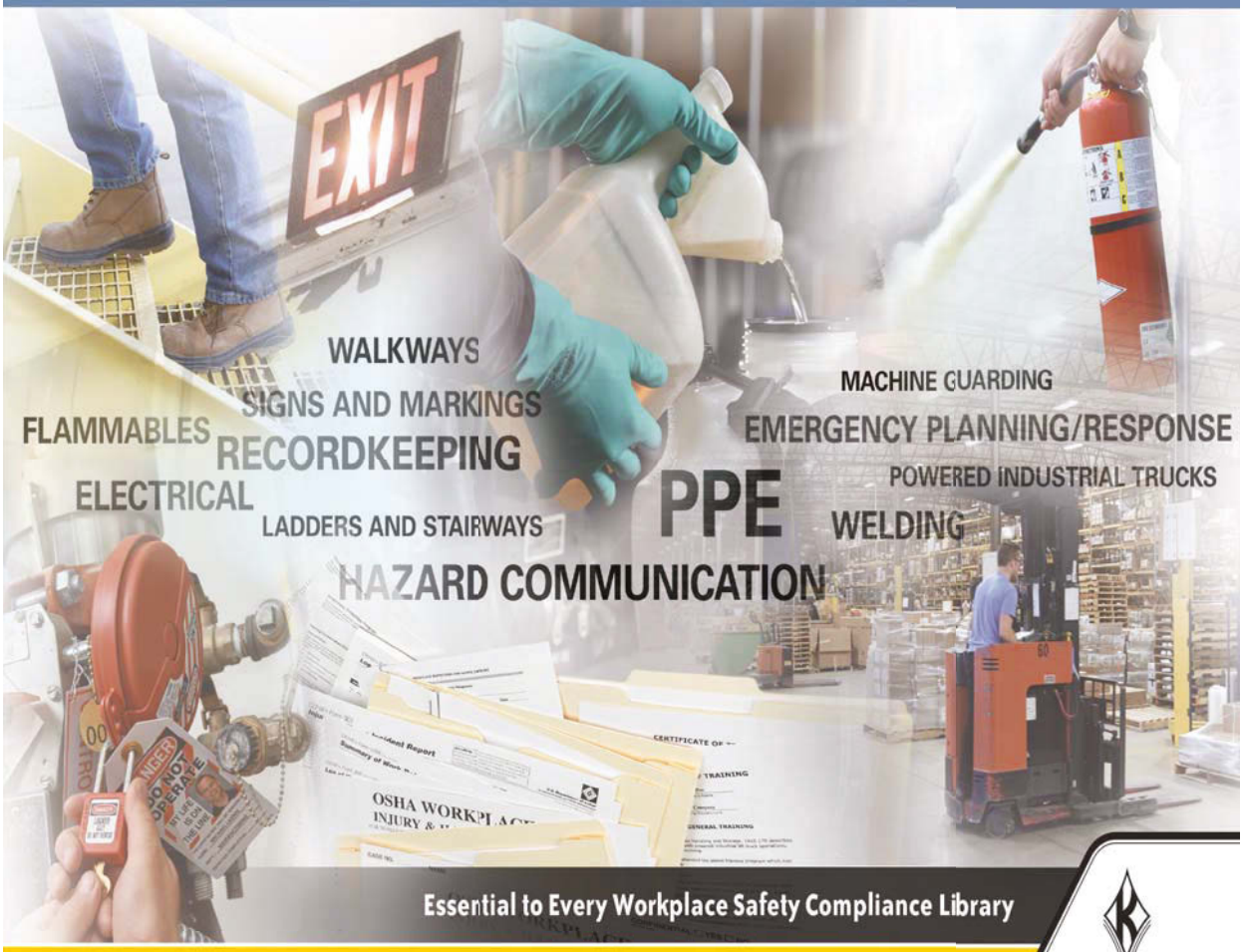
OSHA COMPLIANCE FOR General Industry

FROM UNDERSTANDING TO IMPLEMENTATION



Essential to Every Workplace Safety Compliance Library

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Introduction

This publication takes you beyond what the regulations are and provides you with information on how to comply with them and implement them, as well as providing relevant information based on OSHA's own interpretations of the regulations.

Used in conjunction with the OSHA regulations, this publication serves as an effective guide to implementing safety and health requirements in your workplace.

As you use the publication, consider the following as your roadmap.

Getting started with OSHA compliance

- ❑ **Determine which specific OSHA regulations you must comply with**. Even if you know you are covered by OSHA's "General Industry" regulations, you still have to narrow down the focus to those that are specifically applicable to your operations. Some will apply, some will not. **Note**: This publication is focused on federal OSHA requirements; some states, such as California, Oregon, Washington, Michigan, and Minnesota, have their own approved state OSHA requirements which take precedence over federal OSHA. See the **OSHA** section of this publication for information on state versus federal jurisdiction.
  - OSHA's list of most frequently cited standards by industry can help you narrow down the scope. Type in your NAICS code at the following website: https://www.osha.gov/pls/imis/citedstandard.html.
  - You can also use prior inspection history, as well as injury and illness data to determine areas on which to focus.
- ❑ **Determine which written plans** you must have. Written plans outline how the company will carry out various functions of a program. For example, most employers are required to have a Hazard Communication program; the written plan would include a list of hazardous chemicals used, who is responsible for obtaining missing safety data sheets, which workers are exposed to hazardous chemicals, the type of training used, the type of labeling system used, where safety data sheets are kept, and so on. See the **list of required plans** in the Recordkeeping section of this publication. Also, see **sample written plan templates**, which appear at the end of most sections in the publication.
- ❑ **Determine training requirements**. OSHA requirements vary in their specificity with regard to training. Some require refresher training, some do not. Some require documentation, some do not. Each employer should review the individual training requirements to determine those that apply. See the **Training Requirements At-a-Glance** section in this publication for a guide to the "what," "when," and "what documentation" for training.
- ❑ **Determine inspection requirements**. Regular inspection of machinery and equipment is critical, though the degree to which OSHA addresses inspections in the regulations vary. In some cases, a visual inspection pre-use is required, in others a more thorough inspection may be required. See the **Inspection Requirements At-a-Glance** section in this publication for a guide to the "what," "when," and "what documentation" of inspections.
- ❑ **Survey workers** on safety and compliance needs. Workers can provide valuable input on hazardous conditions and potential controls.

- ❑ **Set up an incident investigation protocol** with a focus on root-cause analysis.
- ❑ **Implement a safety committee** with representation from all areas of the operations. (Some states require safety committees; federal OSHA does not, though they encourage their use.)
- ❑ **Document injuries and illnesses** (unless you are exempt) on OSHA recordkeeping forms. (See the Recordkeeping section of this publication).

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ez Explanations™
summaries from the J. J. Keller® subject-matter experts

When employees could be exposed to hazardous chemicals, they must be provided suitable facilities to flush the chemical from their eyes and/or body. This must take the form of a properly designed eyewash and/or shower.

Scope

OSHA's emergency eyewash/shower requirements apply to all employers who have employees who may be exposed to injurious corrosive materials (as defined by the SDS). In addition, a few industry-specific standards have requirements.

Regulatory Citation

- 29 CFR 1910.151(c) — *Medical services and first aid*. (There are additional requirements for specific operations/hazards, such as battery charging, dipping and coating operations, and pulp and paperboard mills.)
- OSHA uses the associated ANSI standard during inspections when evaluating the suitability of emergency eyewash and shower protection provided by the employer as stated in a November 1, 2002 Letter of Interpretation.

Key Definitions

- **ANSI Z358.1**: An American National Standard that provides specifications for the design, testing, maintenance, and use of emergency eyewash and shower facilities. OSHA accepts equipment meeting ANSI Z358.1 specifications as being sufficient for compliance with 1910.151(c).
- **Corrosive**: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. Generally speaking, corrosive materials have a very low pH (acids) or a very high pH (bases). Strong bases are usually more corrosive than acids. Examples of corrosive materials are sodium hydroxide (lye) and sulfuric acid.
- **Exposure**: In terms of the requirement to provide an eyewash/shower, "exposure" means that there is an actual or likely chance that an employee's eyes and/or body could come in contact with a corrosive material. If hazardous materials are present at a worksite in such a way that exposure could not occur (for example, in sealed containers that will not be opened, or caustic materials in building piping), then an eyewash or emergency shower would not be necessary. However, if the building piping containing caustic materials has, at certain locations, a spigot or tap from which the contents are to be sampled or withdrawn and employees are expected to perform such tasks, then, an emergency eyewash and/or shower would be needed where this task is to occur.
- **Flushing fluid**: Potable water, preserved water, preserved buffered saline solution or other medically acceptable solution.

- **Tepid**: Flushing fluid that is a temperature which promotes continuous flushing for the required minimum 15 minutes. ANSI defines tepid as a temperature range between 60 and 100 degrees Fahrenheit.

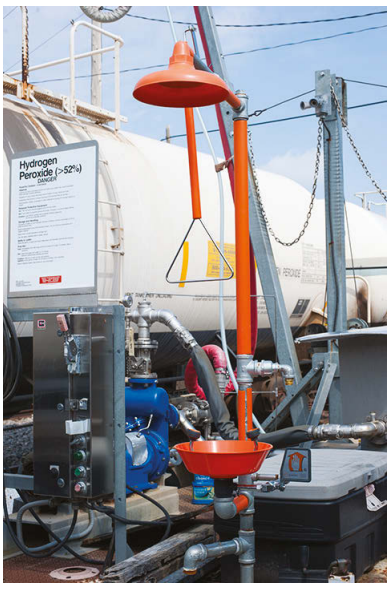
Summary of Requirements

Employers must:

- **Assess the workplace for substances** that could cause harm or adverse effects to the eyes or body. The chemical's Safety Data Sheet (SDS) is generally the indicator that an eyewash/shower is needed for exposure to the substance. However, there are other guidance available, such as W. Morton Grant's *Toxicology of the Eye* (Charles C Thomas Pub. Ltd., 4th edition, August 1993) and the *NIOSH Pocket Guide to Chemical Hazards*.
- **Provide suitable facilities** for drenching or flushing of the eyes and body where there is exposure to injurious corrosive materials. OSHA says a plumbed or self-contained eyewash or shower unit that meets the specifications of ANSI Z358.1 would be compliant. A personal wash unit (e.g., eyewash bottle) would not be compliant. Eyewash bottles can only be used to support a plumbed or self-contained unit, but cannot replace them.
- **Ensure eyewash/showers are located within 10 seconds** of the hazard.
- **Ensure eyewashes can deliver a minimum of .4 gallons** of flushing fluid per minute for 15 minutes.
- **Ensure showers can deliver a minimum of 20 gallons** of flushing fluid per minute for 15 minutes.
- **Inspect and maintain eyewash/shower equipment** per manufacturer's specifications and instructions.
- **Train employees** on locations and use of eyewash/shower equipment.

In Depth

There are times when the use of emergency eyewash and shower equipment becomes crucial in the workplace. In instances where employees are exposed to injurious corrosive materials, OSHA requires at 29 CFR 1910.151(c) that employers provide suitable facilities for quick drenching or flushing of the eyes and body within the immediate work area. OSHA provides no additional requirements, and as a result, employers often ask whether or not emergency eyewashes or showers are needed at their facility.



OSHA says in an April 14, 2008 Letter of Interpretation (LOI) that "…the employer must determine if employees can or will be exposed during the course of their duties to hazardous materials in such a way that the protections of an eyewash or emergency shower would be necessary."

Essentially, OSHA expects the employer to determine the level of potential risk to employees and provide protection accordingly.

What protection is appropriate should be based on a hazard assessment and exposure determination because an employer doesn't always need an eyewash or shower just because they have chemicals.

Emergency Planning/Response: Eyewashes/Showers

Common Eye/Skin Hazardous Chemicals		
Some commonly encountered chemicals that present eye and/or skin hazards are listed below. This list does not include all hazardous chemicals that may be encountered. The hazardous materials may be liquids, gases or solids		
Very acidic (low pH)	**Highly alkaline (high pH)**	**Other**
• acetic acid • chromic acid (crystals or solution) • hydrochloric acid (muriatic acid) • hydrofluoric acid (glass etching, dry cleaners/laundry) • nitric acid (aqua fortis) • phosphoric acid (solid or liquid) • sulfuric acid (battery acid)	• ammonia • ammonium hydroxide (aqueous ammonia) • boiler additives calcium hydroxide (hydrated lime, slaked lime) • calcium oxide (lime, quick lime, unslaked lime) • diethylaminoethanol (boiler treatment) • ethanolamine (corrosion inhibitor, detergents) • ethylenediamine (solvent, photoresist stripper, corrosion inhibitor in antifreeze) • hypochlorites (disinfectants, household bleach) • potassium hydroxide (lye, caustic potash) • sodium hydroxide (lye, caustic soda) • sodium metasilicate (water glass, detergents) • trisodium phosphate (TSP, detergents)	• chlorine • chlorine dioxide • cyanoacrylate adhesives (Super glue) • diethylene dioxide (boiler treatment, toxic through skin absorption) • epoxy resins (epichlorohydrin/bisphenol A) • ethylene oxide (gas sterilant) • formaldehyde (gas, or up to 50 percent solution, Formalin) • glutaraldehyde (cold sterilant) • hydrogen peroxide (> 5 percent, a bleach) • isocyanates (MDI, TDI) • methyl ethyl ketone peroxide (MEKP, catalyst for styrene resins) • any chemical labeled oxidizer, corrosive, or caustic

Source: Minnesota Department of Labor and Industries' Fact Sheet

OSHA says employers should refer to the chemical's Safety Data Sheet (SDS) when making this evaluation. For example, if the SDS indicates irritation only, an eyewash or shower may not be required. On the other hand, if the SDS states that burns, corneal damage, or blindness could happen, the material would be considered hazardous and an eyewash and possibly a shower must be provided. Employers should also consult with the product manufacturer and sources such as the NIOSH "Pocket Guide to Chemical Hazards." The guide lists the physical and chemical properties and health hazards for many different substances. If the entry for the material in question says "provide quick drench," this would obviously be an indication that an eyewash or shower is needed. Also, in a May 5, 2004 LOI OSHA says that employers should consult references such as W. Morton Grant's "Toxicology of the Eye" when considering potential chemical exposures to the eye and the appropriateness of installing eyewashes to protect employees against hazards associated with particular chemicals and substances

An emergency eyewash or shower isn't necessarily needed just because an employer possesses an injurious corrosive material. In the April 14, 2008 LOI, OSHA also says that: "If hazardous materials are present at a worksite in such a way that exposure could not occur (for example, in sealed containers that will not be opened, or caustic materials in building piping), then an eyewash or emergency shower would not be necessary. However, if the

building piping containing caustic materials has, at certain locations, a spigot or tap from which the contents are to be sampled or withdrawn and employees are expected to perform such tasks, then, certainly, an eyewash and/or emergency shower would be needed where this task is to occur."

Therefore, when determining exposure, an employer should evaluate the potential for the material to get into the eyes or on the skin.

Employers must consider the type of equipment, worksite conditions, and quantity of exposure among other things. For example, if there is the potential for substantial exposure to the body then a shower would be needed also. If only the eyes could be impacted, then an eyewash may be all that is needed.

Compliance Point

Battery charging and eyewashes

Does OSHA require an eyewash in a forklift battery charging area? OSHA says, based on an Occupational Safety and Health Review Commission ruling, that employers are not required to have an eyewash (and/or shower) station for an area where no maintenance is performed on powered industrial truck batteries; that is, when they are being charged only. It would still be considered a best practice to have an eyewash (and/or shower) station in the charging area, however.

Location

While OSHA doesn't specify the placement of eyewashes or showers in a facility, the standard does say that they must be provided "within the work area for immediate emergency use." What exactly does that mean though? The ANSI standard known as ANSI Z358.1, which OSHA often references, says that emergency eyewashes and shower must be located on the same level as the hazard. The ANSI standard says that emergency equipment should be located adjacent to the hazard, but situated in such a manner that exposure to the splash hazard or other hazards (e.g., exposed electrical equipment) does not occur while using the eyewash. This gives an employer some flexibility regarding location next to strong acids or caustics yet provides adequate worker protection. For substances which are a gas or highly volatile (e.g., anhydrous ammonia) in the presence of water, etc., you should consider locating the eyewash or shower outside the immediate source of exposure as the closeness of the proximity may actually pose an additional hazard.

The path of travel to an eyewash or shower is critical. If an employee is hindered in some way from either getting to or using the eyewash station, OSHA would likely consider that a violation of the standard. Specifically, an eyewash and shower should be no farther than a 10 second travel time from the hazard. According to the ANSI standard, an average person covers a distance of approximately 55 feet in 10 seconds when walking at a normal pace. The physical and emotional state of the victim should be considered along with the likelihood of personnel in the immediate area to assist.

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