

Goshen College



RESPIRATORY PROTECTION PROGRAM

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TABLE OF CONTENTS

INTRODUCTION.....	3
I. Training Procedures.....	4
II. Selection of Proper Respirators.....	4
III. Correct use of Respirators.....	5
IV. Care and Testing of Respirators.....	6
V. Approved Routine Uses of Respirators.....	7
VI. Emergency Use of Respirators.....	7
VII. Surveillance of Respirator Work Areas.....	7
Appendix	
1. Respirator Inspection Form	
2. Respirator Fit-Test Instructions	
3. Painting Safety Training Verification Form	

INTRODUCTION

Goshen College, for both legal and moral reasons, wishes to comply with the regulations set forth by OSHA. The following safety program is a focused attempt to ensure that all Goshen College employees are provided with a safe working environment and are informed enough to make prudent choices when faced with potentially hazardous situations. Each of the guidelines and recommendations have a solid foundation and is intended to make the work environment a safe place. Every possible situation that could arise in the workplace cannot be anticipated. However, the major principles of respirator safety are addressed. When in doubt, use common sense in applying general safety practices to specific situations.

Goshen College attempts to reduce the need for respirators by utilizing accepted engineering control measures, such as enclosure and confinement, general and local ventilation, and the use of fume hoods. Despite this effort, the need exists for the use of respirators

At present, no employees of Goshen College perform work in oxygen-deficient atmospheres. Therefore no supplied-air respirators or self-contained breathing apparatus are used. No employee may use such devices until this program has been updated to include the applicable sections of 29 CFR 1910.134; and proper training, inspection, and maintenance procedures have been completed.

In accordance with the OSHA Respiratory Protection standard, 29 CFR 1910.134, the following Respiratory Protection Program has been developed.

I. TRAINING PROCEDURES

Proper training is essential for persons who are required to use respirators in their work environment. This training will be provided to all employees who may use respirators. Such training will be provided by the Chemical Hygiene Officer and/or the properly trained supervisor of those employees using respirators. Persons who have not received proper training in the correct use of respirators will not be permitted to use respirators and/or enter an area requiring the use of a respirator.

Components of the Training Program

1. Trainees will be familiar with this program, and understand how to correctly use the guidelines and information within.
2. Trainees will learn to identify atmospheres in which respirators are required.
3. Persons using respirators must be physically able to perform the work and the use the equipment necessary to complete the task. Any change in health which may compromise the performance of the wearer will not be permitted to work in an area requiring the use of a respirator.
4. Each trainee will 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.
5. Trainees will be given the opportunity to practice inspection, donning, and using respirators under the direction of a qualified individual in an environment that does not contain airborne contaminants.
6. Trainees will then participate in a fit and leak test to insure that their respirator has been donned correctly.

II. SELECTION OF PROPER RESPIRATORS

Respirators used must be approved by the Mine Safety and Health Administration and the National Institute for Occupational Health and Safety under the provisions of 30 CFR part 11.1910.134(c).

Selection of respirators will be based upon guidance of American National Standard Practices for Respiratory Protection Z88.2-1969.

In most cases, a half-face mask will provide adequate protection from airborne hazards. If the airborne contamination presents a threat to the eyes and face, a full-face respirator must be used. If the airborne contamination only provides a splash hazard, goggles or other approved eye protection may be used in combination with a half-face respirator.

Maintenance-Free Respirators Without Cartridges or Cannisters

The proper respirator must be selected, based upon the airborne contaminant. If more than one contaminant is present, the respirator must provide protection for each and every contaminant.

Maintenance-free respirators generally are not color-coded; therefore careful attention must be paid to correctly reading the label on the respirator itself. Do not rely on the package labeling...it may be in the wrong package.

Half or Full-Face Respirators with Cartridges or Cannisters

In general, any respirator may be used in combination with the proper cartridge or cannister. This allows flexibility in replacing the cartridges or cannisters, depending upon the containment present. Refer to the chart below for proper cartridge and canister selection.

<i>Atmospheric Contaminants to Be Protected Against</i>	<i>Color Code</i>
Acid gases	White
Hydrocyanic acid gas	White with 1/2 inch green stripe
Chlorine gas	White with 1/2 inch yellow stripe
ORGANIC VAPORS	Black
Ammonia gas	Green
Acid gases and ammonia gases	Green with 1/2 inch white stripe
Carbon monoxide	Blue
Acid gases and organic vapors	Yellow
Acid gases, organic vapors, and ammonia gases	Brown
Radioactive materials	Purple
PARTICULATES (dust, fumes, mists)	Above color with gray stripe. Select proper color for the contaminant present.

Other color combinations are determined by the manufacturer. Refer to information from the manufacturer for proper selection.

Prefilters are recommended when respirators are used with paint sprays, pesticides, and most dusts and mists.

III. CORRECT USE OF RESPIRATORS

Respirators may not be used in oxygen-deficient atmospheres. They provide no protection for this situation, as they are only designed to remove contaminants.

If work is performed in an environment where the failure of a respirator could cause the wearer to be overcome by toxic fumes, at least one person shall be present and in communication with that person. Precautions must be taken so that one individual will be unaffected by any incident and have appropriate rescue equipment in the case of an emergency.

Some toxic contaminants are readily absorbed through the skin. In these cases, appropriate gloves and/or protective clothing may be required to protect other areas of the body.

Immediately leave the work area and replace the respirator if:

- a. Breathing becomes difficult
- b. Dizziness or other distress occurs
- c. You sense irritation, smell or taste contaminants
- d. The respirator becomes damaged

Respirators may not be worn if beards, facial hair, missing dentures, eyeglass temples, or other items obstruct and prevent proper sealing of the respirator to the face.

Even with a correctly selected respirator, it provides no protection if worn incorrectly. Following are general procedures for the proper use of respirators.

Because most of the respirators used at Goshen College are of the maintenance free, disposable type (eg. 3M 9900 series), the instructions for these are given in detail. Instructions for other types of respirators are included with the respirator.

1. Maintenance Free Half-Mask Respirators

- a. Untwist straps. Thread top and bottom straps through buckles. Cup respirator in hand with nose contour at fingertips, allowing headstraps to fall below hand.
- b. Place respirator under chin with nose contour facing up.
- c. Pull bottom strap over head and below ears, to neck. Raise top strap to crown of head. Make sure straps are free of any twisting.
- d. Adjust strap tension for a tight and comfortable seal.
- e. Check seal by covering the front of the respirator with both hands. Be careful not to disturb the respirator. Inhale. Negative pressure should be felt inside the respirator. If you feel a leak, reposition until a proper seal is achieved.

2. Half-Face Respirators

- a. Inspect the respirator for signs of aging, broken or frayed straps, broken or cracked parts, and other defects.
- b. Insure that any cartridges are properly secured. Prefilters, if used, must be securely held in place. In most cases, this is accomplished using special clips.
- c. Remaining instructions are nearly identical to the procedures for maintenance-free respirators given in 1. above.

3. Full-Face Respirators

- a. Instructions are nearly identical to the above instructions. Special attention must be given to the wearing of corrective glasses. The temples must not interfere in any way the seal of the face shield to the face. The wearing of contact lenses in contaminated atmospheres with a respirator is specifically prohibited.

IV. CARE AND TESTING OF RESPIRATORS

- Respirators designated as one-use disposable respirators shall be discarded immediately after use. Disposable respirators are not designed for reuse and may not provide protection after initial use.
- Reusable respirators shall be stored in a convenient, clean, and sanitary location, protected from dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals.
- Respirators must be stored in a natural position so that facepiece and exhalation valve will not be damaged.
- Respirators used by more than one person must be cleaned and disinfected after each use. Proper disinfectants may be obtained through the Chemical Hygiene Office.
- Respirators used by only one person should be cleaned and disinfected on a regular basis.
- Respirators used routinely shall be inspected during cleaning and worn or deteriorated parts replaced.
- Respirators for emergency use will be inspected monthly and after each use. A record of each inspection shall be maintained with the respirator and in the Chemical Hygiene Office.
- Respirators for emergency use will be quickly accessible at all times and will be stored in compartments specifically designated for that purpose.

- Replacement or repairs will be handled by the Chemical Hygiene Officer in accordance with the manufacturer's recommendations and instructions. Should further servicing be needed, the respirator will be returned for servicing or be discarded.
- Respirators will be qualitatively fit and leak tested according to accepted practices using banana oil (isoamyl acetate) and/or irritant smoke.

V. APPROVED ROUTINE USES OF RESPIRATORS

The use of respirators at Goshen College is approved for:

1. Painting and finishing operations, including mixing and disposal.
2. Use and disposal of cleaning chemicals.
3. Transfer and use of other chemicals where a fume hood or adequate ventilation is not readily available. In this situation, the Chemical Hygiene Officer must be notified prior to beginning such an operation.

Respirators may not be used for sandblasting or for gas or vapor contaminants with poor warning properties.

VI. EMERGENCY USES OF RESPIRATORS

The emergency use of respirators at Goshen College is approved for:

1. Cleanup of a spill which is small and does not require extraordinary measures.
2. The rescue of a person who has been overcome by a hazardous atmosphere because that person was not wearing a respirator or their respirator was damaged.
3. Entry into an area to stop a leak, shut down machinery, or other emergency operation where failure to perform this task could lead to even greater risk and damage to persons and property.

VII. SURVEILLANCE OF RESPIRATOR WORK AREAS

The Chemical Hygiene Officer and/or other person designated by the Chemical Hygiene Officer will conduct random inspections of respirators and the work area conditions to insure that respirator are in proper condition; that they are being used correctly; and that the respirator prevents work conditions causing unsafe exposure or stress.

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