

# APPENDICES

## to the General Laboratory and Workshop Regulations of the University of Vienna

### I. Noise and vibrations

Protecting the health of all persons in the University of Vienna facilities from impairments and damage caused by noise and vibration is compulsory.

Noise = any type of sound in an audible frequency range

Vibrations = mechanical oscillations or agitations that are transferred to the human body by direct contact.

A differentiation is made as follows:

- Hand-arm vibrations: these are mechanical oscillations, which, when transferred to the hand-arm system of the person, cause hazards to health and safety, particularly circulatory disorders, bone or joint damage, neurological or muscular illnesses.
- Whole-body vibrations: mechanical oscillations, which, when transferred to the entire body, can cause hazards to health and safety, particularly back pain and damage to the spine.

#### Trigger value

The exposure should not exceed the following trigger values, as far as this is possible according to the state-of-the-art

Hand-arm vibrations: 2.5 m/s<sup>2</sup>

Whole-body vibrations: 0.5 m/s<sup>2</sup>

Noise that is harmful to hearing: 80 dB

For employees in areas where the trigger value for noise is exceeded, hearing protection must be provided.

#### Exposure threshold values

The following exposure threshold values must not be exceeded:

Hand-arm vibrations: 5 m/s<sup>2</sup> (adolescents: 2.5 m/s<sup>2</sup>)

Whole-body vibrations: 1.15 m/s<sup>2</sup> (adolescents: 0.5 m/s<sup>2</sup>)

Noise that is harmful to hearing: 85 dB

For employees in areas where the exposure threshold value for noise that is harmful to hearing is exceeded, the hearing protection must be selected, such that the individual exposure of the employee does not exceed the exposure threshold value.

Employees in areas where the exposure threshold value for noise that is harmful to hearing is exceeded, must wear this hearing protection.

A list of employees exposed to noise must be kept, pursuant to Article 65 Par. 4 L 6 of the Employee Protection Act, who are personally exposed to noise above the exposure threshold value for noise that is harmful to hearing, whereby the individual effect of the personal protective equipment is disregarded.

Areas in which an exposure value for noise that is harmful to hearing or, with the transfer of vibrations through the floor, the exposure value for whole-body vibrations is exceeded, must be identified appropriately. If this identification is not possible and is justified on the basis of the exposure hazard, these areas must also be delineated and access restricted.



### **Threshold values for specific rooms**

Rooms in which mainly mental activities are carried out: 50 dB

Rooms in which basic office activities or comparable activities are carried out: 65 dB

In lounges or on-call rooms, medical rooms and residential rooms, whereby noises that are caused by persons are not included: 50 dB

In the rooms listed above, the exposure to whole-body vibrations must be kept as low as possible and limited to the trigger value.

## **II. Handling hazardous materials**

The scope of Appendix II covers all laboratories incorporated into the organisational structure of the University of Vienna, in which

- experiments, tests, analyses or measurements are carried out and
- hazardous materials are handled

With all work carried out in the laboratory premises, it is compulsory to wear a cotton lab coat and sturdy, closed and non-slip shoes. Depending on the activity, safety glasses or a face protection visor shall also be worn. If required, in case it is specified in the respective operating instructions or safety data sheet, additional personal protective equipment shall be worn, such as protective goggles, face protection, gloves, breathing protection or also hearing protection. All protective equipment must be kept protected from contamination.

The safety data sheets for all work materials must be collected and kept so that they are easily accessible to all persons working in the laboratories. This can take place in electronic form, e.g. by saving on the institute server. The storage location of all safety documentation, such as safety data sheets, must be part of the instruction for persons working in the laboratory.

Prior to initially handling hazardous materials, the users should determine the hazards that could occur from the materials or possible reactive products. This can take place using the chemical list in the laboratory, the operating instructions, safety data sheets or the hazard information on the original packaging.

All containers shall be labelled with the name of the work material, the preparation, the hazard symbols and descriptions. On larger packaging, from a volume of approx. 1 l, the R-phrases and S-phrases must be provided. If this packaging is for the purpose of longer storage, the name of the manufacturer should also be specified.

Eyewash bottles, chemical bonding agents – their type must correspond to the work materials used – and environmentally-dependent breathing protection equipment, so-called emergency escape hoods, must be kept available. The choice of breathing protection filter must be in accordance with the hazardous materials used.

Storage of food, which is intended for consumption by persons, in laboratory areas where hazardous materials – regardless of the type – are stored, kept or converted, is prohibited. In particular, food must not be kept in refrigerators that are simultaneously used for storing chemicals.

The storage of hazardous material at the workplace, which exceed the daily requirement, is prohibited.

Hazardous materials must never be stored in food packaging.

Smoking is strictly prohibited in all laboratory premises. Eating and drinking is also prohibited in these areas.

Anyone who carries out an experiment may only leave the laboratory workplace, if constant monitoring is not necessary, or if a colleague, who is informed about the progress of the experiment continues the monitoring. With hazardous activities, at least two persons must be present.

Experiments carried out without supervision must be provided with signs that are easily visible. These must include the following details: Reaction type, chemicals used, base quantity, start of experiment and approximate reaction period.

Apparatus in which lightly volatile, explosive, combustible or toxic and foul smelling work materials are being converted or created, must be set up in an exhaust hood. A similar procedure must be following for reactions where gases occur, or can occur, as a main or subsidiary product.

During operation, the front sliders on the exhaust hood must be kept closed, whereby a sufficiently dimensioned supply air opening must always be available between the front window and the fume cupboard work surface.

Defective flues must not be used and must be immediately reported to the person responsible for the laboratory.

Exploratory and analysis devices may only be used after instruction regarding possible hazards and subsequent approval by the person responsible for the laboratory.

Work materials that have leaked or fallen aside must be immediately removed by the person causing it in the entire laboratory area, but particularly in the area of the weighing scales, if necessary, using chemical bonding agents.

Chemicals must be reviewed at least once per year regarding the necessity of them remaining in the laboratory and surrendered or disposed of.

The corresponding definitions of the Chemical Act 1996 BGBl. [Austrian Federal Gazette] I No. 53/1997 as amended shall apply (ChemG 1996) and the Employee Protection Act BGBl. I No. 450/1994 as amended (ASchG 1994).

Hazardous materials are all materials that display **at least one** of the following **characteristics**:

- **Explosive**

Explosive



**E = explosive**

- **Combustible**

Oxidizing agents, extremely flammable, highly flammable or flammable characteristics



**O = oxidizing agents**



**F+ = extremely flammable / F = highly flammable**

- **Harmful**

Very toxic, toxic, harmful (less toxic), corrosive, irritant, carcinogenic, mutagenic, toxic for reproduction or sensitising characteristics

Fibrogenous, radioactive



or biologically inert characteristics



**T+ = very toxic**



**T = toxic**



**Xn = harmful**



**C = corrosive**



**Xi = irritant**

- **Groups 2, 3 and 4 biological materials**



Group 2: Illness and risk to employee, prevention and treatment possible













Group 3: Serious illness and serious risk to employee, prevention and treatment possible

Group 4: critical illness and critical risk to employee, prevention and treatment not possible

### **Definitions:**

- **very toxic:** Materials or preparations that can cause acute or chronic health damage or death, if inhaled, swallowed or absorbed through the skin, in small quantities, e.g. nitrogen dioxide, hydrogen cyanide
- **toxic:** Materials or preparations that can cause acute or chronic health damage or death, if inhaled, swallowed or absorbed through the skin, in small quantities, e.g. chlorine, lindane, quicksilver
- **harmful:** Materials or preparations that can cause acute or chronic health damage or death, if inhaled, swallowed or absorbed through the skin, e.g. n-hexane, methyl chloride, glycol
- **corrosive:** Materials or preparations that can destroy living tissue through contact, e.g. sodium hydroxide anhydrous
- **irritant:** Materials or preparations that - without being corrosive – can cause infections through short-term, longer or repeated contact with skin or mucous membranes, e.g. acetone, sodium carbonate
- **carcinogenic:** Materials or preparations can cause or increase the frequency of cancer, if inhaled, swallowed or absorbed through the skin, e.g. asbestos, benzol
- **mutagenic:** Materials or preparations that can cause a change to genetic material, through which inheritable damage can be caused, through inhaling, swallowing or absorbed through the skin, e.g. acrylamide
- **toxic for reproduction:** Materials or preparation that can cause non-inheritable damage to reproduction or increase the frequency of this damage (harmful to reproduction), impairment of physical or mental development of offspring after birth or impairment of male or female reproductive functions, if inhaled, swallowed or absorbed through this skin, e.g. lead, dimethylformamide
- **sensitising:** Materials or preparations that can cause oversensitivity reactions, if inhaled or through skin contact, e.g. grain flour dust, latex, formaldehyde
- **fibrogenous:** Suspended matter that can cause lung diseases, which accompanies the formation of connective tissue, if inhaled, e.g. quartz dust, asbestos
- **biologically inert:** Dusts that are neither toxic nor fibrogenous, which do not cause any specific illnesses, however can cause impairment to the functions of breathing organs, e.g. fine iron oxide dust

**The following joint storage prohibitions must be observed:**

Joint storage prohibitions						
	0	+	0	-	-	-
	+	+	+	+	0	-
	0	+	+	0	-	-
	-	+	0	+	-	-
	-	0	-	-	+	-
	-	-	-	-	-	+
Explanation of symbols	0 check (e.g. acids with acids: yes; acids with alkalines: no)					
	+ store together			- do not store together		

Materials that are combustible, flammable, highly inflammable or explosive, or from which such reactive products could result, may only be stored in explosion-protected devices (dry cabinets, refrigerators).

Transporting hazardous materials and pressurised gas bottles with one of the lifts is basically only permitted, if no additional persons are also being transported.

Larger containers of acids, alkalines or solvents must be transported in transport containers, e.g. a tub.

Disposal instructions and correct conduct in case of accidents, such as spilling the work material, must be noted and observed, if required.

Reactive waste is to be handled according to the instructions of the laboratory personnel.

For storage and later disposal of laboratory waste, the designated collection containers are to be used.

Toxic materials and preparations (as per ChemG 1996 as amended) shall be kept in closed off, specifically identified, locked rooms or own toxic cabinets. They must not be stored out in the open and unsupervised in the laboratory. The authorised toxic substance receiving officer of the sub-unit shall be responsible for administration of the toxic substances.

Anyone who uses toxic substances must keep records regarding the origin and location of each toxic substance, with the following details:

- Name of the toxic substance (chemical name, trade name)
- Quantity of the toxic substances purchased,
- Reference to the purchase document (delivery note, invoice, etc.),
- Date of purchase,
- Name of supplier,
- Quantity used and purpose, in case of processing a toxic substance, also the name (chemical name, trade name) of the resulting products and the respective quantity of each individual toxic substance used for this.

In rooms in which toxic substances are stored or regularly used, the telephone number of the Poison Information Centre (as per GiftVO [Poison Regulations] as amended) shall be posted in an easily visible location. If this room has no landline telephone line available, the telephone number of the Poison Information Centre must also be posted by the nearest landline telephone.

Sucking up liquids in pipettes by mouth is prohibited. The appropriate suction balls or other pipette aids must be used for this.

### **III. Basic first aid measures**

#### **III.a. Poisoning**

##### **A. Inhalation (breathing in) of gases/vapours/aerosols**

- Rescue injured persons and take them to fresh air; particularly pay attention to self-protection (breathing protection mask)!
- Always notify the emergency services!
- Immediately administer artificial respiration, if the person has stopped breathing. If appropriate, apply an oxygen mask
- Only transport or situate injured persons in a lying down position
- In any case, consult a physician regarding possible delayed complications after a symptom-free interval

##### **B. Ingestion (swallowing) of poisons (liquids or solids, which are not corrosive or solvents)**

- Secure the poison
- Notify emergency services and Poison Information Centre (Tel. 406 43 43)
- First aid measures, if necessary
- Keep person still and protect from loss of heat
- Treat any ingestion of unknown chemicals like a poisoning
- In no case administer supposed standard assistance measures, e.g. administering milk, salt water or similar
- Do not induce vomiting
- Only administer active charcoal at the explicit recommendation of a physician

##### **C. Poisoning through skin contact**

- Immediately remove the injured person's clothing (avoid putting yourself into danger)
- Clean affected skin areas with plenty of water, possibly soap, but never with other chemical substances, do not use hot water or rub vigorously
- Notify emergency services

#### **III.b. Chemical burns**

##### **A. Chemical burns on the skin**

- Immediately remove the injured person's clothing (avoid putting yourself into danger)
- Rinse off with plenty of running water (at least 15 minutes) do not carry out any neutralisation
- Cover exposed burns in a sterile manner and consult a physician



## **B. Chemical burns on the eyes**

- Always notify the emergency services
- Rinse with plenty of running water (at least 15 minutes) do not carry out any neutralisation
- In order to avoid also injuring the healthy eye, the rinse water must not enter into the other eye, e.g. the affected eye must be lower than the healthy eye (head horizontal). Then rinse from inside (nose) to outside (cheek) with plenty of running water or an eye shower/eyewash bottle.
- Bandage the eye (blindfold)

## **C. Internal chemical burns**

- Always notify the emergency services
- Call the Poison Information Centre (Tel. 406 43 43)
- Keep the person still and protect him/her from heat loss until the emergency services arrive
- Do not carry out any attempts at chemical neutralisation
- Only administer water after consultation with the Poison Information Centre and if the injured person is willing, in careful sips.

### **III.c. Open wounds or mechanical injuries**

#### **A. Minor bleeding**

- Do not touch or wash out wound, do not remove any foreign objects from the wound
- Cover wound in a sterile manner, apply protective bandage, do not disinfect
- Visit a hospital

#### **B. Heavy bleeding**

- Notify emergency services
- Pay attention to symptoms of shock, shock position, keep warm
- Apply pressure bandage. Apply wound pad or similar with bandage as tightly as possible
- Keep injured extremity elevated

#### **C. Life-threatening bleeding**

*Such bleeding exists if arteries are opened. Blood is light red, bleeding intermittent*

- Immediately notify emergency services
- Put on gloves, press down using fingers
- Tie off with non-constricting material (triangular bandage, wide belt, etc.) Only tie off on the heart-side of the injury and only on the thigh or upper arm. Do not remove ligature.
- Note time of tying off!!!

### **III.d. Burn wounds**

#### **A. Minor burns or scalds**

- Immediately cool with cold, running water (at least 15 minutes)
- Do not open burn blisters
- Do not apply any ointments, powder, oil or similar to the burns or scalds
- If in doubt, consult a physician

#### **B. Major burns or scalds**

- Notify emergency services
- In case of scalds, immediately remove clothing (cut open)
- With burns, remove clothes if they are not adhering to skin
- Cool sufficiently with cold, running water (at least 15 minutes)
- Do not apply any ointments, powder, oil or similar to the burns or scalds
- Cover open burn wounds in a sterile manner (aluminium-coated wound bandages)
- Protect from heat loss

With burns over large areas, drink plenty of water in sips