

B.F. GOODRICH CHEMICAL COMPANY
Avon Lake General Chemical Plant

Department Managers
General Foremen

GENERAL NOTICE: SA-45
Issued: May 21, 1975
Page 1

SUBJECT: RESPIRATORY PROTECTION

PURPOSE:

In controlling employees' exposure to breathing air contaminated with harmful dusts, gases, vapors, fumes, mists, smokes, sprays, and fogs, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures. When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

DETERMINING RESPIRATOR NEED

The need for respirators depends upon atmospheric conditions in the work area, which shall be determined by the appropriate monitoring method. In the case of vinyl chloride, appropriate respirators are required as outlined in the OSHA Standard for Exposure to Vinyl Chloride, published in the Federal Register on October 4, 1974 and effective on April 1, 1975.

Monitoring of the work areas must be a continuing program so that changes in the work environment can be detected. The need for respirators in a particular area may change depending upon results of the monitoring program.

PHYSICAL EXAMINATIONS:

Employees will 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. The Plant Physician shall determine what health and physical conditions are pertinent. The respirator user's medical status will be reviewed regularly. The type of atmospheric contaminant an employee is exposed to will

NGC 13997

determine the frequency of examination.

RESPONSIBILITY OF EMPLOYER:

For safe use of any respirator, it is essential that the employee be properly instructed in the selection, use, maintenance and limitations of it. Employees shall be so instructed by area Foremen and Supervisors.

- a. 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.
- b. Employees shall be instructed in the proper care of respirators in relation to cleaning, maintenance, repair and storage.
- c. Employees shall receive training in regards to the applicable and suitable purposes that respirators are intended for. The limitations of each type of respirator shall be explained to each employee in the regulated areas on an annual basis, or more often if necessary.
- d. Respiratory equipment will be personally assigned to employees for their exclusive use in as many areas as necessary.

RESPONSIBILITY OF EMPLOYEE:

The employee has responsibility towards the plant respirator program once he has been given the appropriate training in selection, use, maintenance, and limitations of respirators.

- a. The employee must wear the appropriate respiratory equipment in the areas designated for its use. It is recognized that the wearing of respirators may pose an inconvenience to the employee. Nevertheless, for the health protection of the employee, he must comply with the plants respiratory protection program.
- b. The employee shall guard against damage to the respirator. Care of the

equipment is important because an unknown defect in a respirator reduces the protection for the employee.

- c. The employee shall report any malfunction of the respirator to his foreman. The respirator must be repaired or replaced as necessary.
- d. The employee has the responsibility of proper cleaning and storage of his personally issued respirator.

SELECTION OF RESPIRATORS:

Effective respiratory protection depends upon use of the proper type of respirator. Each type of respirator has its limitation and each employee should know the basis for the selection of respirator he uses. The correct respirators for particular conditions are listed below.

1. Scott Air-Pak Self Contained Breathing Apparatus: to be used in:

- a. Oxygen Deficient Atmospheres; any atmosphere that contains less than 19.5% oxygen by volume. When in doubt concerning the concentration of oxygen in any area, the area foreman or safety department shall be called to test the location.

b. Gaseous Contamination Immediately Hazardous to Life:

- I.) Emergency situation - any occurrence that leads to a massive release of vinyl chloride. These situations could be equipment failure or malfunction, operating mistakes, etc. For these situations the gas alarm would be activated.
- II.) Entry into unknown concentrations or concentrations greater than 36,000 ppm (lower explosive limit) may be made only for purposes of life rescue; and entry into concentrations of less than 36,000 ppm, but greater than 3,600 ppm may be made only for purposes of life rescue, firefighting, or securing equipment so as to prevent a greater hazard from release of vinyl chloride.

III.) Any ammonia leak of massive proportions.

IV.) In a suspected area of unknown and/or harmful gaseous concentrations, a Scott Air-Pak shall be used until the degree of exposure has been determined to be within safe limits.

c. Building 451 Cold Room Entry (unknown concentrations) or in known concentrations over 1000 ppm.

d. VCL level above 100 ppm -- as determined by the Bendix System Alarm.

2. Low Pressure Constant Flow Air-Line Respirator, $\frac{1}{2}$ or full face mask.

a. VCL concentration 10-1000 ppm, as determined by OVA or Bendix System.

b. Building 451 Cold Room Entry.

c. Welding fumes, etc.

d. Other jobs designated by Departments as hazardous operations requiring Air-Line respirators.

3. Air Purifying Canister Respirator

VCL concentrations 1-10 ppm.

I.) Provides a service life of up to 8 hours at 10 ppm with a $\frac{1}{2}$ mask, and super size canister.

II.) Between April 1, 1975 and April 1, 1976, canister type respirators may be worn at the discretion of the employee at levels below 25 ppm.

4. Particulate Contamination

a. 2-M Nontoxic Particle Mask - Many of the particulate contaminations are nuisance dusts which the employee may find objectionable even though the levels are within the specified amount. This mask gives excellent filtration for nontoxic dusts, powders and spray particles.

b. A-O R9100 Dust Mask (Gray) - Used when making lead compounds in millrooms.

4. Particulate Contamination (continued)

c. Cartridge Respirators - Cartridge Respirators such as the Welch Protex, when fitted with the proper cartridge and used for the intended purpose are efficient in preventing the inhalation of toxic or irritating dusts, mists or gases. Users must be aware of the limitations of cartridge respirators if they are to realize their maximum effectiveness, however. Some things to be aware of when using cartridge respirators are listed below.

1. Cartridge respirators work by absorbing or filtering the toxic or irritating substances. As a result, cartridges and filters must be changed regularly for maximum effectiveness.
2. Cartridge respirators must never be used where there is insufficient oxygen to support life. A level of 19.5% or less requires the use of supplied air equipment.
3. Cartridge respirators must never be used in fire situations. Organic vapor cartridges do not remove the products of combustion, especially carbon monoxide. In fire situations, supplied air respirator equipment must be used.
4. Organic Vapor Cartridges must not be used except for organic vapors, Acid and Caustic fumes or gases are not organic vapors and require a different cartridge.
5. Do Not Use This Type of Respirator in a Regulated Area.

5. Others:

- a. There may be situations where no respiratory protection is required since the contaminant levels are within the governmental standards. However, certain employees may find that the contaminant is irritating to them personally. Even though no mask may be required, the employee is urged to wear the appropriate available equipment for his protection, as specified by his department.
- b. When in doubt about which kind of contaminant is present, it should be assumed that it could be immediately hazardous to the health. In these cases a Scott Air-Pak would be the appropriate selection.

FITTING RESPIRATORS:

- a. Before a person is allowed to work in a hazardous atmosphere with a respirator, he must be fitted with the proper mask for his facial features. Respirators will not be effective if facial features interfere with sealing ability. Beards, side-burns, eyeglasses can affect the fit and will have to be adjusted before issuing a mask to an employee.
- b. The positive pressure test and negative pressure test are required in order to determine the employees mask fit.
 1. Positive pressure test:

Close the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be felt without evidence of outward leakage at the seal.
 2. Negative pressure test:

Cover the inlet opening on the mask and inhale so the facepiece collapses slightly. If the facepiece remains in the slightly collapsed condition for several seconds and shows no sign of leakage, the fit is probably satisfactory.

- c. Before a mask is issued to an employee the fit should also be tested under realistic conditions. This is accomplished by putting oil of wintergreen or banana oil on the outside of the mask. If the fit is proper with the mask in place he will not be able to detect the odor inside the mask.
- d. Several types of approved masks should be available at the time of fitting so that there is a choice in case one manufacturer's mask does not fit properly. A person who cannot be fitted properly cannot work in areas presenting a hazard to his health.
- e. When a mask is issued it should be identified with man's name and locker number. Records of issued must be kept on file.

CLEANING OF MASKS:

- a. Masks issued for general use by all employees will be cleaned after each use by person using the mask. The mask should be cleaned in antiseptic soap. It will be the responsibility of the department supervisor to assure that these general use masks are clean and sanitary after use.
- b. Masks personally issued will be cleaned daily or more often if necessary by the individual. It will be his responsibility to assure himself that the mask is clean and sanitary. Double basin sinks have been provided in each regulated area for this purpose.
- c. The following procedure for cleaning is suggested:
 - 1. Remove any filters or canisters
 - 2. Wash facepiece and breather tube in cleaner-disinfectant solution.
This may be done with a soft brush or by immersion depending upon how dirty the mask is.
 - 3. Rinse completely in other basin in clean, warm water.
 - 4. Air Dry

Department Managers
General Foremen

GENERAL NOTICE: SA-45
Issued: May 21, 1975
Page 8

Cleaning of Masks (continued)-

c.)

5. Inspect valves, straps or other parts and replace as necessary.
 6. Install new canister.
 7. Place in plastic bag and store in locker for next use.
- d. Once per month all respirator will be turned in for sterilization. The masks will be washed in a commercial dishwasher in the locker room. It will be the responsibility of the employee to pick up his respirator after sterilization has been completed.

REPAIR OF MASKS:

- a. At the time of the monthly sterilization the masks will be completely disassembled for inspection. All defective straps, lenses, regulators, seals, etc. will be replaced.
- b. Records of the monthly inspection must be kept on each individually issued respirator.

W.T. Gunning
Sr. Safety Engineer

GAK:wet

Approved by Operations Council: 5-13-75

NGC 14004