

ATTACHMENT F

Respirator Protection

Types of Respirators:

Respirators are classified into two main classes according to the type of hazardous environment in which the respirator is to be used and the degree of danger to life and health, which that environment presents.

I. Supplied-Air Respirators:

This type of respirator supplies uncontaminated breathing air to the user from an external source of air connected by a high-pressure hose to the face piece, hood or helmet. They offer certain advantages over other types of respirators and may be the preferred form of respiratory protection in some applications. Some models are equipped with an air cylinder for emergency escape from an Immediately Dangerous to Life or Health (IDLH) atmosphere. An IDLH atmosphere poses an immediate hazard to life or produces irreversible debilitating effects on health.

Supplied-air respirators are approved for use under the following conditions where the use of air-purifying respirators is precluded:

- In atmospheres where contaminants do not emit a detectable odor or taste or cause irritation at safe concentrations.
- To protect against substances that would generate a high heat reaction with the absorbent in an air-purifying respirator.
- Where chemicals in the atmosphere are absorbed very poorly by the absorbents used in air-purifying respirators, causing very short service life, or where the chemicals are not absorbed at all.
- Where there are two or more contaminants in the atmosphere for which different air-purifying elements are recommended, such as ammonia and benzene, and a combination element is not available.
- When the concentration of a substance is greater than the approved limit for an air-purifying respirator.

Self-Contained Breathing Apparatus (SCBA):

The Self-Contained Breathing Apparatus (SCBA) is a special type of supplied-air respirator that gives the user an independent air supply from a pressurized tank on the wearer's back. Generally, the air supply lasts for 30 to 60 minutes, but is dependent upon

- **Mouthpiece Respirators** are for emergency escape from known concentrations of contaminants. They are lightweight and easily worn around the neck or clipped to a belt. Mouthpiece respirators however are not designed for extended or routine use.
- **Disposable Respirators** protect the wearer from low (nuisance) concentrations of fumes, mists and/or dust. Some models include an exhalation channel that exhausts air directly for less hot air and moisture buildup in the mask.

Respirator Approval:

The National Institute for Occupational Safety and Health (NIOSH) is responsible for the testing and certification of respiratory protective devices. If approval is given, the items certified are given a TC number, signifying it has been tested and certified. Respiratory protective devices must bear the TC number to be approved for use.

Selection Process:

1. **Identify the airborne contaminant(s):**

An important source of information on airborne contaminants is the Material Safety Data Sheet (MSDS) for each product. The MSDS identifies the ingredients in each product that have been determined to be a health hazard and the physical and chemical characteristics of the product such as vapor pressure and flash point.

The physical form of the hazard will also help you determine the type of respiratory protection you will need.

Dusts are tiny suspended particles resulting from a mechanical process such as grinding.

Mists are tiny liquid droplets usually created by spraying operations.

Fumes are small particles formed by a condensing gas or vapor such as in welding.

Vapors are substances that evaporate from a liquid or solid.

Gases are formless fluids that occupy the space in which they are enclosed. Examples include nitrogen and carbon monoxide.

Smoke is a mixture of suspended particles and gases which are the result of combustion. Smoke can contain toxic contaminants.

2. **Determine the concentration level of the contaminant:**

Sensitive monitoring instruments will give you a precise reading of the airborne concentration level of the contaminant. If testing indicates that you are exposed to an airborne concentration level at or above the Permissible Exposure Level (PEL) established for that substance, you must use respiratory protection.* This testing should be done by an industrial hygienist or other qualified staff.

the wearer's size and the type of work performed. SCBAs are used under the following conditions:

- In oxygen-deficient atmospheres where the oxygen level is below 19.5%.
- In poorly ventilated areas and/or in confined spaces such as tanks, tunnels, or vessels. **Note:** SCBAs are not required if the confined space is well ventilated and the concentration of toxic contaminants is known to be below the upper protection limit recommended for the respirator.
- In atmospheres where the concentration of contaminants is Immediately Dangerous to Life or Health (IDLH).
- In atmospheres where the concentration of toxic contaminants is unknown. Any unknown concentration must be treated as IDLH.
- For firefighting.

II. **Air-Purifying Respirators:**

This type of respirator usually consists of a facepiece fitted with appropriate mechanical filters or chemical cartridges or canisters to remove dusts, mists and specific fumes, gases and vapors from the breathing air. The filters and cartridges are color-coded to help the user match the right respirator, filter and/or cartridge to the hazard(s) present in the work area. They are the lightest and the easiest to use type of respiratory protection. The vast majority of work environments fall within their protection limits. Air-purifying respirators include:

- **Powered Air-Purifying Respirators (PAPRs)** have air blowers to pull air through the cartridges and filters. Some PAPRs are available with hoods or other protective headgear for use in specific types of environments. A PAPR equipped with a hood may be used instead of a tight-fitting face piece by wearers with facial hair, scars, or spectacles. PAPRs are available with chemical cartridges or with High Efficiency Particulate Air-Purifying (HEPA) filters.
- **Full-Face piece Air-Purifying Respirators** are equipped with a with chemical cartridges and/or filters and a face shield to protect the wearer's face and eyes from liquid splashes or flying particles. Some devices include a speaking diaphragm for easier communication.
- **Half-Mask Air-Purifying Respirators** cover only the nose and mouth. They often use the same cartridges and filters as full-face piece models. Most manufacturers offer two or three sizes to fit nearly all workers. They usually come with a rubber or silicone face piece and can be worn with prescription or non-prescription glasses or goggles.

3. **Evaluate the conditions of exposure:**

There are many variables that can affect your choice of respiratory protection. Always keep these factors in mind:

The nature of the task. How long will you be exposed to each hazard? Is the work strenuous, which makes breathing more difficult?

The characteristics of the work area. Is the work area a confined space and/or poorly ventilated? Will air temperatures be hot or cold? Could more than one contaminant be present?

The type of work process. Does the way chemicals are combined, heated or applied create an additional or new health hazard? An example of this could be a paint spraying or welding operation.

4. **Match the hazard, concentration level and the conditions of exposure to the proper type of respirator:**

A wide range of supplied-air and air-purifying respirators are available from various manufactures. Contact your supervisor and/or your agency/institution safety coordinator for help in selecting the proper respirator for your specific work area.

* **Note:** The OSHA Respiratory Protection Standard (29 CFR 1910.134) requires the employer to prevent occupational diseases caused by breathing contaminated air by the use of engineering control measures such as the enclosure of the operation or the substitution of less toxic materials. When effective engineering controls are not feasible, or while these controls are being instituted, appropriate respirators must be used in accordance with the requirements of the standard.

ATTACHMENT G

Sample Record of Respirator Use

Required and Voluntary Respirator Use at <i>(Company Name)</i>	
Type of Respirator	Department/Process
Filtering face piece (dust mask)	Voluntary use for warehouse workers
Half-face piece APR or PAPR with P100 filter	Prep and Assembly Voluntary use for maintenance workers when cleaning spray booth walls or changing spray booth filter
SAR, pressure demand, with auxiliary SCBA	Maintenance - dip coat tank cleaning
Continuous flow SAR with hood	Spray booth operations Prep (cleaning)*
Half-face piece APR with organic vapor cartridge	Voluntary use for Dip Coat Tenders, Spray Booth Operators (gun cleaning), and maintenance workers (loading coating agents into supply systems)
Escape SCBA	Dip Coat, Coatings Storage Area, Spray Booth Cleaning Area

* until ventilation is installed.

ATTACHMENT H

Respirator Inspection Checklist

Type of Respirator:	Location:
Respirator Issued to:	Type of Hazard:
Face piece	<input type="checkbox"/> Cracks, tears, or holes <input type="checkbox"/> Face mask distortion <input type="checkbox"/> Cracked or loose lenses/face shield
Head straps	<input type="checkbox"/> Breaks or tears <input type="checkbox"/> Broken buckles
Valves:	<input type="checkbox"/> Residue or dirt <input type="checkbox"/> Cracks or tears in valve material
Filters/Cartridges:	<input type="checkbox"/> Approval designation <input type="checkbox"/> Gaskets <input type="checkbox"/> Cracks or dents in housing <input type="checkbox"/> Proper cartridge for hazard
Air Supply Systems	<input type="checkbox"/> Breathing air quality/grade <input type="checkbox"/> Condition of supply hoses <input type="checkbox"/> Hose connections <input type="checkbox"/> Settings on regulators and valves
Rubber/Elastomer Parts	<input type="checkbox"/> Pliability <input type="checkbox"/> Deterioration

Inspected by:	Date:
Action Taken:	

Part B. Section 2. (Mandatory)

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

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 (e.g., 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) (check "yes" or "no" for all answers that apply to you)?:**
 - 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° 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, security):** _____

§5144 Appendix C OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

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 check "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?
 - 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): Yes No
 - 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?
 - 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

§5144 Appendix C OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

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 employee:

Can you read: Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and 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 health care professional who will review it.

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)

1. Today's date: ____ / ____ / ____
2. Your name: _____
3. Your age (to nearest year): ____ 4. Sex: M F 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 Area Code: (____) _____ - _____ Ext. _____
9. The best time to phone you at this number:
 Before After Between ____:____ a.m. p.m. - ____:____ a.m. p.m.
10. Has your employer told you how to contact the health care professional who will review this questionnaire? Yes No
11. Check the type of respirator you will use (you can check more than one category):
 - a. N R 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? Yes No If "yes," what type(s): _____

**COUNTY OF SAN MATEO
RESPIRATORY PROTECTION PROGRAM**

Attachment: J

VACCINATION DECLINATION FORM

I understand that due to my occupational exposure to aerosol transmissible diseases, I may be at risk of acquiring infection with _____
(name of disease or pathogen) I have been given the opportunity to be vaccinated against this disease or pathogen at no charge to me. However, I decline this vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring _____, a serious disease. If in the future I continue to have occupational exposure to aerosol transmissible disease and want to be vaccinated, I can receive the vaccination at no charge to me.

Employee Signature

Date

Seasonal Influenza Vaccination Declination

I understand that due to my occupational exposure to aerosol transmissible diseases, I may be at risk of acquiring seasonal influenza. I have been given the opportunity to be vaccinated against this infection at no charge to me. However, I decline this vaccination at this time. I understand that by declining this vaccine, I continue to be at increased risk of acquiring influenza. If, during the season for which the CDC recommends administration of the influenza vaccine, I continue to have occupational exposure to aerosol transmissible diseases and want to be vaccinated, I can receive the vaccination at no charge to me.

Employee Signature

Date