

Personal protective equipment

Introduction

Personal protective equipment (PPE) is equipment to be worn or held by a person preventively as protection against risks that threaten their health or safety. A safe workplace that includes personal safety for employees can prevent illness and even disability in employees. The use of personal protective equipment is the last step in the occupational hygiene strategy. They should only be worn when all other steps of the occupational hygiene strategy (source measures, technical and organizational measures) have been completed and risks cannot therefore be effectively addressed by other means.

Personal protective equipment, when used correctly, protects vulnerable and/or vital parts of the body, such as the head, eyes, ears, respiratory system and hands and feet. If personal protective equipment is not used, or not used correctly, then apart from the employer, the employee may also be at fault. Employer and employee are both responsible for correct use.

Working method

The choice of whether or not to use personal protective equipment follows from the risk assessment and evaluation. An important condition is self-evident: the selected protective equipment must provide good protection against the hazard identified in order to reduce the potential risks arising from it as much as possible. In addition, it is very important that the protective equipment is used properly by the employee. Therefore, it is recommended that the supervisor, together with the Armico and the employee, discuss the most optimal protective equipment for the specific work situation.

The use of personal protective equipment is a temporary measure and the equipment should only be used for short-term activities. Frequent evaluation of the use and process is an obligation of employer and employee. Finally, it is recommended to use personal protective equipment in case of a SPILL (chemical/biological/radiological).

The following paragraphs detail the most common personal protective equipment for the most common hazards within the faculties FHML-FPN.

Laboratory coats

When entering the laboratory areas, one should wear a clean closed laboratory coat (even for a short-term visit). For the specific ML-I and ML-II areas, laboratory coats with a green collar are mandatory. In addition, there are other locations including the Radionuclide Laboratory (RNL), the dissecting rooms of anatomy and the CPV that have additional rules. The department's Armico can inform you about this.

Company clothing of the MUMC is not considered UM clothing and is not personal protective equipment in this context.

A centralized distribution facility for laboratory coats has been established within the FHML. This COV can be found in the middle part of the 2nd floor (G2.202A, next to the Biobank). The cupboard for dirty laboratory coats can also be found here. This area is only accessible to UM staff with your own UMcard (card reader). For more information about this facility, contact the COV administrator.

Safety glasses

Laboratory work can lead to an increased risk of eye injury. Therefore, wearing safety glasses is an absolute requirement.

The number of historical splash incidents in recent years has once again confirmed that wearing safety glasses is definitely not an unnecessary luxury. And that is why wearing safety glasses has been made mandatory from 2017 within the FHML-FPN laboratory areas and within other locations where a risk of splash and/or mechanical impact is present (such as a workshop or technical area, for example).

Only safety glasses complying with the NEN-EN 166 standard may be used within the aforementioned laboratories and other areas. Safety glasses come in all shapes and colors, but the most important aspect is wearing comfort, especially if one has to wear them for several hours a day.

Note, that safety glasses should be in good condition and should be replaced in case of damage or outdated condition/fragility. To enjoy safety goggles for as long as possible, it is recommended to store them in an appropriate goggle storage box.

Face shields

Face protection, also known as face shield, should be used when there is a risk of injury to the whole face, and the use of safety glasses alone is not enough. The face protection should not restrict the field of vision of the person using it. It is important to have a good view of the work and the surroundings.

In work where particles can fly around, there is a risk of injury to the face. Face protection is also necessary against splashing hazardous and/or hot/cold liquids (e.g. working with liquid nitrogen) and or working with UV light (EN 170, 2002). A face shield (EN 169, 2002) should also be worn when welding to avoid skin and eye damage.

To use face shields safely, they must have the right fit and regular maintenance and inspection must also be carried out. When doing so, also note the maximum service life as stated by the manufacturer.

Laboratory gloves

As part of European tenders, UM conducted a tender for standard laboratory gloves. (<https://umemployee.maastrichtuniversity.nl/groep-menu/carim/news/obligation-to-use-selected-lab-gloves-and-order-from-contracted-supplier---verplichting-gebruik-geselecteerde-labhandschoen-en-bestelling-bij-gecontracteerde-leverancier>). Here, the assessment was on safety and quality of the gloves, price of the supplier services and products and security of supply. The current gloves are available in short and long versions and suitable for most substances and processes used in the FHML and FPN laboratories. Wearing a glove ensures that you are protected from exposure/penetration of a chemical substance for a limited time. This is called the breakthrough time of a glove. Breakthrough times of gloves are not the same for all substances. Contact HSB for specific breakthrough times.

If a glove is visibly damaged during laboratory work, it should be removed safely and replaced with a new disposable glove. During laboratory operations, regularly check the status of gloves for damage and observe the breakthrough time.

Some tips/obligations for using gloves:

- Do not use gloves when not needed,
- Use one glove instead of two whenever possible. This prevents contamination, encourages conscious working and reduces glove use, risk of skin irritation and extra costs.
- Remove gloves that have been splashed on.
- Outside the laboratory (corridors and general areas), the 'one glove principle' applies.
- Use gloves only once.
- Wear the glove for a maximum of 2 hours.

For substances and processes for which the current gloves are not suitable, one can deviate from the selected gloves, for this one should contact HSB.

Cryogenic gloves

Cryogenic gloves are special gloves that protect the hands and arms from the dangers of working at/with very low temperatures down to -160 °C. The basic version is water-repellent and are suitable for protection against splashing liquid and for work at very low temperatures, for example: handling dry ice and working in freezers. For applications with liquid nitrogen, the waterproof version is recommended. Store cryogenic gloves in a clean and dry place. Check the condition of the gloves regularly and replace them if they show wear or tears: if in doubt, do not take any risk.

A cryogenic glove should never be immersed in liquid nitrogen!

Heat gloves

On the other hand, gloves are available for handling heat sources. Note do not use cryogenic gloves for this.

Respiration protection

Respiratory protection allows breathing air free of hazardous substances. This protection may be needed as additional protection in the workplace if source, technical and organizational measures prove inadequate. The form in which hazardous substances can occur in the air are gases, aerosols, (fine/ultrafine) dust and fibres.

The risks are not always the same. How great the risk to a person is depends on:

- Which substance is present;
- How much of the substance is present;
- In what form the substance is present;
- Vapour pressure and health limit value
- How long a person is at work in polluted air.

The consequences of inhaling hazardous substances depend on exactly what has been inhaled. Various symptoms can occur, and this can happen immediately after inhalation. But symptoms and health damage can also occur only after a longer period of time.

Various activities require different types of masks to reduce risks, for more information contact the department's Armico.

Hearing protection

Impaired hearing due to noise exposure in the workplace is a common occupational disease. Impaired hearing can lead to serious social and medical consequences. Hearing protection is necessary to prevent noise-induced hearing loss. Noise-induced hearing loss occurs when the noise level (volume) in the ear canal is too high. For employees this starts at 80 dB(A). Above this value, the employer must offer hearing protection according to the Occupational Health and Safety Act. There are several types of measures that can be taken in the workplace to protect the hearing of employees and others in the workplace, such as purchasing an alternative source, enclosing the source and fitting sound-deadening/repellent material. For more information, contact your department's Armico.

Wearing hearing protection can have a negative effect on normal communication in the workplace. This could include less contact with colleagues and not being able to perceivably hear alarm signals from equipment or even a slow-whoop. Make sure this does not lead to other unwanted risks and discuss wearing with immediate colleagues.

Safety shoes

Safety shoes are required in work where heavy objects are lifted, there is a risk of falling objects or sharp materials on the ground. Safety shoes are also mandatory in situations where the workplace can be slippery. There are different types of safety shoes available, each with their own safety standards. These include safety shoes with a steel toecap, safety shoes with a steel sole and safety shoes with an over-nose. It is important to choose the right safety shoe to suit the work being carried out.

Information and advice

For more information and advice on the various personal protection equipment, contact the Armico or HSB

List of abbreviations

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| Armico | Occupational Health & Safety & Environment Contact |
| COV | Central Research Facility |
| FHML | Faculty of Health, Medicine and Life Sciences |
| FPN | Faculty of Psychology and Neuroscience |
| HSB | Health, Safety and Buildings |
| PPE | Personal Protective Equipment |
| UM | Maastricht University |