
MIOSHA

Michigan Occupational Safety and Health Administration (MIOSHA)
Department of Licensing and Regulatory Affairs (LARA)

AGENCY INSTRUCTION

DOCUMENT IDENTIFIER:
MIOSHA-STD-07-1R4

DATE: April 12, 2018

SUBJECT: Eyewash/Shower Equipment

- I. Purpose. This instruction establishes policies and provides clarifications to ensure uniform enforcement and interpretation of MIOSHA standards requiring emergency eyewash/shower equipment.
- II. Scope. This instruction applies to the General Industry Safety and Health Division (GISHD) and the Consultation Education and Training (CET) Division.
- III. References.
 - A. Agency Instruction MIOSHA-COM-11-1, [Cross-Citing Hazards in a Different Discipline or Division](#), as amended.
 - B. Agency Instruction MIOSHA-COM-15-2, [Horizontal or Vertical Standards – Determining Application](#).
 - C. American National Standards Institute (ANSI) Z358.1 - 2014 American National Standard for Emergency Eyewash and Shower Equipment.
 - D. General Industry Safety Standard Part 21. /R408.12101 et seq., [Powered Industrial Trucks](#).
 - E. General Industry Safety Standard Part 63. /R408.16301 et seq., [Pulp, Paper, and Paperboard Mills](#).
 - F. General Industry Safety Standard Part 72. /R408.17201 et seq., [Automotive Service Operations](#).
 - G. General Industry Safety Standard Part 78. /R408.17801 et seq., [Storage and Handling of Anhydrous Ammonia](#) (1910.111).
 - H. General Industry Safety Standard Part 92. /R408.19201 et seq., [Hazard Communication](#).
 - I. LARA MIOSHA [Chemical Information Manual \(CIM\)](#), as amended.
 - J. Michigan Occupational Safety and Health Act, R408.1001 et seq., P.A. 154 of 1974, as amended.
 - K. [MIOSHA Field Operations Manual \(FOM\)](#), as amended.
 - L. Occupational Health Standard Part 306. /R325.51451 et seq., [Formaldehyde](#).
 - M. Occupational Health Standard Part 313. /R325.51651 et seq., [Methylene Chloride](#).
 - N. Occupational Health Standard Part 430. /R325.77001 et seq., [Hazard Communication](#).
 - O. Occupational Health Standard Part 472. /R325.47201 et seq., [Medical Services and First Aid](#).

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- P. Occupational Health Standard Part 526. /R325.52601 et seq., [Dipping and Coating Operations](#).
 - Q. Occupational Health Standard Part 554. /R325.70001 et seq., [Bloodborne Infectious Diseases \(BID\)](#).
 - R. [Toxicology of the Eye](#), Volumes 1 and 2, 4th Edition (1993), W. Morton Grant and Joel S. Schuman.
- IV. Distribution. MIOSHA Staff; Federal OSHA; S-drive Accessible; MIOSHA Messenger; and Internet Accessible.
- V. Cancellations. All previous versions of this agency instruction.
- VI. Next Review Date. To be reviewed in three years from date of issuance.
- VII. History. History of previous versions include:
MIOSHA-STD-07-1R3, June 27, 2016
MIOSHA-STD-07-1R2, June 20, 2011
MIOSHA-STD-07-1R1 January 4, 2008
MIOSHA-STD-07-1, November 14, 2007
- VIII. Contact. [Nella Davis-Ray](#), Director, Consultation Education and Training (CET) Division and [Adrian Rocs kay](#), Division Director, General Industry Safety and Health Division (GISHD).
- IX. Originator. Barton G. Pickelman, Director
- X. Significant Changes.
- A. Eliminates the use of pH as the primary measure of defining “injurious or corrosive”, and instead relies upon the chemical manufacturer’s or importer’s hazard classification (see Hazard Communication, Appendix A.2. and 3). Functionally, this means that industrial hygienist/safety officer (IH/SO’s) use the GHS hazard statement on the safety data sheet (SDS) or label “causes serious eye damage” (i.e. Category 1), or “causes serious eye irritation” (i.e. Category 2A) as the primary basis to define “injurious or corrosive”. A GHS classification of “causes eye irritation” (Category 2B) would not require an eyewash/shower. pH may be used to determine corrosivity of a diluted chemical if the SDS fails to provide an eye hazard classification (see Section XIII. A.)
 - B. Eliminates the dual travel distance criteria (i.e., 25 feet for “highly corrosive” chemicals, 100 feet for “injurious or corrosive”). Makes the travel distance requirement consistent with the guidance given in ANSI Z358.1, which is a maximum of 10 seconds (approximately 55 feet).
 - C. Clarification that more than one motion to activate the eyewash is permitted as long as the activation occurs in one second or less (per ANSI guidance). The prohibition against a second/separate motion to remove *nozzle covers* remains.
 - D. Previous instructions accepted a cold water pipe carrying potable water <25 psi, equipped with a quick opening valve if the hose was 4 feet long and ¾ inch thick. This instruction does not accept that alternative definition of suitable eyewash

facility except for the dipping and coating industry as specified in the vertical standard OH Part 526, [Dipping and Coating Operations](#) [i.e., 1910.124(g)(2)].

- E. Previous instructions required either; a) an emergency eyewash/shower facility every 25 feet for retail transport of lead-acid batteries, or b) personal wash bottles for immediate flushing until an acceptable eyewash/shower facility can be reached. This instruction eliminates that broad guidance. The SO/IH shall be responsible to determine if such transport of batteries in retail establishments poses an exposure hazard.
- F. This instruction changes the PPE use policy for the traveling portion of housekeeping/custodial duties that involve injurious or corrosive chemicals. PPE is required for the traveling portion of such housekeeping/custodial duties. There will be continued need for professional judgement regarding the appropriate type of PPE. Typical use of a few ounces of an injurious chemical used at arm's length may require protective gloves and safety glasses with sideshields. Safety goggles may be necessary if the amount of injurious chemical splash can cause injury by entering around standard safety glasses with sideshields.
- XI. Background. This instruction addresses the fundamental need for suitable facilities to quickly remove or dilute injurious or corrosive materials and in the case of human immunodeficiency virus (HIV) and Hepatitis B virus (HBV) research facilities, potentially infectious materials, from the eyes or body in the event of contact. The intent of these standards/rules is to prevent burns to the skin, damage to or loss of eye sight, and to minimize exposure to potentially infectious materials. Many acids and caustic materials in liquid, granular or powder form, and some organic materials are capable of causing damage to the body or eyes. Exposure to some biological materials can cause infection and disease. If employees may reasonably be expected to be exposed to these materials in their workplace, without regard to the use of PPE, facilities for quick drenching shall be provided for immediate emergency use.
- XII. MIOSHA Standards Overview. Note that there may be certain MIOSHA standards that contain eye flushing requirements different than OH Part 472 Medical Services and First Aid. For example, GI Part 63 Pulp, Paper, and Paperboard Mills, contains a requirement that a deluge shower and eye fountain shall be provided within 25 feet of an area where caustics or acids are used or mixed at a strength that could cause injury to an exposed employee. This is more strict than the distance requirement contained in OH Part 472 (10 seconds or 55 feet). When inspecting or consulting in industries (or on processes) affected by both vertical and horizontal standards refer to the Agency Instruction MIOSHA-COM-15-2, [Horizontal or Vertical Standards – Determining Application](#). The standards listed below contain references to emergency eyewash and/or showers.
 - A. General Industry Safety Standard Part 21. /R408.12101 et seq., [Powered Industrial Trucks](#).
 - B. General Industry Safety Standard Part 63. /R408.16301 et seq., [Pulp, Paper, and Paperboard Mills](#).
 - C. General Industry Safety Standard Part 72. /R408.17201 et seq., [Automotive Service Operations](#).

- D. General Industry Safety Standard Part 78. /R408.17801 et seq., [Storage and Handling of Anhydrous Ammonia](#) (1910.111).
- E. Occupational Health Standard Part 306. /R325.51451 et seq., [Formaldehyde](#).
- F. Occupational Health Standard Part 313. /R325.51651 et seq., [Methylene Chloride](#).
- G. Occupational Health Standard Part 472. /R325.47201 et seq., [Medical Services and First Aid](#).
- H. Occupational Health Standard Part 526. /Rule R325.52601 et seq., [Dipping and Coating Operations](#).
- I. Occupational Health Standard Part 554. /R325.70001 et seq., [Bloodborne Infectious Diseases \(BID\)](#).

XIII. Application of Standards.

- A. Under OH Part 472, Medical Services and First Aid, “injurious or corrosive materials” will be defined as chemicals that have the GHS classification of serious skin/eye damage and serious skin/eye irritation (see Hazard Communication, Appendix A.2 and A.3). Functionally, this means that IH/SO’s use the GHS hazard statement “causes serious eye damage,” or skin corrosion (i.e. Category 1), or “causes serious eye irritation” (i.e. Category 2A) as the primary basis to define “injurious or corrosive.” A GHS classification reading “causes eye irritation” (Category 2B) would not require an eyewash/shower.

If a corrosive chemical is used in diluted form and there is no SDS information (therefore no eye hazard classification), the IH/SO may use pH test strips or submit a sample to the lab to determine pH. Appendix A.3.3 of the Hazard Communication Standard shall be used to determine if the dilution meets the definition of Class 1 eye damage. From A.3.3.1 “In the absence of any other information, a mixture/substance is considered to cause serious eye damage (Eye Category 1) if it has a pH < or = 2 and > or = 11.5. However, if consideration of acid/alkaline reserve suggests the substance may not have the potential to cause serious eye damage...then further evaluation may be necessary.” Such “weight of evidence” evaluations should follow the guidance offered in Hazard Communication Appendix, Figure A.3.1.

Some organic materials are also capable of causing damage to the body or eyes and are injurious.

Because HIV and HBV research laboratories deal with solutions containing higher viral titers than normally found in patient’s blood, an emergency eyewash must be readily available in the work area.

- B. The terms suitable facilities, quick drench showers, acceptable facilities, appropriate eyewash facilities, emergency shower and eye-wash station, eye wash station, and facilities, as utilized in any of the specified standards/rules, shall be defined as a plumbed or self-contained emergency shower and/or eyewash equipment, or eye/face wash equipment, meeting the engineering design specifications of the American National Standard for Emergency Eyewash and

Shower Equipment (i.e., ANSI Z358.1 - 2014). This Instruction relies on ANSI Z358.1 – 2014, to determine how quickly the control valve must be operated. ANSI states that activation of the eyewash *control valve* shall occur in 1 second or less and be simple to operate. MIOSHA has made a clarification that more than one motion to activate the eyewash is permitted as long as the activation occurs in one second or less. A second/separate motion to remove nozzle covers is not allowed.

- C. Self-contained eyewash equipment (i.e., portable units) must be capable of delivering to the eyes not less than 1.5 liters per minute (0.4 gallons per minute) for 15 minutes. Self-contained emergency showers shall be capable of delivering a minimum of 20 gallons per minute for 15 minutes.
- D. In the dipping and coating industry, Occupational Health Part 526, Dipping and Coating Operations [i.e., 1910.124(g)(2)] allows an exception to the standard ANSI emergency shower and eyewash. In place of that equipment the employer may use a water hose at least 4 feet long and $\frac{3}{4}$ inch thick with a quick-opening valve and carrying a pressure of 25 psi or less.
- E. Personal wash units (e.g., 12- to 16-ounce bottles) do not meet the criteria of plumbed or self-contained eyewash equipment. These units are supplemental devices that support plumbed and/or self-contained units.
- F. The proximity of the emergency shower and/or eyewash facility shall be 10 seconds travel distance (55 feet). This reference is based on the ANSI Z358.1 – 2014 guidance that emergency eyewash equipment should be immediately available but in no instance a maximum of 10 seconds (55 feet).
- G. The location of the shower and/or eyewash facility shall be easily accessible (i.e., no obstacles, closeable doorways, or turns) and should be clearly marked and well lighted. The shower and/or eyewash shall not have a protective covering that requires manual removal prior to use. Nozzle covers removed by water pressure upon activation are allowed.
- H. Employers should inspect and maintain all equipment in accordance with the manufacturer's instructions. During MIOSHA inspections, IH/SOs shall determine whether equipment is functioning properly (e.g. adequate flow of clean water). If not functioning properly (e.g., rusty water, only one side working, etc.), the IH/SO shall recommend a citation specifying inadequate equipment.
- I. A GISHD SO may cite an eyewash/shower violation per Agency Instruction [Cross-Citing Hazards in a Different Discipline or Division](#).
- J. Where exposure to ammonia occurs at a facility outside the scope of General Industry Safety Standard Part 78, [Storage and Handling of Anhydrous Ammonia](#) (1910.111), Occupational Health Standard Part 472, [Medical Services and First Aid](#), applies.

K. Exceptions.

1. Battery Maintenance/Handling.

Emergency eyewash/shower facilities are not required in battery charging area(s) where the battery(s) is charged without removing the battery(s) from the equipment. If employees service the battery(s) (i.e., checking fluid levels and/or making additions) or remove the battery(s) for charging, this exemption does not apply.

2. Custodial/Housekeeping Activities. Custodial and housekeeping staff typically handle and may be exposed to chemical products (cleaning chemicals) that are injurious or corrosive. Emergency eyewash/shower facilities and PPE are required at the dispensing station for the injurious or corrosive chemicals. PPE is required when handling injurious or corrosive materials as part of the traveling portion of the job, for example when the custodian/housekeeper goes from room to room or machine to machine, as a custodian/housekeeper would in a hotel, school, nursing home, or factory. A standard eyewash station is not required in the traveling portion of a custodian/housekeeper's job. Hazard Communication training is required for both the dispensing station and the traveling portion of typical custodial/housekeeping tasks.

XIV. Violation Documentation. When documenting violations for the lack of satisfactory emergency eyewash/shower facilities, the IH/SO shall, where appropriate, document the following information in the case file.

- A. Type of hazard that exists (e.g., GHS label or SDS showing corrosive or serious irritant, pH measurements when chemical is diluted and properties vary from shown on SDS, or other evidence).
- B. Employee exposure route(s).
- C. Employer knowledge of hazard (e.g., SDS, used at full concentration or exposed to splash during unsafe dilution process, etc.).
- D. Frequency and duration of exposure.
- E. Photographs of area, chemicals, PPE, evidence of exposure, etc.
- F. PPE being utilized by employees.
- G. Alternative water source(s) in hazard area.
- H. Verification of hazard communication training.
- I. Interview statements.
- J. Relevant injury and illness history.

XV. Citation Guidelines.

A. Serious.

1. Corrosive or seriously irritating materials (as determined by GHS label or SDS). See Section XIII. A. for GHS Categories for skin corrosives (Category 1), as well as Categories for eye corrosives and irritants (Category 1 and 2A, but not 2B). If no information on classification or pH is contained on a GHS label or SDS, further supporting documentation will be necessary to classify a serious hazard. If a deficiency is identified in either the GHS label or SDS, a hazard communication citation may be appropriate.
2. Highly injurious materials (methyl ethyl ketone peroxide [MEKP], etc.).
3. BID hazards in a HIV and HBV research lab.

B. Other-than-Serious. A violation may be classified as other-than-serious when the IH/SO documents all of the following conditions are present.

1. Proper PPE is being utilized.
2. An alternate water source is present.
3. The employee is properly trained in accordance with the [Hazard Communication](#) standard.
4. In the professional judgment of the IH/SO, serious physical harm to an employee is unlikely to occur.

C. Grouping. Where there are violations of the emergency eyewash/shower requirements, PPE requirements, and/or hazard communication training requirements, involving the same hazard, the violations shall normally be grouped in accordance with the [FOM](#).