

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

(By authority conferred on the director of the department of consumer and industry services by sections 14 and 24 of 1974 PA 154 and Executive Reorganization Orders Nos. 1996-1 and 1996-2, MCL 408.1014, 408.1024, 330.3101, and 445.2001)

PART 431. HAZARDOUS WORK IN LABORATORIES

R 325.70101 Scope; effective date of subrule (2)

Rule 1. (1) These rules set forth the requirements for laboratory use of hazardous chemicals. Subjects to which these rules apply include all of the following:

- (a) Exposure limits.
- (b) Exposure monitoring.
- (c) Written chemical hygiene plan.
- (d) Employee information and training.
- (e) Medical surveillance.
- (f) Hazard identification.
- (g) Use of respiratory protection.
- (h) Recordkeeping.

(2) These rules, where they apply as specified in R 325.70102, supersede all Michigan occupational safety and health act (MIOSHA) occupational health standards that govern the use of specific chemical substances, except as provided in R 325.70104, R 325.70105, and R 325.70108. Also, where they apply, these rules supersede the requirements of the occupational safety and health administration (OSHA) hazard communication standard, being 29 C.F.R. §1910.1200, which is incorporated by section 14a of 1974 PA 154, MCL 408.1014a. This subrule takes effect when an employer has developed and implemented a written chemical hygiene plan as prescribed by R 325.70106.

(3) All occupational health standards that do not deal with a specific chemical substance apply to laboratory operations as do any occupational safety standards administered by the Michigan department of consumer and industry services. Such non-chemical substance standards that apply to laboratory operations include all of the following rules:

- (a) Occupational noise exposure, Part 380., R 325.60101 et seq.
- (b) Ionizing radiation, Part 381., O.H. 2410 et seq.
- (c) Nonionizing radiation, Part 382., R 325.60701 et seq.
- (d) Ventilation control, Part 520., O.H. 3101 et seq.
- (e) Permit-required confined spaces, Part 490., R 325.63001 et seq.
- (f) Respiratory protection, Part 451., R 325.60051 et seq.
- (g) Illumination, Part 478., R 325.47801 et seq.
- (h) Sanitation, Part 474., O.H. 4201 et seq.
- (i) Medical services and first aid, Part 472., R 325.47201 et seq.
- (j) Employee medical records and trade secrets, Part 470., R 325.3451 et seq.

History: 1992 AACCS; 2003 AACCS.

R 325.70102 Application

Rule 2. (1) These rules apply to all employers who have an employee or employees involved in the laboratory use of hazardous chemicals as defined in R 325.70103.

(2) These rules do not apply to either of the following:

(a) Work involving chemicals that do not meet the conditions of the definition of laboratory use of hazardous chemicals. In such cases, the employer shall comply with all relevant specific substance standards even if such use occurs in a laboratory type setting.

(b) Work involving the laboratory use of hazardous chemicals that does not have the potential for employee exposure.

History: 1992 AACCS; 2003 AACCS.

R 325.70103 Definitions

Rule 3. As used in these rules:

(a) "Action level" means a concentration which is designated in established MIOSHA health standards for a specific substance, calculated as an 8-hour, time-weighted average, and which initiates certain required activities, such as exposure monitoring and medical surveillance.

(b) "Chemical hygiene officer" means an employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions of the chemical hygiene plan. This definition is not intended to place limitations on the position description or job classification that the designated individual shall hold within the employer's organizational structure.

(c) "Chemical hygiene plan" means a written program which is developed and implemented by the employer, which sets forth procedures, equipment, personal protective equipment, and work practices that are capable of protecting employees from the health hazards presented by the hazardous chemicals used in a particular workplace, and which is in compliance with the requirements of R 325.70106.

(d) "Director" means the director of the Michigan department of consumer and industry services or his or her designee.

(e) "Emergency" means any occurrence, such as equipment failure, the rupture of containers, or the failure of control equipment, that results in an uncontrolled release of a hazardous chemical into the workplace.

(f) "Employee" means a person who is assigned to work in a laboratory workplace and who may be exposed to hazardous chemicals in the course of his or her assignments.

(g) "Hazardous chemical" means a chemical for which there is statistically significant evidence, based on at least 1 study that is conducted in accordance with established scientific principles, that acute or chronic health effects may occur in employees who are exposed to the chemical. These health effects include those that result from exposure to chemicals which are any of the following:

(i) Carcinogens.

(ii) Toxic or highly toxic agents.

(iii) Reproductive toxins.

(iv) Irritants.

(v) Corrosives.

(vi) Sensitizers.

(vii) Hepatotoxins.

(viii) Nephrotoxins.

(ix) Neurotoxins.

(x) Agents that act on the hematopoietic systems.

(xi) Agents that damage the lungs, skin, eyes, or mucous membranes. Appendices A and B of the OSHA hazard communications standard, being 29 C.F.R. §1910.1200 and referenced in R 325.70101(2), provide further guidance in defining the scope of health hazards and determining whether or not a chemical is to be considered hazardous for purposes of these rules.

(h) "Laboratory" means a facility where the laboratory use of hazardous chemicals occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a nonproduction basis.

(i) "Laboratory-type hood" means a work chamber which is used in a laboratory, which is enclosed on 5 sides and has a moveable sash or fixed partial closure on the remaining side, which is constructed and maintained to draw air from the laboratory and prevent or minimize the escape of air contaminants into the laboratory, and which allows chemical manipulations to be conducted in the enclosure without inserting any portion of the employee's body other than hands and arms. The term

includes walk-in hoods with adjustable sashes if the sashes are adjusted during use so that the airflow and the exhaust of air contaminants are not compromised and so that employees do not work inside the enclosure during the release of airborne hazardous chemicals.

(j) "Laboratory use of hazardous chemicals" means the handling or use of such chemicals in which all of the following conditions are met:

- (i) Chemical manipulations are carried out on a laboratory scale.
- (ii) Multiple chemical procedures or chemicals are used.
- (iii) The procedures that are involved are not part of production process, nor in any way simulate a production process.
- (iv) Protective laboratory practices and equipment are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

(k) "Medical consultation" means a consultation that takes place between an employee and a licensed physician to determine what medical examinations or procedures, if any, are appropriate.

(l) "Physical hazard" means a chemical for which there is scientifically valid evidence that it is any of the following:

- (i) A combustible liquid.
- (ii) A compressed gas.
- (iii) Explosive.
- (iv) Flammable.
- (v) An organic peroxide.
- (vi) An oxidizer.
- (vii) Pyrophoric.
- (viii) Unstable (reactive).
- (ix) Water-reactive.

These terms are defined in appendix B of these rules.

(m) "Production" means the manufacturing processes that use hazardous chemicals and result in a product.

(n) "Protective laboratory practices and equipment" means those laboratory procedures, practices, and equipment that are accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

(o) "Reproductive toxins" means chemicals that affect the reproductive capabilities, including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

(p) "Select carcinogen" means any substance that meets 1 or more of the criteria set forth in the definition of select carcinogen in paragraph (b) of OSHA standard 29 C.F.R. §1910.1450, which is adopted herein by reference. The cited provision of 29 C.F.R. §1910.1450 is available from the Michigan Department of Consumer and Industry Services, Standards Division, P.O. Box 30643, Lansing, Michigan 48909, at no cost, or from the U.S. Department of Labor, OSHA, 801 S. Waverly, Suite 306, Lansing, Michigan 48917, at no cost. The cited definition is printed as appendix C to these rules.

History: 1992 AACS; 2003 AACS.

R 325.70104 Permissible exposure limits

Rule 4. For laboratory uses of MIOSHA-regulated substances, an employer shall assure that laboratory employees' exposures to such substances do not exceed the permissible exposure limits specified in MIOSHA occupational health standards.

History: 1992 AACS; 2003 AACS.

R 325.70105 Exposure monitoring

Rule 5. (1) An employer shall measure an employee's exposure to any substance that is regulated by a standard that requires monitoring if there is reason to believe that exposure levels for that substance

routinely exceed the action level or, in the absence of an action level, the permissible exposure limits (PEL).

(2) If the initial monitoring prescribed by subrule (1) of this rule discloses employee exposure over the action level or, in the absence of an action level, the PEL, an employer shall comply with the exposure monitoring provisions of the relevant standard.

(3) Monitoring may be terminated in accordance with the relevant standard.

(4) An employer shall, within 15 working days after the receipt of any monitoring results, notify an employee of these results, in writing, either individually or by posting the results in an appropriate location that is accessible to employees.

History: 1992 AACS; 2003 AACS.

R 325.70106 Chemical hygiene plan

Rule 6. (1) Where hazardous chemicals as defined by these rules are used in the workplace, an employer shall develop and carry out the provisions of a written chemical hygiene plan that provides for both of the following:

(a) Protecting employees from health hazards that are associated with hazardous chemicals in that laboratory.

(b) Keeping exposures below the limits specified in R 325.70104.

(2) The chemical hygiene plan shall be readily available to employees, employee representatives, and, upon request, to the director.

(3) The chemical hygiene plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:

(a) Standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals.

(b) Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals, including engineering controls, the use of personal protective equipment, and hygiene practices. Particular attention shall be given to the selection of control measures for chemicals that are known to be particularly hazardous.

(c) A requirement that laboratory-type hoods and other protective equipment are functioning properly and the specific measures that shall be taken to ensure the proper and adequate performance of such equipment.

(d) Provisions for employee information and training as prescribed in R 325.70107.

(e) The circumstances under which a particular laboratory operation, procedure, or activity shall require prior approval from the employer or the employer's designee before implementation.

(f) Provisions for medical consultation and medical examinations in accordance with R 325.70108.

(g) Designation of personnel who are responsible for implementing the chemical hygiene plan, including the assignment of a chemical hygiene officer and, if appropriate, establishment of a chemical hygiene committee.

(h) Provisions for additional employee protection for work with particularly hazardous substances, such as select carcinogens, reproductive toxins, and substances that have a high degree of acute or chronic toxicity. Specific consideration shall be given to the following provisions, which shall be included where appropriate:

(i) The establishment of a designated area or areas that indicate the physical limits of exposure to particularly hazardous substances.

(ii) The use of containment devices, such as laboratory-type hoods or glove boxes.

(iii) Procedures for the safe removal of contaminated waste.

(iv) Decontamination procedures.

(4) An employer shall review and evaluate the effectiveness of the chemical hygiene plan at least annually and update it as necessary.

(5) Appendix A to these rules is nonmandatory, but provides guidance to assist employers in the development of a chemical hygiene plan.

History: 1992 AACS; 2003 AACS.

R 325.70107 Employee information and training

Rule 7. (1) An employer shall provide employees with information and training to ensure that they are apprised of and understand the hazards of chemicals present in their work areas.

(2) Such information shall be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and before assignments that involve new exposure situations. Refresher information and training shall be provided by the employer to ensure that an employee is aware of the risks of exposure to hazardous chemicals.

(3) Employees shall be informed of all of the following:

- (a) The contents of these rules and appendices, which shall be made available to employees.
- (b) The location and availability of the employer's chemical hygiene plan.
- (c) The permissible exposure limits for MIOSHA-regulated substances or the recommended exposure limits for other hazardous chemicals if there are no applicable MIOSHA rules.
- (d) Signs and symptoms associated with exposures to hazardous chemicals that are used in the laboratory.
- (e) The location and availability of known reference material on the hazards, safe handling, storage, and disposal of hazardous chemicals found in the laboratory, including material safety data sheets (MSDS) received from a chemical supplier.

(4) Employee training shall include all of the following:

- (a) Methods and observations that may be used to detect the presence or release of a hazardous chemical, such as monitoring conducted by the employer, continuous monitoring devices, and the visual appearance or odor of hazardous chemicals when being released.
- (b) The physical and health hazards of chemicals in the work environment.
- (c) The measures employees can take to protect themselves from health hazards, including specific procedures that the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

(5) The employee shall be trained about the applicable details of the employer's written chemical hygiene plan.

History: 1992 AACS; 2003 AACS.

R 325.70108 Medical surveillance

Rule 8. (1) An employer shall provide all employees who work with hazardous chemicals an opportunity to receive the following medical attention, including any follow-up examinations which the examining physician determines to be necessary:

(a) When an employee develops signs or symptoms that are associated with a hazardous chemical to which the employee may have been exposed in the laboratory, the employee shall be provided an opportunity to receive an appropriate medical examination.

(b) If exposure monitoring reveals an exposure level that is routinely above the action level or, in the absence of an action level, the PEL for a MIOSHA-regulated substance for which there are exposure monitoring and medical surveillance requirements, medical surveillance shall be established for the affected employee as prescribed by the particular standard.

(c) When an event takes place in the work areas, such as a spill, leak, explosion, or other occurrence that results in the likelihood of a hazardous exposure, the affected employee shall be provided an opportunity for a medical consultation. Such consultation shall be for the purpose of determining the need for a medical examination.

(2) All medical examinations and consultations shall be performed by or under the direct supervision of a licensed physician who is familiar with the general health effects of hazardous chemicals and sources of specific information on such effects and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(3) An employer shall provide all of the following information to the physician:

- (a) The identity of the hazardous chemical or chemicals to which the employee may have been exposed.

- (b) A description of the conditions under which the exposure occurred, including quantitative exposure data, if available.
- (c) A description of the signs and symptoms of exposure that the employee is experiencing, if any.
- (4) For examination or consultation that is required under this rule, an employer shall obtain a written opinion from the examining physician. The opinion shall include all of the following:
 - (a) Any recommendation for further medical follow-up.
 - (b) The results of the medical examination and any associated tests.
 - (c) Any medical condition revealed in the course of the examination which may place the employee at increased risk as a result of exposure to a hazardous chemical that is found in the workplace.
 - (d) A statement that the employee has been informed by the physician of the results of the consultation or medical examination and any medical condition that may require further examination or treatment.
 - (5) The written opinion shall not reveal specific findings of diagnoses unrelated to occupational exposure.

History: 1992 AACS; 2003 AACS.

R 325.70109 Hazard identification

Rule 9. (1) With respect to labels and material safety data sheets (MSDS) for hazardous chemicals, both of the following provisions apply:

- (a) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.
- (b) Employers shall maintain any MSDS that are received with incoming shipments of hazardous chemicals and ensure that MSDS are readily accessible to laboratory employees.
- (2) All of the following provisions shall apply to chemical substances that are developed in the laboratory:
 - (a) If the composition of the chemical substance that is produced exclusively for the laboratory's use is known, an employer shall determine if it is a hazardous chemical. If the chemical is determined to be hazardous, the employer shall provide appropriate training as required by R 325.70107.
 - (b) If the chemical produced is a by-product of unknown composition, an employer shall assume that the substance is hazardous and shall implement the provisions of R 325.70106.
 - (c) If the chemical substance is produced for another user outside of a laboratory, an employer shall comply with the OSHA hazard communication standard, being 29 C.F.R. §1910.1200, which is referenced in R 325.70101.

History: 1992 AACS; 2003 AACS.

R 325.70110 Use of respiratory protection

Rule 10. If, after appropriate application of feasible engineering and work practice controls, the use of respirators is necessary to maintain exposure below permissible exposure limits, the employer shall provide, at no cost to the employee, the proper respiratory protection equipment. Respirators shall be selected and used in accordance with the requirements of respiratory protection, Part 451., R 325.60051 et seq.

History: 1992 AACS; 2003 AACS.

R 325.70111 Recordkeeping

Rule 11. (1) An employer shall establish and maintain, for each employee, an accurate record of any measurements taken to monitor employee exposures and any medical consultation and examinations, including tests or written opinions required by these rules.

(2) An employer shall assure that such records are kept, transferred, and made available in accordance with the provisions of employee medical records and trade secrets, Part 470., R 325.3451 et seq., and are protected from unauthorized disclosure.

History: 1992 AACS; 2003 AACS.

R 325.70112 Rescinded.

History: 1992 AACCS; 2003 AACCS.

R 325.70113 Appendices

Rule 13. Appendices A, B, C, and D to these rules are informational only and are not intended to create any additional obligations or requirements not otherwise imposed by these rules or to detract from any established obligations or requirements.

History: 1992 AACCS; 2003 AACCS.

R 325.70114 Availability of rules and appendices; permission to copy

Rule 14. (1) A copy of these rules and appendices are available at no cost from the Michigan Department of Consumer and Industry Services, Standards Division, P.O. Box 30643, Lansing, Michigan 48909.

(2) Permission to copy any of these documents in full is granted by the director.

History: 1992 AACCS; 2003 AACCS.