Hochschule Karlsruhe
Technik und Wirtschaft
UNIVERSITY OF APPLIED SCIENCES

Laboratory Rules

Laboratory

Hochschule Karlsruhe

Technik und Wirtschaft

EIT - N

Contents

1. General Remarks

- These laboratory rules are the general instructions required by German law (§ 14 Gefahrstoffverordnung) for persons working in the laboratories of the institute.

- These rules and regulations must be followed by everyone working or visiting a laboratory. The laboratory supervisors are required to inform their new collaborators, prior to their starting practical work, about the laboratory rules and to repeat the instruction annually or more frequently.

- The laboratory rules are based on the “Guidelines for Laboratories” (“Richtlinien für Laboratorien”, ZH 1/119, German and English version in every laboratory) by the Berufsgenossenschaft Chemie, and the German legal regulations, the “Technische Regeln für Gefahrstoffe”, and the “Technische Regeln für brennbare Flüssigkeiten”. More detailed information can be found there. Similar regulations have been compiled for universities (GUV 16.17 on laboratories and GUV 19.17 on hazardous substances).

- Every person working in a laboratory is required to obtain the supplementary information for his own work from **Material Safety Data Sheets (MSDS) of the chemicals** used. MSDS are to be found next to every experimental set-up or are supplied by M. Aleksandrova (N - 310,Tel. 1324) on request.

2. Working in the Laboratory

- The working time of the lab is from **9:00 to 17:00** o'clock. The use of the lab outside this time is for students prohibited!

- The laboratory supervisors determine which work under their supervision is so dangerous that it must be carried out only when a second person is present. This person is required to be knowledgeable about this work and the measures to take in case of emergencies. The regulations for "Hazardous Work and Working Alone" must be observed for the more dangerous types of work.

- You must use the required personal protection safety equipment when working in the laboratory. The type pf personal protection needed is to be found in MSDS.

- You may not leave your workplace during an experiment unless a colleague replaces you. Permanent supervision is not required if before leaving you have made sure that the components involved need no further adjustment. Experiments running overnight have to be done with appropriate precaution against the possible failure of components in use.

- After end of the experiment the working place must be thorougly cleaned.

- Before leaving the laboratory in the evening, make sure that gases, pressurized air, water, and electricity are switched off to the extent possible

3. Hazardous Materials

- Hazardous materials are materials with at least one of the following properties: Toxic, carcinogenic, mutagenic, embryotoxic, harmful to health, corrosive, irritant, fire promoting, easily inflammable, explosive, or hazardous to the environment. Containers of these materials must be labelled with the content's name and the hazard symbol (see Table 1 next) .

- The R and S phrases of bought products give additional information on risks and secure handling and are supplied by M. Aleksandrova (N - 310,Tel. 1324) on request.

Table 1. Hazard Symbols

Merkmal	Kürzel	Symbol	Beispiele
explosive	E		Nitroglycerin
oxidizing	O		KNO_3
extremely flammable	F+		Acetylen
flammable	F		CH_3OH, CH_3COCH_3
very toxic	T+		NO_2
toxic	T		NH_3 Gas
carcinogenic	K	-	Asbest, Benzin
harmful	Xn		Chloroform, Benzin
acidly	C		HCl, H_2SO_4, Acid, Base
irritant	Xi		Aceton, Propanol, Hydrofluorether
hazardous to the environment	N		Benzin, Hydrochinon, Naphthalin
embryotoxic	-	-	Bleiazid

- If not found next to the set-up Material Safety data sheets (MSDS) can be provided by M.Aleksandrova before hazardous materials can be used in the laboratory. The data sheets also describe first aid measures.

- In laboratories, where hazardous materials are used, eating, drinking,and smoking are prohibited.

- Poisonous materials have to be kept in locked cupboards.

- Fire promoting and easily inflammable materials have to be stored separately

- All hazardous materials have to remain in the laboratory; they are not allowed in other areas such as offices.

- Experiments having the potential to liberate hazardous vapour or dust in dangerous concentration or quantity have to be performed in fume hoods.

- The front window of the fume must be as closed as possible!

- Transport packed hazardous materials only in containers, e. g. buckets, which are large enough to hold all of the hazardous material if its package fails. The joint transport of packed hazardous materials and persons in lifts should be avoided because of the possible escape of dusts and gases

4. Compressed and Liquefied Gases

- The laboratory supervisors are required to instruct their students on the correct use and specific dangers of working with compressed-gas cylinders before use.

- The gas bottles must be fixed with a chain.

- Liquid nitrogen must be transferred using personal protection equipment (goggles, face shield, gloves). The transport of all liquefied gases in an elevator together with persons is forbidden.

5. Disposal of chemical Waste

- The individual types of waste are to be collected separately so that hazardous reactions are ruled out.

- Containers are to be provided which are suitable in size and design for the collection of the individual types of waste and which can be transported safely by the employees. In particular, the containers must withstand the chemical and mechanical load to be expected from the goods to be filled into them

- Collection containers for hazardous material wastes are to be kept in the laboratories in such a way that they do not impair the normal laboratory work.

- In the provision and filling of these collection containers it is to be ensured that no gases or vapours containing noxious substances in hazardous concentrations or quantities can enter the laboratory air.

- Containers with chemical waste must be labeled as follows:
    - Substance
    - Hazard symbol
    - If possible dissolution factor

6. Conduct in Dangerous Situations

- Remain calm
- Take care of personal safetyten
- Help injured persons
- Call by telephone, an Betreuungsperson
- Call by telephone in first aid (“Ersthelfer”) – A list of their telephone numbers is available in each laboratory (see Table 2)

Table 2. Important phone numbers

Hochschule Karlsruhe, Technik und Wirtschaft EIT - N		
Name	**Arbeitsplatz / Raum-Nr. / Adresse**	**Tel.**
Ausgebildete Ersthelfer am EIT-ST :		
Thomas Eckardt	N - 205	**1260**
Sicherheitsbeauftragter des EIT –N :		
Thomas Dörnhöfer	N - 308	1336
Heidi Kurpat	N - 306	1259
Sicherheitsfachkraft Abt. Sicherheitswesen Hochschule Karlsruhe):		
Weitere wichtige Rufnummern:		
Unfallarzt		**0-28190**
Rettungsleitstelle (ASB, DRK, Malteser, etc.)		**0 -19222**