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- o Pouring PVC powder or resin from bags or containers.
- o Packaging PVC resin powder.
- o Maintenance and repair of vessels and/or reactors containing VC or PVC.
- o Maintenance and repair of storage silos for PVC.
- o Leakage of VC in any area, particularly in processing areas.

(b) Permissible exposure refers to a ceiling value of 50 parts per million (ppm) of VC. It does not mean a time-weighted-average (TWA) exposure of 50 ppm of VC with results which fluctuate above and below 50 ppm.

(c)(2) Frequency. Monitoring of a sufficient number of employees so that a representative sample may be determined means that the employer shall monitor at least 75 percent of the production, maintenance, sampling, laboratory and shipping employees on each shift. The employees monitored shall be representative of each operation performed where exposure is likely to occur. Initially, representative employees from every operation should be monitored. Afterwards, where it is established that there is no likelihood of exposure for employees in certain operations, such as those in offices, these employees may be exempted from monitoring requirements.

(c)(3) Method of monitoring. Personnel monitoring refers to measurements made by the employer of employee exposures. Samples should be taken at the breathing zone of the employee at the times when the highest exposures of VC are likely to occur. The standard (or this directive) does not specify the method of analyses that the employer must use; only that the procedure be sensitive to 50 ppm of VC in air with an accuracy of ± 20 percent for a 10-minute air sample.

b. Citations.

(1) Issuance.

Each provision of 29 CFR 1910.93q became effective April 5, 1974. This means that from April 5, 1974, citations may be issued for any failure to comply, except for monitoring, which is not required until after April 22, 1974.

(2) Categories.

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In evaluating violations of the standards, the guidelines of the Compliance Operations Manual, January 1972, are to be followed regarding serious and nonserious and grouping.

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c. Imminent Danger.

- (1) Violation of 2(b) and 2(d) of 29 CFR 1910.93q exposes employees to the recognized hazard of VC in excess of 50 ppm. Therefore, such a violation may be considered for possible issuance of a Notice of Alleged Imminent Danger, depending on the facts and circumstances in each case. Circumstances permitting the issuance of a Notice of Alleged Imminent Danger would be where it is determined that employees at their breathing zones are exposed in excess of 50 ppm to VC and are not wearing the required respiratory protection. Supplied air respirators, either in continuous flow or pressure demand or self-contained breathing apparatus (SCBA) (MESA or NIOSH-approved) are required when concentrations of VC are in excess of 50 ppm.
- (2) Alleged violations will be supported by compound label information, employee statements, photographs, ventilation measurements, other observed facts, measurements and samples taken.
- (3) No Notice of Alleged Imminent Danger will be posted where the employer voluntarily eliminates direct internal contact with VC substance(s) by removing the employees or by providing interim measures for their protection until permanent correction of the dangerous condition can be accomplished. In the citation(s) that is(are) issued later, the interim protective measures will be required until the date set for permanent correction of the danger.
- (4) Where the employer refuses to eliminate the recognized hazard, citations will be issued only after initial court proceedings have been concluded regarding the imminent danger.
- (5) If, on an inspection for any reason after April 22, 1974, it is learned that the employer has not monitored the ambient air and/or the employees, a citation will be issued. It seems most likely that the violation would be nonserious; however, each case must be evaluated on its own merits and becomes a matter of judgment for the CSHO.

4. Action (29 CFR 1910.93q)

a. Inspections.

- (1) Any establishment covered by the Act likely to have VC, may be inspected regardless of lists (including attachment 3) issued by the Office of Federal and State Programs or Regional Programs. The guidelines of the OSHA Program Directive #200-18 are to be followed regarding inspection priorities. VC shall be included in Special Programs and will precede the Target Health Hazard Program (THHP).

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- (2) Inspections will be conducted by only an OSHA or State Agreement industrial hygienist (CSHO).

b. Protective Equipment for the CSHO.

- (1) After April 22, 1974, when the CSHO goes to a VC or PVC plant to make an inspection, the monitoring records should be checked before beginning the inspection or touring the facilities to ascertain the necessary protective equipment.
- (2) The CSHO is required to utilize the principle of safe distance or the organic vapor respirator as protection in areas where it appears from the monitoring records that the exposure to VC is 50 ppm or less. It must be remembered that each cartridge of the respirator is not to be worn longer than 30 minutes.
- (3) If, from the monitoring records, it appears that there are areas in which the exposures to VC are in excess of 50 ppm, the CSHO shall wear either Type C continuous flow or pressure demand air supplied respirator or SCBA in these areas.
- (4) Normally, the CSHO would not enter areas where the employer has not monitored. However, if the CSHO must go in for a reason, such as a fatality, and the employer has not monitored, it will be assumed that the level of VC is above 50 ppm. Therefore, the CSHO will wear either Type C continuous flow or pressure demand air supplied respirator or SCBA in these areas.
- (5) In performing any inspection, the CSHO must exercise good judgment and make the appropriate evaluation as to the protection necessary for himself. Oftentimes a factor such as distance, in lieu of respiratory protection, can be useful as a protective measure.

c. Decontamination.

When appropriate, the instructions from the manufacturer may be used as guidelines for decontamination or deactivation of VC.

d. Monitoring for VC by the CSHO.

- (1) Personal breathing zone samples should be collected from employees where exposure to VC is likely. A Model SP-1 Sipin personal sampling pump shall be used to collect the sample on NIOSH-approved charcoal tubes. The flow rate of the pump shall be no more than 50 ml/minute and the total sample size approximately 1 liter(1), and/or a sampling time of 20 minutes where a concentration of approximately 50 ppm is suspected. Where concentrations may be greater than 50 ppm, but less than 100 ppm, the sampling time should be 10 minutes; for concentrations greater than

100 ppm, but less than 200 ppm, the sampling time should be 5 minutes. All measurements should represent the time when exposures are likely to be the greatest, rather than random exposure throughout the workday. Generally, no more than eight tubes per worker, per day, should be submitted for analysis. One or two tubes may suffice if they represent the maximum exposures.

- (2) It is requested that the charcoal tubes with the vinyl chloride samples be forwarded to the OSHA/NIOSH Laboratory, Salt Lake City (SLC) on the same day that the samples are taken. For shipment of samples to the laboratory, the sample(s) must be placed in a double mailing container and the inner part of the container marked, "Cancer Causing Substance: Vinyl Chloride."

e. Completion of OSHA-35 Form.

After each inspection of an area where VC and PVC are manufactured, processed, used, repackaged, released, handled, or stored, the Area Director shall promptly forward to the Office of Management Data Systems a completed copy of OSHA Test Sample Log, OSHA-35 Form, giving the identification number of the vinyl chloride, 2580. This is mandatory--whether or not samples are taken.

f. Questionnaire.

The questionnaire (attachment 3) is for the purpose of obtaining information to assist in the preparation of a permanent standard on VC. The CSHO is requested to complete this questionnaire within 5 days after making an inspection of a VC facility. The questionnaire shall be submitted with a completed copy of the OSHA-1 Form to:

U.S. Department of Labor
Occupational Safety and Health Administration
Division of Occupational Health Programming
1726 M Street, N.W., Room 760
Washington, D.C. 20210

As soon as the results of analyses from samples taken on the inspection are received, an OSHA-35 Form should be prepared and submitted. These forms, OSHA-1 and OSHA-35, are in addition to, not in lieu of, those required by the Office of Management Data Systems.

g. Special Problems.

Special problems presented during inspections will require interpretation of the standard in light of the specific situation found. The National Office, Division of Occupational Health Programming, should be consulted on such interpretative problems.

5. Effective Date

This directive is effective immediately and shall be retained until further notice.

Barry J. White

Barry J. White
Associate Assistant Secretary
for Regional Programs

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