

UNIVERSITY OF MAINE AT PRESQUE ISLE

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Respiratory Protection Plan

Re-Written February 2010

Purpose:

Hazards to the lungs may be encountered in our work environment including harmful dust, fog, smoke, mists, fumes, vapors, sprays, etc. Many of these substances can cause serious health problems. Respirators prevent the entry of harmful substances into the system during breathing. Therefore, this program is being adopted in a sincere effort to protect workers in certain identified activities. Standards documentation is found in CFR 29 Part 1910.134(a)(2), Page 401.

Scope:

The Safety Officer is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure success of this program. This authority includes hiring personnel and equipment purchases necessary to implement and operate the program. The safety officer will develop written detailed instructions covering each of the basic elements in this program and is the sole person authorized to amend these instructions.

Program Elements:

1. The safety officer will develop detailed written standard operating procedures governing the selection and use of respirators, using ANSI Z 88.2 as a guideline. Outside consultation, Manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection and use. These detailed procedures will be included as appendices to this respirator program. Only the safety officer may amend these procedures.
2. Respirators shall be selected on the basis of hazards to which the worker is exposed. All selections will be made under the guidance of the safety officer.
3. The user shall be instructed and trained in the proper use of respirators and their limitations. Both supervisors and workers shall be so instructed by selected instructors. Training shall provide the employees an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a long familiarity period, and finally to wear it in a test atmosphere. Every respirator wearer shall receive fitting instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly.

Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. No employees of UMP, who are required to wear respirators, may wear beards. Also the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic checks conducted by the safety office. To assure proper protection, the facepiece fit shall be done by following the manufacturer's facepiece-fitting instructions. For additional information on respirator selection, see the provided information in this document.

4. Where practicable, the respirators should be assigned to individual workers for their exclusive use.
5. Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use. The safety officer will have set aside a respirator cleaning and maintenance facility and develop detailed written cleaning instructions.
6. The central respirator cleaning and maintenance facility will store respirators in a clean and sanitary location. One will be provided in locations convenient to respirator usage.

7. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.
8. Appropriate used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.
9. There shall be an annual program evaluation to determine the continued effectiveness of the program and will be conducted by the safety and Health committee. The safety officer will make frequent inspections of all areas where respirators are used to ensure compliance with the respiratory protection program.
10. Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. Each employee must see a local physician who shall determine what health and physical conditions are pertinent. Written approval from the physical is to be submitted to occupational Safety & Health for recordkeeping. The respirator user's medical status should be reviewed annually and be documented.
11. Approved or accepted respirators shall be used. The respirators furnished shall provide adequate respiratory protection against a particular hazard for which it is designed in accordance with standards established by competent authorities.
12. Air quality standards – if compressed air, compressed oxygen, liquid air, and liquid oxygen are used for respiration, it must meet the standard requirements as specified by law. Reference : Compressed Gas Association, commodity specifications, G-7.1-1973.

Employee Standard Operating Procedure for Disassembly, Cleaning, and Maintenance of Respirators:

1. Remove cartridges, canisters of filters, and all gaskets that are not affixed to seats.
2. Visually inspect facepieces and parts; discard faulty items.
3. Remove all elastic headbands.
4. Remove exhalation valve cover.
5. Remove specking diaphragm or specking diaphragm or specking diaphragms-exhalation valve assembly, or pressure-demand exhalation valve assembly.
6. Remove inhalation valves.

7. Wash, sanitize, and rinse facepieces (see specific procedure for operation for washing equipment). (Maximum water temperature 140 degrees; optimum range, 120 degrees to 140 degrees).
8. Dry masks (see specific procedures for drying).
9. Hand wipe facepieces valves, valve seats with damp, lint free cloth to remove any soap or residues, mold release powders, or foreign materials not removed by washing.
10. Disassemble and hand clean the pressure-demand and exhalation valve assembly, exercising care to avoid damage to the rubber diaphragm.
11. Visually inspect facepieces and all parts for deterioration, distortion, or other faults that might affect the performance of the respirators.
12. Replace any questionable obviously faulty parts or assemblies including rubber components that show weather checking when flexed or stretched, and distorted facepiece. Replace only with parts specifically designed for the particular respirator.
13. Reassemble mask and visually inspect completed assembly.
14. Install new retested filters, cartridges, or canister.
15. Clean and apply fogproof to lens per fogproof manufacturer's instructions (full facepieces only).
16. Install lens cover.
17. Fogproof outside of lens cover.
18. Quality assurance test each completed unit (see specific procedure for QA test).
19. Individually seal each in plastic bag.

Routine Inspection Checklist To Be Used During Cleaning

1. Respirator Type _____ No. _____

2. Inspector's Name (Employee) _____ Date _____

3. Defects found:

A. Facepiece _____

B. Inhalation Valve _____

C. Exhalation Valve Assembly _____

D. Headbands _____

E. Cartridge Holder _____

F. Cartridge/Canister _____

G. Filter _____

H. Harness Assembly _____

I. Hose Assembly _____

J. Speaking Diaphragm _____

K. Gaskets _____

L. Connections _____

M. Other Defects _____

4. Replacement Parts:

Ordered _____

Installed _____

List: _____

Identified Activities Requiring Respirator Protection usage by UMPI Employees:

Developed 1/91 – Occupational Safety & Health Office

<u>Activity Type</u>	<u>Substance Used</u>	<u>Department Involved</u>
Paint spraying	oil base paints Latex base paints	Facilities Management technology
Acid etching	Nitric acid	Art
Maintenance which Might involve Airborne asbestos Contact	Asbestos	Facilities Management

Personal Protective Equipment Level A :

Description of Hazards

Level A protection should be used when:

1. The hazardous substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either the measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or the site operations and work functions involve a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful to skin or capable of being absorbed through the skin.
2. Substances with a high degree of hazard to the skin are know or suspected to be present, and skin contact is possible.
3. Operations with a high degree of hazard to the skin are know or suspected to be absence of conditions requiring Level A have not yet been determined.

Respirator Types specified by OSHA

- I. Level A – to be selected when the greatest level of respiratory protection is required: positive pressure, full facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA, approved by the National Institute for Occupational Safety & Health (NIOSH).

Note: In 29 CFR 1910.120 (g) (3) (iii), OSHA requires that Level A respiratory protection be used “when chemical exposure levels present will create a substantial

possibility of immediate death, immediate serious illness or injury or impair the ability to escape”.

Personal Protective Equipment Level B :

Description of Hazards

Level B protection should be used when:

1. The type and atmospheric concentration of substances have been identified and required a high level of respiratory protection, but less skin protection.
2. The atmosphere contains less than 19.5 percent oxygen.
3. The presence of incompletely identified vapors or gases is indicated by a direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the skin.

Respirator Types specified by OSHA

- II. Level B – to be selected when the highest level of respiratory protection is necessary, but a lesser level of skin protection is needed: Positive pressure, full facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).

Personal Protective Equipment Level C :

Description of Hazards

Level C protection should be used when:

1. The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin.
2. The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove the contaminants.
3. All criteria for the use of air-purifying respirators are met.

Respirator Types Specified by OSHA

- III> Level C – to be selected when the concentration (s) and type (s) of airborne substance (s) is known and the criteria for using air purifying respirators are met:
 1. Full-face or half-mask purifying respirators (NIOSH approved).

2. Escape mask (optional).

Note: In 29 CFR 1910.120 (g) (iii) (vi), OSHA requires that respirators be selected and used in accordance with 29 CFR 1910.134. Respirators (NIOSH approved) other than those described in Levels A, B, C, and D may be more appropriate and may be used to provide the proper level of protection. Thus, where Level A or B respiratory protection is not required (e.g., in a non-IDLH atmosphere), but air-purifying respirators are inadequate because of the presence of excessive concentration levels of gases or vapors having poor warning properties, suitable airline respirators may be used.

Personal Protective Equipment Level D :

Description of Hazards

Level D protection should be used when :

1. The atmosphere contains no known hazard but fumes / vapors may be suspect.
2. Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

Respiratory Types Specified by OSHA

- IV. Level D – no respirators is required. However, OSHA does specify an “escape mask” as optional equipment to ensure a safe escape should inhalation hazard unexpectedly and suddenly appear.

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