



Hudson Valley Community College Respiratory Protection Program

The purpose of this program is to establish a written program covering the use of respiratory protection in occupational settings for staff and students at HVCC in accordance with the OSHA Respiratory Protection Standard, 1910.134. Respiratory protection is one of several methods available to minimize or reduce exposure of staff and students to airborne contaminants. Respirators should only be used when engineering and/or administrative controls are not able to reduce airborne contaminant levels to safe levels, or as an added measure of protection in certain situations.

Respirators are only effective when selected and used properly. This program outlines all procedures for proper selection, use and maintenance of respirators. Specific information on respirator users, selection, training, medical, etc. is maintained in the Office of Environmental, Health & Safety (EHS).

The steps for obtaining a respirator in accordance with this program are attached in Appendix A.

Responsibilities

The program administrator is Patricia Watt, Director of Environmental, Health & Safety (EHS) for HVCC and will be responsible for the following:

1. Development of this respiratory protection program
2. Proper selection of respirators based on the occupational setting
3. Conducting fit testing and training
4. Validating appropriate medical evaluations are conducted and keeping records of the physician's medical recommendation with regard to wearing a respirator.
5. Procedures for regularly evaluating the effectiveness of the program and updating this program.
6. Administering the occupational medical screening program.

Supervisors in each department where respirators are used are responsible for the following:

1. Ensuring employees are wearing the appropriate respirator during work tasks requiring the use of respirators

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2. Notifying EHS so that the appropriate medical, fit testing and training takes place
3. Ensuring employees have respirators available where required and that respirators are cleaned, stored and inspected properly

Employees who are required to wear respirators are responsible for:

1. Keeping appointments for medical evaluation, fit testing and training.
2. Following instructions on proper use, care, storage and maintenance of respirators

Selection of Respirators

In all circumstances where respirators may be needed for protection from airborne contaminants, the selection of the respirator will be made by EHS in consultation with the affected staff/students and their supervisors/faculty.

Contact EHS (p.watt@hvcc.edu, 629-7163) to schedule a workplace evaluation if respirators are needed.

This includes voluntary use of disposable respirators (sometimes referred to as dust masks).

EHS will take the following factors into account when selecting respirators:

- The potential respiratory hazards, its chemical state, physical form, toxicity, duration and frequency of exposure (this may involve air sampling to determine airborne concentrations)
- Based on all relevant factors, EHS will select the appropriate NIOSH certified respirators. Current OSHA and NIOSH decision logic documents will be utilized in making final selections
- A sufficient number of respirator models and sizes will be made available to obtain a correct fit for each user.

Medical Evaluation

After EHS has determined the need for respirators, the respirator users will be referred to the current contractor providing occupational health services for the College¹. The contractor will provide an evaluation in accordance with the OSHA requirements, and the evaluation will be carried out by a Physician or Other Licensed Health Care Professional (PLHCP), as defined by the OSHA respirator standard. A respirator medical evaluation will be scheduled through the EHS office. EHS will complete and send the “Information to the PLHCP” form (Appendix B) when scheduling the evaluation.

¹ Employees may use a PLHCP of their own choosing as long as all the same procedures are followed as described in this program. The EHS office must be provided with the PLHCP’s written determination after the respirator evaluation is completed.

EXCEPTION: those voluntarily wearing a filtering facepiece (dust mask) where the need for respiratory protection is not required based on a potential hazard are not required to undergo medical evaluation. Go to the Training section of this program for requirements in this circumstance.

The medial evaluation may consist of the medical questionnaire provided in the OSHA respirator standard (Appendix A) or an initial medical exam. If using the questionnaire, a medical exam must be provided for any individual who gives a positive response to any question 1 – 8, Section 2, or any individual who demonstrates the need for an exam.

The PLHCP's written recommendation regarding the user's ability to wear a respirator will be provided to EHS. Appendix C or equivalent may be used for this purpose. All other confidential medical records pertaining to this evaluation will be kept by the contracted health care provider.

The PLHCP will include in the recommendation the frequency of additional medical evaluations for each individual. This information will be tracked by EHS and respirator users will be notified when medical evaluations, fit testing or training is due to be repeated.

Respirator users may also request additional medical evaluation if they report medical signs or symptoms related to the ability to use a respirator. If during a fit test it is warranted, or if a change occurs in workplace condition that increases the physiological burden placed on the individual, additional medical evaluation may also be requested.

Fit Testing

After EHS receives the PLHCP's written determination, a fit test will be scheduled by EHS.

The individual will be fit tested with a respirator that is the same make, model, style and size that they will be using, in accordance with all of the fit testing procedures outlined in the OSHA respirator standard and Appendix A. Generally qualitative fit testing will be performed. The EHS department will make a determination if quantitative fit testing is desired or necessary and will make arrangements for such testing.

EXCEPTION: those voluntarily wearing a respirator where the need for a respirator is not required based on a potential hazard, are not required to undergo fit testing. Go to the Training section of this program for requirements in this circumstance.

Fit test records will be kept by the EHS department. Fit testing will be repeated annually or whenever the respirator user changes to another respirator type or size or has a change in facial structure warranting a new fit test.

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Use of Respirators

Specific procedures for the proper use of the respirator issued will be covered during training of the individual and are included in Appendix E of this program.

The workplace where respirators are used will be periodically evaluated by the supervisor and EHS. Any factors that may affect respirator usage will be evaluated.

Maintenance and Care of Respirators

Specific procedures for the care and maintenance of the respirator issued will be covered during training and is included in Appendix E.

Training

Training will be conducted by EHS at the time of fit testing. This will give the employee an opportunity for hands on training to don, doff and wear the respirator in a test environment. Training and fit testing will be repeated annually for individuals who are required to wear respirators

For individuals who are voluntarily wearing disposable respirators, training will be provided by EHS in accordance with 29 CFR 1910.134 Appendix D.

Records of fit testing and training will be kept by EHS.

Appendix A

Steps in Obtaining a respirator at HVCC

1. If you or your supervisor think a respirator (including a disposable N95 respirator or dust mask) is needed, contact the Director of Environmental, Health & Safety (EHS) at 7163 to schedule a workplace evaluation.
2. If a respirator is warranted, EHS will schedule a medical evaluation with the college's occupational healthcare provider.
 - a. If voluntary use of a disposable respirator is all that is needed, no medical evaluation is needed. EHS will provide training and written instructions on the use and care of the disposable respirators.
3. The medical determination on whether the individual can use a respirator will be forwarded to EHS. A fit testing and training will then be scheduled by EHS. If a certain type respirator is needed, it will be purchased by the department at this time.
4. After fit testing and training, the respirator user will be issued a respirator and instructions on its care and use.
5. EHS will track respirator users and notify the employee and supervisor when annual fit testing and refresher training is due.

Appendix B

OSHA Respirator Medical Evaluation Questionnaire

(To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.)

To the respirator user:

Can you read (circle one): Yes/No

Part A. Section 1. (Mandatory) The following information must be provided by every individual who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male/Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
 - a. _____ N, R, or P disposable respirator (filter-mask, non- cartridge type only).
 - b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one): Yes/No
If "yes," what type(s): _____

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Part A. Section 2. (Mandatory) Questions 1 through 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 (fits): 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?

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- 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

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?

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- 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: Yes/No
- g. Difficulty bending at your knees: Yes/No
- h. Difficulty squatting to the ground: Yes/No
- i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
- j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

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:

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- 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) (circle "yes" or "no" for all answers that apply to you)?:

- a. Escape only (no rescue): Yes/No
- b. Emergency rescue only: Yes/No

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- 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

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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, security):



Information to the Physician or Licensed Healthcare Professional Performing Respiratory Medical Evaluation

Respirator user name:

Job title:

Department:

Location:

1. Work tasks when respirator needed:
2. Type of respirator to be used:
3. The duration and frequency of respirator use:
4. The expected physical work effort:
5. Additional protective clothing and equipment to be worn:
6. Temperature and humidity extremes that may be encountered:

Completed by : _____ Date_____

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Medical Determination
Following a Respiratory Medical Evaluation
(to be completed by physician or licensed healthcare professional)

Respirator user name:

Date of medical evaluation:

1. Any limitations on respirator use related to the medical condition of the individual, or relating to the workplace conditions in which the respirator will be used:

2. The need, if any, for follow up medical evaluations (if yes, please state frequency)

I have received and read the “Information to the PLHCP” issued by Patricia Watt at Hudson Valley Community College.

I have provided a copy of this written recommendation to the patient on the day of the medical evaluation.

Signature of person performing the respiratory medical evaluation

Return this form to: Patricia Watt, Hudson Valley Community College, 80 Vandenberg Avenue, Troy, NY 12180

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Appendix E

Respirator Training Information Use, Care and Maintenance of Respirators

Section 1 – Disposable Respirators (N95, P95, N99, N100, P100)

Use of disposable respirators

Only use this respirator for the work task evaluated by EHS and your supervisor. This respirator is not intended for use in the following situations:

- Oxygen deficiency
- Where concentrations of contaminants are immediately dangerous to life and health
- For protection against asbestos, gases, vapors or spray painting

Since it is important to obtain an effective seal against the face, the respirator user must be clean shaven in the area where the respirator contacts the face. If the respirator has a valve, facial hair must not come in contact with the valve.

If wearing glasses or goggles or other personal protective equipment, ensure that the straps of the respirator are UNDER these items. The straps must lay flat on the head to maintain a good fit.

If breathing becomes difficult or you feel dizzy or nauseous or have other symptoms, leave the work area immediately and take off your respirator. Report this to your supervisor and seek medical attention if necessary.

Never alter the respirator in any way. Do not allow others to wear your respirator.

Fitting instructions

1. Hold the respirator in hand with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.
2. Press the respirator firmly against your face with the nosepiece on the bridge of your nose.
3. Stretch and position the top headband high on the back of your head, above the ears. Stretch the bottom band over the head and position below your ears.

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4. Adjust the respirator for comfortable fit. Using both hands, mold the metal nose piece to the shape of your nose.
5. To test fit, cup both hands over the respirator. If the respirator does not contain an exhalation valve, exhale vigorously. If the respirator contains an exhalation valve, inhale vigorously. If air flows around your nose, tighten the nosepiece; if air leaks around the edges, reposition the straps to fit better.
6. Change respirator immediately if breathing becomes difficult or respirator becomes damaged or distorted, or a proper face fit cannot be maintained.
7. If one of the straps breaks, immediately leave the work area and obtain a new respirator. Do not attempt to repair the respirator yourself.

Taking Off the respirator:

1. Remove the respirator and discard in the appropriate covered container
2. Always wash your hands (and face if necessary) after use.

Maintenance & Care

These are disposable respirators intended for one time use only. The same respirator may be re-used during the same work shift if it has not become contaminated or damaged in any way. Perform a new fit check according to the above procedures if re-fitting the same respirator in the same work shift.

Unused respirators should remain in the box they came in or in a plastic bag at your work area where it will not be damaged or crushed.

These respirators should not be cleaned for re-use. Dispose in covered waste container or along with other contaminated protective equipment as appropriate to your department's procedures.

Fitting a potentially infectious patient with a respirator

Follow the fitting instructions above, ensuring that both straps are in place on the patient's head. Check that the respirator is in contact with the face in all areas to obtain the best seal. Mold the nose piece to the shape of the patient's nose.

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Section 2 – Air Purifying Respirators (training conducted by EHS)

Hazard Communication

Discuss with employee the general health hazards associated with the contaminants for which they are requesting respiratory protection. See attached Table I for guidance. Discuss items such as potential for skin absorption, and other items related to safety and health.

Proper Respirators for Specific Tasks

Discuss with employee the specific use of respirator and cartridges for the work to be performed. Chemical cartridges and filters do not have the same capabilities. For example, gas and vapor air purifying respirators provide no protection against particulate contaminants unless specified on the canister or chemical cartridge label. Different chemical contaminants may need different cartridges to remove the contaminant. Selection of cartridges should be done in consultant with EHS. Likewise, particulate removing respirators protect against non-volatile particles and do not provide protection against gases and vapors. Neither of these types which are classified as air purifying respirators will provide protection where there is insufficient oxygen levels. A self-contained breathing apparatus (SCBA) is the appropriate respirator for emergencies in atmosphere containing less than 19.5% oxygen.

Assignment

Each respirator shall be permanently assigned to an individual. A respirator assigned to one employee shall not be used by other employees. Other employees wishing to use respiratory protection must obtain their own respirator. Respiratory equipment shared by employees shall be properly cleaned after each use. Employees with facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with the valve function are not permitted to wear tight-fitting respirators.

Respirator Inspection

Prior to each usage, the employee should inspect the following:

1. Tightness of connections.
2. Condition of facepiece, straps, cartridges and/or filters.
3. Condition of exhalation and inhalation valves. If the sides of the exhalation valve gap even slightly, a new valve shall be installed.
4. Pliability and flexibility of rubber parts. Deteriorated respirators shall be replaced.
5. Condition of lenses of full face respirators. Damaged lenses shall be replaced or the respirator returned by EHS to the manufacturer.

EHS shall be the contact point for issue, repair, and return of all respirators.

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Donning the Respirator and Checking its Fit and Operation

Instruct employees how to properly don and doff the respirator. This includes facepiece-to-face seal using the negative and positive pressure tests (See fit testing, paragraph D of Procedures Section). Conditions which may possibly prevent a satisfactory seal include long sideburns, a beard and/or mustache, temples on eyeglasses, absence of dentures, heavy make-up or an unusual face structure. If the conditions cannot be corrected or eliminated, the worker shall not be assigned to any area requiring routine or emergency use of respiratory protection.

Cleaning the Respirator

Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker shall be cleaned as often as necessary. Those used by more than one worker (such as emergency respirators, SCBA, etc.) shall be thoroughly cleaned and disinfected after each use. OSEH recommends the use of respirator refresher wipe pads to disinfect the respirator. The following procedures shall be utilized for the cleaning of respirators.

1. Remove any filters or cartridges. Discard any filters which are clogged or cartridges which are spent.
1. Wash facepiece and breathing tube (if applicable) with a mild detergent and warm water
2. using a soft brush to facilitate removal of dirt.
3. Rinse completely in clean warm water.
4. Air dry in a clean area.
5. Inspect valves, headstraps, and other parts. If defects are found, contact OSEH before
6. using the respirator.
6. After drying, place facepiece in a plastic bag or container for storage.
7. Insert new filters or cartridges prior to use (making certain the seal is tight).

Storage of Respirators

When not in use, the respirator and cartridges should be kept in a sealed plastic bag and stored in a clean, dry, moderate temperature, non-contaminated environment. It is especially important to keep gas and vapor cartridges in a sealed container, so they do not absorb gases and vapors from the storage environment. Particulate filters should also be protected from dust and dirt to enhance their service life. Care should be taken to prevent deformation of respirator during storage. Respirators placed at work stations and work areas for emergency use shall be stored in compartments built for this purpose and must be quickly accessible at all times and clearly marked. Manufacturer's instructions shall be closely followed for proper storage of masks.

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Respirator Limitations and Change-out Schedules

A respirator and cartridges are selected for specific contaminants based on the tasks performed by the employee. A cartridge that filters one substance may not necessarily be used for another. Any new exposures need to be re-evaluated to ensure that the proper respiratory protection is provided.

The service time of any cartridge or filter will depend on how often the respirator is worn and the levels of contamination in which it is used. Gas and vapor cartridges need to be changed at a minimum of every 6 months or for contaminants with good warning properties, as soon as the wearer detects any odor, taste, or irritation. EHS will determine the proper frequency in a given situation. Particulate filters may also be changed out every six months or used until breathing resistance increases to an "uncomfortable" level.

General Limitations

As stated in the section on donning the respirator, beards, facial hair, mustaches, heavy make-up dentures, and glasses can interfere with a face seal. Tight fitting respirators will not be issued to employees with facial hair that interferes with the seal. These employees shall not be assigned to any area requiring routine or emergency use of tight fitting respirators. If the wearer of a respirator has a significant weight change (10 lbs. or more), the employee shall be fit tested again. Contact lenses may be worn with full facepiece respirators if they are rigid gas permeable or soft (hydrophilic) lenses. Hard, nonpermeable lenses shall not be worn with full facepiece respirators.

EHS recommends frequent breaks if a respirator is to be worn for any length of time.

TABLE I: HAZARD COMMUNICATION INFORMATION RESPIRATORY HAZARD EXAMPLES HEALTH EFFECTS

Oxygen Deficiency (less than 19.5% oxygen by volume in respirable air) May exist in onfined spaces such as tanks, wells, pits. Effects range from slightly impaired oordination and breathing effects to nausea, vomiting, and unconsciousness, to death within minutes depending on percentage of O2 in the air.

Asphyxiants

(Simple - materials which displace oxygen in air to create an O2 deficiency.
Chemical - materials which act to render the body unable to utilize oxygen.)

Simple - nitrogen, hydrogen, methane, helium, neon, argon

Chemical - carbon monoxide, hydrogen, hydrogen sulfide, nitriles

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Carcinogens

Gas/Vapor- benzene, carbon tetrachloride, vinyl chloride

Particulate- radioactive particulate, asbestos, chromates

Development of cancer after a period of time.

Irritants Gas/Vapor- ammonia, hydrogen chloride, sulfur dioxide, hydrogen sulfide, chlorine, ozone

Particulate- fiberglass, acidic mists, alkali mists May cause irritation and inflammation to various parts of the respiratory system. Pulmonary edema may also result. Chronic bronchitis may be seen with long-term exposure.

Eye and Skin irritation may also be a concern.

Systemic Poisons

Gas/Vapor- mercury, lead, hydrogen sulfide, organic solvents, pesticides, ethylene oxide, ether, carbon tetrachloride, chloroform, benzene, carbon disulfide

Particulate- lead, cadmium, pesticides

Acute effects may include irritation to eyes, nose, and throat, headache, nausea, vomiting, dizziness, drowsiness, incoordination, and unconsciousness. Long term exposure may involve damage to organs and systems such as nervous system, kidneys, liver, blood, bone or respiratory system. May also have reproductive effects.

APPENDIX F

INFORMATION FOR VOLUNTARY USERS OF RESPIRATORS

This appendix is provided for those individuals who are wearing respiratory protection, but are not required to do so under the OSHA/PESH standards. Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirators use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection to workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA/PESH standards.

Any time a respirator is worn, the following precautions need to be taken to be sure that the respirator itself does not present a hazard:

You should do the following:

1. *Read and heed all instructions* provided by the manufacturer on use, maintenance, cleaning, and care, and warnings regarding the respirators limitations.
2. *Make sure that the respirator in use is adequately protecting against the contaminant of concern.* All respirators and cartridges/filters are certified by NIOSH (the National Institute for Occupational Safety & Health) and are designed to protect against specific contaminants. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you. Employees will obtain all respiratory protection through HVCC Environmental, Health & Safety (EHS - 7163) to ensure that the proper equipment is used.
3. *Do not wear your respirator* into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke. If the contaminant of concern differs from that which you were originally evaluated for, call HVCC EHS at 7163 to re-evaluate your protection.
4. *Keep track of your respirator* so that you do not mistakenly use someone else's respirator.

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