UCR Environmental Health & Safety

SAFETY EYEWEAR SELECTION AND USE GUIDANCE DOCUMENT

Contents

A. PURPOSE

Safety eyewear is essential in preventing eye injuries, such as chemical splash or blunt impact, and should always be worn in the workplace where these hazards may be present. Never underestimate the potential for eye injury, regardless of how safe the workplace activities may seem. According to the U.S. Bureau of Labor Statistics, approximately 20,000 eye injuries occur in the workplace each year – a vast majority of these eye injuries can be prevented with use of the appropriate safety eyewear.

All University of California, Riverside (UCR) students, faculty, staff, and affiliates (collectively, "UCR personnel") are required to wear safety eyewear when:

(i) Working with hazardous materials, including but not limited to, infectious materials, radioactive materials, chemicals, physical hazards (e.g., potential for flying objects/debris), harmful temperature extremes, light radiation (e.g., ultraviolet light, lasers); and,

(ii) Working within a Laboratory/Technical Area, defined by the University of California – Office of the President (UCOP) PPE Policy as "*a location where the use or storage of hazardous materials occurs or where equipment may present a physical or chemical hazard*". The use of safety eyewear should be appropriately selected on the basis of the present hazard(s).

The Safety Eyewear Selection and Use Guidance Document (the "Guidance Document") is intended to provide instructions and information on determining when safety eyewear is required, safety eyewear considerations and limitations, using only American National Standards Institute (ANSI)-certified safety eyewear, selecting appropriate safety eyewear based on present hazards, care and use, and first aid for eye injuries.

B. DETERMINING WHEN SAFETY EYEWEAR IS REQUIRED

The Principal Investigator (PI)/Supervisor is required to assess hazards in the laboratory or research setting using the UCR Laboratory Hazard Assessment Tool (LHAT). The LHAT's objectives are to determine if safety eyewear is necessary and provide UCR personnel with guidance to select the appropriate safety eyewear. The LHAT is UCR's primary and recommended workplace hazard assessment process.

In addition to the LHAT, UCR personnel must also be aware of the present workplace hazards. As detailed in Section A of the Guidance Document, safety eyewear must be worn when working with hazardous materials or occupying a Laboratory/Technical Area; examples of these criteria requiring safety eyewear include:

Examples of Laboratory/Technical Areas

- Research Settings/Laboratories
- Teaching Settings/Laboratories
- QA/QC and Analytical Laboratories
- Stock/Storage Rooms
- Waste Accumulation Areas/Locations
- Cold Rooms
- Machine Shops/Workshops
- Vivaria
- Visual/Performing Arts Studios and Shops

Examples of Workplace Hazards/Associated Activities

- Chemicals (solids/liquids/vapors/mists/sprays)
- Biological Agents (blood/bacteria/viruses/fungi)
- Dusts/Particles/Chips/Sand/Dirt
- Torching/Welding/Soldering/Molten Metals/Sparks
- Abrasive Blasting/Machining
- Light Radiation (bright lights, ultraviolet, laser, welding)
- Chopping/Chipping/Cutting/Drilling/Grinding
- Hammering/Milling/Sanding/Sawing
- Temperature Extremes (liquid nitrogen, sparks)

If safety eyewear is required, follow the instructions outlined on the UCR Environmental Health & Safety (EH&S) Personal Protective Equipment (PPE) webpage to obtain safety glasses and goggles at no charge. UCR EH&S will ensure that the issued safety eyewear is properly fitted to the individual and replace any damaged safety eyewear. Specialized safety eyewear (e.g., welding helmet, laser/UV safety glasses) must be provided by the workplace's PI/Supervisor.

C. SAFETY EYEWEAR CONSIDERATIONS AND LIMITATIONS

Different types of eyewear provide different types of protection:

Impact Resistant Safety Glasses are intended to protect the user's eyes when working with materials that may fly towards the user's face, impacting the eyes.

Splash Goggles are intended to protect the user's eyes against the risk of hazardous materials in a non-solid phase, such as liquids, sprays, and splashes. Additionally, safety goggles may be worn to reduce eye exposure to nuisance dusts.

Face Shields may be worn as secondary eye and face protection over safety eyewear. Note that face shields may not be worn as a substitute for safety eyewear, i.e., safety goggles or glasses must be worn underneath a face shield.

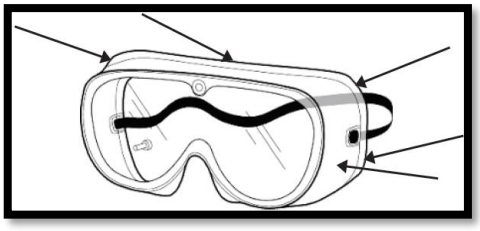
Prescription Eyeglasses are *not* suitable eye protection and should never be used as a substitute for safety eyewear. Reference Section D of the Guidance Document for additional information. EH&S offers standard safety glasses and goggles, including styles designed to fit over prescription eyeglasses.

D. USING ONLY ANSI-CERTIFIED SAFETY EYEWEAR

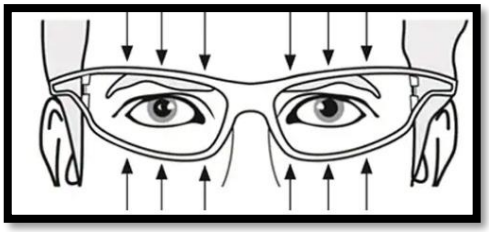
Only use safety eyewear that has been ANSI-certified. Safety eyewear marked with "Z87" or "Z87+" have been tested and certified by ANSI to withstand impact. Notably, "Z87+" certified safety eyewear meets a higher impact standard and goes through more testing than "Z87" certified safety eyewear. For workplaces with high-risk of eye damage, contact EH&S for recommendations.

It is important to note that prescription eyeglasses do ***not*** provide suitable eye protection, unless the prescription eyeglasses have been specifically manufactured for eye protection and are ANSI-certified. Prior to donning safety eyewear, inspect the frame or lenses for a "Z87" or "Z87+" marking before use.

When wearing safety goggles, ensure a snug seal between the face and goggles.



When wearing safety glasses, ensure minimal gaps between the glasses and eyes in all directions.



E. SELECTING APPROPRIATE SAFETY EYEWEAR BASED ON PRESENT HAZARDS

Present Hazard	Minimum Safety Eyewear Required (properly fitted and ANSI certified)	Additional PPE Considerations
Flying Objects or Debris	Safety glasses with side protection or goggles	Side protectors or face shield may be used to supplement the minimum safety eyewear required.
Heat (sparks, molten splash, high temperature)	Safety goggles and a face shield	Consider protection against optical radiation (e.g., reflective or screened face shield). See below radiation-related activities.
Cryogenic materials or liquids	Safety goggles and a face shield	Consider additional cryogenic-resistant PPE (e.g., cryogenic gloves).
Chemical splashes, droplets, sprays; irritating mists	Safety goggles	Face shield may be used to supplement the minimum safety eyewear required.
Nuisance and Fine Dusts	Safety goggles	Consider frequent cleaning and closing goggle vents when possible.
Various Types of Welding	Welding helmet over safety glasses or goggles. The welding helmet must be equipped with the appropriate filter lens for the present optical radiation hazard(s), such as ultraviolet/infrared radiation or glare.	Additional welding safety controls and PPE should be implemented. Consider Hot Work Program eligibility.
Infrared Radiation	Infrared safety glasses with side protection or infrared goggles, rated to protect against the specific wavelength present	Face shield or welding helmet may be worn over the minimum safety eyewear, as required.
Bright Lights/Glare	Safety glasses with side protection or safety goggles, rated to protect against the brightness of present light	Face shield or welding helmet may be worn over the minimum safety eyewear, as required.
Lasers	Laser safety glasses with side protection, rated to protection against the specific wavelength present	Additional laser safety controls and PPE should be implemented.
Ultraviolet Light	Ultraviolet safety glasses with side protection or ultraviolet goggles, rated to protect against the specific wavelength present	Face shield or welding helmet may be worn over the minimum safety eyewear, as required.

F. CARE AND USE

Prior to wearing any PPE, including safety eyewear, the user should first inspect the PPE for any signs of damage, such as scratches or cracks. If the safety eyewear is found to be damaged, UCR EH&S will then replace the safety eyewear (see Section B). Damaged safety eyewear may reduce the user's ability to see and break upon impact. Safety eyewear should be cleaned with water and lens-safe tissues. Ensure proper storage to prevent unnecessary wear and tear.

G. FIRST AID FOR EYE INJURIES

Eye Injury	First Aid Procedures
Chemical Exposure	- If contact lenses are worn, immediately remove from them from the eyes. - Flush the affected eye(s) with water for at least 15 minutes. - Seek immediate medical attention and describe the chemical exposure to the medical professional.
Blunt Impact	- Apply a cold compress without putting pressure on the eye(s). - If there is bruising, bleeding, change in vision, or pain is experienced when the eye moves, immediately seek medical attention.
Foreign Particle in Eye	- Do not rub the eye(s) and attempt to blink repeatedly. - Flush the eye(s) with water for 15 minutes if the particle is hazardous (e.g., chemical, biological). For non-hazardous particles, flush eye(s) with water until removed. - If the particle can be seen, an attempt may be made to remove the particle using a clean washcloth. - If the particle cannot be removed after numerous attempts over some time, seek immediate medical attention.