- Requesting assistance from EH&S in evaluating operations that may present health and safety hazards requiring the use of a respirator.
- Informing EH&S for approval before assigning known or suspected medically restricted employees to jobs requiring the use of respirators.
- Enforcing the use of respiratory protection equipment and other requirements when applicable.
- Budgeting for the purchase and maintenance of approved respiratory protection equipment

**Employee Responsibilities**
Any Tufts employee or person enrolled in the Respiratory Protection Program for use of respiratory equipment is responsible for:

- Using only those brands and types of respirators for which they have been trained and fitted by EH&S.
- Informing their supervisor of any personal health problems that could be aggravated by the use of respiratory equipment (such as asthma, allergies, or high blood pressure, heart conditions or any changes in facial characteristics that may influence proper respiratory fit).
- Guarding against damage and ensuring respirators are not disassembled, modified, or otherwise altered in any way other than by the changing of respirator cartridges or filters.
- Reporting any observed or suspected malfunctioning respirator to EH&S.
- Updating their respirator use certification annually by completing the fit testing, and training.

**EH&S Responsibilities**
EH&S is responsible for the following functions:

- Providing an information clearing house for evaluating all respiratory equipment needed and used by Tufts employees.
- Providing instruction on the need for respiratory protection; criteria for selecting respirators; and respirator fitting, use, and maintenance.
- Recommending respiratory protection equipment and providing the following additional services:
  - Help departments discharge their compliance responsibilities related to the initial or annual, and other required fit tests for employees who use respiratory equipment.
  - Coordinating with Employee to obtain findings from the pulmonary function test and the Medical Clearance Form of respirator users. See Appendix D
- Overseeing inspections for respiratory equipment usage, maintenance, and storage.
- Maintaining records of fit test results, training classes, and medical approvals.

Appendix A

Hazard

Oxygen Deficiency
- Atmosphere immediately dangerous to life or health
  - Self-contained breathing apparatus
    - Full face-mask with pressure-demand regulator
  - Air-purifying respirator
    - Full or half face-mask with chin or chest canister
    (not approved for oxygen-deficient atmosphere)

Toxic Containment
- Radioactive gases or vapors NOT immediately dangerous to life or health
  - Air-line equipment
    - Full face-mask with constant flow valve & pressure-demand regulator with escape bottle
  - Air-line respirator
    - Full face-mask with chin or chest canister
    (not approved for oxygen-deficient atmosphere)
- Atmosphere NOT immediately dangerous to life or health except radioactive gases or vapor
  - Air-supplied respirator
    - Full face-mask with chin or chest canister
    (not approved for oxygen-deficient atmosphere)
Appendix B

1. **Respirator Fitting and Training** - Contact EH&S Respiratory Program directly (6-3615) to schedule an appointment.

2. **EH&S Evaluation** - EH&S personnel will determine if the use of a respirator is necessary by evaluating the work process. This may be evaluated by one or a combination of the following methods:
   - Consulting with the supervisor.
   - Interviewing the employee.
   - Observing the work operation.
   - Collecting air samples during the work process to assess airborne exposure to any toxic material. Respirators will be required for all operations where the concentration is in excess of the limits specified by the State or Federal OSHA, American Conference of Governmental Industrial Hygienists, or as deemed necessary by EH&S.
   - Evaluating existing or alternative engineering controls.

3. **Medical History Questionnaire and Pulmonary Function Test**

4. **Respiratory Protection Training** - The purpose of this training is to inform the user of the limitations, use, and care of the respirator. Anyone requiring a respirator, including all disposable respirators must be informed of the limitations of the masks.

5. **Respirator Fit Testing** - EH&S or its designee, can fit test when all the above elements are met. A respirator that provides the best comfort and protection will be issued by individual departments. Upon completion of the three requirements, a respirator, cartridges, Respirator Certification Card.

6. **Respirator User's Responsibilities**
   - Update your respirator qualification status annually.
   - Reschedule for a future date if you cannot attend your scheduled appointments. Return your respirator to your department when you end your employment at Tufts or when you no longer need it.
Office of Environmental Health & Safety
Respirator Request Form
SAMPLE

Please fill out Section A only.

A. REQUEST FOR EMPLOYEE RESPIRATOR ASSIGNMENT
Name _______________________________________________________________
Respirator # __________ Employee # _________________________________
Dept. ______________________________Location ___________________________
Address ____________________________Phone ____________________________
Supervisor _________________________ Recharge # __________________________
Date ______________________________
List agent (amount) & process for which respirator is needed:
_______________________________________________________________________

B. MEDICAL SCREENING (1)
Has the above Tufts employee been given medical approval for the use of respiratory protection by a physician? (Occupational Health consultant can approve.)
Date of the Test ________________________ YES _____ NO _____

C. TRAINING
Air Purifying Respirator Other
_______________________________________________________________________

D. SELECTION & FITTING
Approved Respirator
Fit Test
_______________________________________________________________________
The employee has been trained and fitted in the use of the respirator(s) listed above.
F. CERTIFICATION CARD ISSUED?
YES _____ NO _____ Date _______________

NOTE:
1. Attach appropriate documents from medical screening.
2. Attach fit test results.
### TUFTS ENVIRONMENTAL HEALTH AND SAFETY
Respiratory Protection

Respirators shall be selected and used in accordance with the EH&S Respiratory Protection Manual.

Facial hair which interferes with face piece-to-face seal voids approval to use respirators.

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#### REMEMBER:

1. Use only the brand and model of mask fitted.
2. Perform Negative/Positive fit-check of respirator each time before use.
3. For half- and full-face masks, use the cartridges recommended for the contaminant involved.

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**Appendix D**

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### Maintenance Records

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This respirator is assigned to:

________________________________

and has been trained, fitted, and approved to use a respirator.

Type: __________________________
Expiration Date: __________________
Department: ______________________
Cartridges: ______________________
For: _____________________________
Fit Test: _________________________
Date: ____________________________
Signature: _______________________
Tufts Respiratory Protection Program
Office of Environmental Health & Safety
Respirator Record
SAMPLE

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Appendix F

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<td>Acid Gas Cartridge</td>
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<tr>
<td>Yellow</td>
<td>Organic Vapor and Acid Gas Cartridge</td>
</tr>
<tr>
<td>Green</td>
<td>Ammonia and Methylamine Cartridge</td>
</tr>
<tr>
<td>Olive Green</td>
<td>Organic Vapor and Formaldehyde Cartridge</td>
</tr>
<tr>
<td>Purple (Magenta)</td>
<td>Dust, Fumes, Mists, Asbestos, Radionuclides and Highly Toxic Particulates (HEPA) Filter</td>
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<tr>
<td>Black/Purple</td>
<td>Organic Vapor and Hepa Combination</td>
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<td>Green/Purple</td>
<td>Ammonia/Methylamine and Hepa Combination</td>
</tr>
<tr>
<td>Olive Green/Purple</td>
<td>Organic Vapor/Formaldehyde and Hepa Combination</td>
</tr>
<tr>
<td>Pre-Filters</td>
<td>Dusts, Fumes &amp; Mists or Pesticides or Paints</td>
</tr>
</tbody>
</table>

Appendix G

Tufts Respiratory Protection Program
Office of Environmental Health & Safety
Right-To-Know Form
SAMPLE

Instruction Given:

( ) Slide/Tape Cassette
( ) Oral Training
( ) Video
( ) Positive and Negative Fit-check
( ) Adjustment
( ) Inspection
( ) Maintenance
( ) Cartridge Care & Replacement
( ) Cleaning
( ) Storage

Test Results:

( ) Pulmonary Function___________
( ) Fit test date_______________
( ) Respirator________________

PF___ Max For______________

Following is a partial list of gaseous materials for which chemical cartridge respirators should not be used for respiratory protection regardless of concentration or time of exposure. Contact EH&S for further information on specific materials.

Arsine       Hydrazine       Methyl bromide       Nitromethane       Stibine
Bromine      Hydrogen cyanide Methyl chloride       Ozone             Sulfur chloride
Carbon monoxide  Hydrogen fluoride       Nickel carbonyl       Phosgene       Toluene Diisocyanate
Dimethylaniline  Hydrogen selenide  Nitrobenzene  Phosphine  Vinyl chloride
Dimethyl sulfate  Hydrogen sulfide  Nitrogen oxides  Phosphorus oxychloride  Vinylidene chloride
Ethylene Oxide  Methyl alcohol  Nitroglycerin  Phosphorus trichloride

I understand that a cartridge-type respirator must not be used in an oxygen-deficient atmosphere (< 19.5%).

**ORGANIC VAPOR**
For respiratory protection against not more than 0.1 percent **ORGANIC VAPORS** by volume. **Do not wear** for protection against organic vapors with poor warning properties or those which generate heat of reaction with sorbent material in the cartridge. Maximum use concentration will be lower than 0.1 percent where that concentration produces atmospheres immediately dangerous to life or health.

**ACID GAS**
For respiratory protection against not more than 10 ppm **CHLORINE**, 10 ppm **FORMALDEHYDE**, 50 ppm **HYDROGEN CHLORIDE** or 50 ppm **SULPHUR DIOXIDE**. **Do not wear** in atmospheres immediately dangerous to life or health.

**ORGANIC VAPOR/ACID GAS**
For respiratory protection against not more than 1000 ppm **ORGANIC VAPORS**, 10 ppm **CHLORINE**, or 50 ppm **HYDROGEN CHLORIDE** or **SULPHUR DIOXIDE**. **Do not wear** in atmospheres immediately dangerous to life. **Do not wear** in organic vapors with poor warning properties or which generate high heat of reaction with sorbent materials in the cartridge.

**DUST AND MIST**
For respiratory protection against **DUSTS** and **MISTS** having a TWA not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot. Not for use in atmospheres containing toxic gases or vapors.

(TWA = Time-Weighted Average; ppm = parts per million)

**OTHER**
Your approval to wear a respirator expires no later than ___________. After this date, you must be retrained and refitted by EH&S.

*For DUST and MIST protection, add Prefilter and I Cover.

By my signature, I acknowledge that I have received the indicated instruction in the fitting, use, storage, and care of this respirator. I have read the above material which pertains to the cartridges I have received and I understand that the cartridges are to be used only for the purposes indicated. I have discussed the intended use of this respirator with an EH&S representative. I have been given an opportunity to ask questions about respiratory protection and I understand the information that has been provided.

[Please Print] First Name, Last Name  Signature:
IF YOU HAVE QUESTIONS ABOUT YOUR RESPIRATOR OR ITS PERFORMANCE, PLEASE CONSULT YOUR SUPERVISOR OR CALL EH&S AT 6-3615