Safety glasses and shared use

Posted by Anonymous on Fri, 2020-03-13 18:10

Safety glasses and shared use:

This question updates four previous questions on the topic:

- According to the GHS standards, what is the approved standard for eye protection in schools: safety glasses or safety goggles?
- If a student wears glasses, do they need to use safety glasses as well during science experiments?
- Safety glasses and assessing risks: Are there any guidelines or regulations about sanitising safety glasses for student use? We have had some advice that student safety glasses have to be sanitised for every class. This is not feasible for a large school. We consider making safety glasses accessible and promoting wearing PPE more important than the risk of catching a cold from sharing safety glasses. How should schools decide between two different risks?
- Should shared safety glasses be decontaminated after each use? I have concerns about the Coronavirus and the use of shared safety glasses. What should we be doing to clean and disinfect them? Should we soak them in a Dettol solution? Spray with Glen-20 or clean with alcohol wipes, which are probably in short supply?

Voting:

No votes yet

Year Level:

5
6
7
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10
Senior Secondary

Laboratory Technicians:

Laboratory Technicians

Showing 1-1 of 1 Responses

Answer by labsupport on question Should shared safety glasses be decontaminated after each use?

Submitted by sat on 13 March 2020

updated 21 December 2022

Eye Protection for science experiments

The importance of eye protection during school science experiments should be effectively communicated and the wearing of appropriate eye protectors enforced. A site-specific risk assessment should be performed to determine the most appropriate type of eye protection for the activity. **In most school science situations, wrap-around safety glasses give suitable eye protection unless a school-based risk assessment recommends the use of safety goggles.**

The type of eye protection selected should be suitable to the nature of the work for which it is intended and any associated hazards in accordance with AS/NZS 1336-2014 *Eye and face protection guidelines.*[1] This eye protection should comply with the requirements of AS/NZS 1337 *Personal eye protection*.[2] Eye protection that meets this standard should have the manufacturers ID and 'AS1337' imprinted on the side.[3] Additional markings may include "I" or "F" indicating protection from medium impact or "C" or "3" indicating protection from chemical splash. Safety glasses and safety goggles have different applications.

Safety glasses

Safety glasses are an eye protector with protective lenses, most often polycarbonate lenses, mounted in spectacle-type frames, or moulded in one piece with side shields and air vents, and can look like normal spectacles.

Safety glasses are intended to provide eye protection against common laboratory hazards such as chemical and biological splashes and low-impact energy activities. The lenses must be appropriate to the protection required.

Note: while it is possible to obtain prescription safety glasses, normal prescription glasses are not considered safety glasses as they do not provide protection against impact and usually do not provide sufficient coverage against flying debris and splashes.

Safety goggles

Safety goggles should be used when greater protection is needed than provided by safety glasses e.g., where medium or high-impact energy activities are occurring or strong chemicals are in use. The lenses must be appropriate to the protection required. Goggles usually have head straps.

Safety goggles fit tightly against the face and are available in two designations:

1. *Eyecup goggles*—an eye protector consisting of two lenses mounted in cups supported by a flexible nose bridge and headband.

2. *Wide-vision goggles*—an eye protector in which the lens or lenses extend over the full width of the face, affording a large field of vision. Includes cover-all goggles designed to fit over prescription spectacles.

Considerations for choice of eye protection:

Choose for purpose:

- A site-specific risk assessment[4] should be completed to identify hazardous chemicals and physical impacts where safety glasses or goggles are required.
- In science education, safety glasses that are certified low–medium impact and carry the manufacturer's ID and 'AS1337' imprinted on the side are suitable for most activities.
- Some safety glasses styles allow them to be worn over prescription glasses, which provides the necessary protection to the wearer of prescription glasses.
- Consideration could be given to individuals purchasing prescription safety glasses. Changes to the Australian Standard now mean that prescription safety glasses must now be compliant with the new medium-impact requirements.
- There may be times, particularly in the preparation room, where goggles or a face shield are more appropriate.

Choose for fit and comfort:

- Eye protection should be suitable in size and fit and reasonably comfortable for the student or employee who is to wear it.
- Larger sizes are available for adults and senior students.
- Smaller sizes can be purchased for younger students.
- Appropriate choice of "over" safety glasses is necessary when worn over prescription glasses.
- Safety glasses are generally more comfortable and practical for student use than safety goggles.
- Goggles are prone to poor air circulation and fog up, which may create a secondary hazard. They are also more difficult to keep clean.

Cleaning, maintaining and sanitising safety glasses and goggles

It is important that safety glasses are in good condition, clean and free from dust to facilitate good vision. When safety glasses are shared, the potential for the transmission of infectious diseases is low, however it is important to consider risk control strategies to address this.

There are no regulations that specifically stipulate a procedure for cleaning safety glasses or goggles in a school environment. Australian Standards do not specify sanitising or disinfecting and are not prescriptive regarding the type of cleaning required due to the numerous different workplace settings. AS/NZS 1336:2014 Eye and face protection—guidelines[1]contain information regarding the issue, maintenance and reissue of personal eye protection. Institutions that supply and use a large number of safety glasses should ensure that their systems cater for the following requirements for safety glasses.

- **Selection:** Suitable types and fits are available for all users and situations.
- **Storage:** Storage is designed to minimise scratching and keep the glasses clean.
- **Inspection:** Regular inspections are made so that any damaged or faulty glasses are withdrawn from use.
- **Cleaning:** Regular cleaning should be conducted, before and after use by another person.

Cleaning a class set of safety glasses or goggles in between classes in a school setting is difficult to achieve, due to time constraints. Schools can either require the students to provide their own safety glasses, or they should establish systems for the suitable selection, storage and regular inspection and cleaning of safety glasses.

In the majority of cases, where schools provide class sets of safety glasses, Science ASSIST has the following recommendations.

- Regular inspections and cleaning of the class set of safety glasses should be conducted once or twice a term by the laboratory staff.
  - Scratched or otherwise damaged safety glasses should be removed from use.
  - Safety glasses should be washed with warm soapy water followed by a water rinse and then allowed to dry.
- Provision should be made for students to either bring their own safety glasses, or for students to clean a pair from the class set using one of the following methods.
  - Washing with warm soapy water followed by a water rinse and then allowed to dry.
  - Cleaning with disinfectant or alcohol wipe (under supervision).

In the school setting

Schools have a duty of care to ensure that students wear safety glasses when handling hazardous substances. There needs to be an effective system for the storage of safety glasses, as well as their cleaning and maintenance. Most information currently available recommends the cleaning of shared safety glasses in between use. [5,6]
The table below lists our recommended cleaning options, along with some advantages and disadvantages.

	Advantages	**Disadvantages**
Each student provides their own pair of safety glasses	• Correct fit is ensured if a student's own glasses are used. • Problem of possible cross infection is negated. • Students should be able to purchase safety glasses through the school to ensure that Australian Standards are met.	• Difficulties in ensuring that students will have them when required. • Difficulties with storing them if the school chooses to manage this way. • Cost to the family.

The school provides safety glasses to be shared. Regular inspections once or twice per term and regular cleaning, are conducted by the laboratory technician. Washing with warm soapy water followed by a water rinse and then allowed to dry.	• Systems are in place for the regular inspection of the safety glasses. • Minimal cost to the student. • Can be scheduled at a convenient time to be conducted by the laboratory technician.	• Risk of scratching the lens, if incorrect material is used to wash and dry the glasses. • Can be difficult to schedule this into a busy day. Multiple sets required to keep up with the cleaning. • Possibility of cross infection if glasses are accidentally used without cleaning.
Students are responsible for individual cleaning of their glasses.	• Minimal cost (bucket and detergent).	• Time consuming addition to the school program. • Difficult to ensure glasses are properly washed each time. • Risk of scratching the lens if incorrect material is used to wash and dry the glasses.

Provide alcohol wipes containing 70% isopropyl alcohol.	• Alcohol wipes are available in a compact self-dispensing canister and is a fast, simple and hygienic method to reduce cross contamination. • Alcohol wipes canisters can be kept in the lab near the safety glasses rack for ease of use. • Used alcohol wipes can be disposed of in the general waste.	• Alcohol wipes are flammable and careful classroom management is required to control their use and to avoid their misuse. When Bunsen burners are being used, place used alcohol wipes in a tub of water to reduce the risk of catching fire. • Sensitivity to the alcohol component in the wipes (or if the alcohol hasn't evaporated before wearing the glasses) could irritate the eyes. • Protection is dependent on the students' ability to correctly clean the safety glasses. • Possibility of damage to the lens material from the alcohol component in the wipes. • On-going cost to supply wipes and onus on the school to ensure that alcohol wipes are available at all times.

Other considerations

Selection of safety glasses: The wearing of prescription glasses cannot, under any circumstances, be considered as a substitute for normal eye protection.[7] Over-glasses, goggles or face shields should be worn over prescription glasses as appropriate.

Storage of safety glasses: Safety glasses should be properly stored in a suitable rack in a dry place to avoid accumulating dust as well as to avoid the scratching of lenses.

Maintenance of safety glasses: The major issue with safety glasses is that they can become severely scratched and reduce visibility, which causes an additional hazard. Paper towel and some tissues should not be used as they may contain abrasive materials, which will scratch the lens. Other problems with safety glasses are the snapping of the frame in the centre due to students over-flexing the lenses when putting the goggles on or off.

Contact lenses: Wearers of contact lenses may face additional hazards where items enter the eye. For this reason, special consideration should be given to the type of eye protection or whether contact lenses should be worn for particular activities.[7]

Transmission of infectious diseases: The risk of environmentally associated laboratory infections is rare. All of the following conditions, referred to as the "chain of infection", are required for an infection to be transmitted.

- The presence of a virulent pathogen in a concentration high enough to cause disease.
- The ability of the pathogen to be transmitted to the host from the environment.
- The susceptibility of the host to contract a disease from the pathogen.
- The pathogen is able to survive conditions of the environment to remain active.

Washing with warm soapy water followed by a water rinse and then allowed to dry is considered sufficient to decontaminate shared safety glasses.

A conversation with Health Direct[8] confirmed that there is no established protocol for cleaning shared safety glasses, so they suggested good general cleaning practices and the need for good handwashing and hygiene. It should be noted that PPE means **personal** protective equipment and should not really be shared.

Health direct:

- **Recommend washing safety glasses in a soap/detergent solution, followed by rinsing and air drying.** Concerns were raised about 30+ students putting their hands into one tub of soapy water as this would increase the load of contaminants to the water.
- **Discouraged the use of other products such as Dettol, Glen20**: which may contribute to an allergic reaction in some people, especially given that safety glasses are worn near the eyes. We don't want to create a new problem while we are trying to solve another problem.
- **Suggested other options which include**
    - Using alcohol wipes (however this could be expensive and difficult to source)
    - Using 70% alcohol sprays (however there are significant risks associated with the school science setting such as potential open flames, unpredictable and poor student behaviour - The teacher would have to make sure that there are no open flames, hot surfaces, that students are well supervised and it is appropriately stored)

Science ASSIST recommends that schools familiarise themselves with the most up to date information about the Coronavirus. Active promotion of good hygiene practices and posters containing information about how the virus spreads, with the correct methods of hand washing and drying, are recommended to protect against infections.[9]

As the situation is continuously changing, see the latest updates from the Australian Government Department of Health regarding Coronavirus (COVID-19)[10,11,12]

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