RISK ASSESSEMENT IN THE WORKPLACE OF A LABORATOTY TECHNICIAN IN A CHEMISTRY AND PHYSICAL CHEMISTRY LABORATORY

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Abstract:*The risk assessment in the workplace and work environment represents the basic tool that ensures a detailed insight into the overall occupational safety and health, as well as the simplified work process management in terms of the occupational safety and health. This is very important for the efficient and effective accomplishment of tasks in the observed organization, and primarily for the high level of the occupational safety and health of its employees. The aim of this paper is to present the act on the risk assessment in the workplace of a laboratory technician in a chemistry and physical chemistry laboratory, in its standardized and legally established form. The popularity of the issue analyzed in the paper helps to create the risk prevention culture as a precondition for the establishment of the occupational safety and health culture.*

Key words:*risk assessment, act on risk assessment, occupational safety, occupational health*

1. INTRODUCTION

The acton risk assessment in the workplace and work environment, or a written act on the performed analysis of existing hazards and harmful factorsin the workplace, and on the estimated risk of work-related injuries, health impairments or diseases, is the basic document in the field of occupational safety and health. Owing to this document, employerscan gain insight into the overall working conditions in their workplace and work environment, and therefore set priorities and determine measures to be taken in order to efficiently eliminate or reduce risks, thus achieving permanent improvement of the workplacesafety and health in their business organizations.
Once they identifyhazards and harmful factors in the workplace and work environment, and evaluate the risk of potential injuries, professional or work-related diseases, employers are obliged to adoptthe risk assessment act, and determine how to apply risk elimination measures, and establish such working conditions that would ensure a safe and healthy workplace for their employees. The implementation of the measures defined inarisk assessment act represents the law, obligation and responsibility of both responsible persons and employees.Anact on risk assessment in the workplace and work environment serves as the basis for the preparation of other written documents, orders and governing acts aimed at ensuring workplace safety and health.
This paper describes the process of preparing the Risk Assessment Act for the workplace of a laboratory technician in a chemistry and physical chemistry laboratory. Prior to the preparation of the act, the plan for conducting the risk assessment process was made by an expert, and approved by the employer. Before the plan, the employer made a decision on the initiation of the risk assessment process,and appointed persons responsible for carrying it out.
The plan for conducting the risk assessment process provides an overview of the legal documents in accordance with which the act has been prepared, and which have also served as the information sources for this paper. The plan alsodefines tasks, interrelationships and responsibilities of the people competent to perform risk assessment. The employer has decided who the competent persons would be, and created the team. The plan provides the analysis of the risk assessment methodology, as well. The KINNEY method has been used, according to which the risk level (R) is defined as the product of the severity of consequences (P), likelihood of occurrence (V), and frequency of occurrence (U), in compliance with the equation $R = P \cdot V \cdot U$. The rest of the plan of the implementation of the risk assessment

process defines the stages to be followed, and sets the approximate deadlines for their completion. It also defines the ways of collecting the documents needed for the risk assessment, methods of providing risk assessors with necessary information, the ways of obtaining data from employees, the modes of cooperation with employees' representatives and the instruments for their implementation.

2. RISK ASSESSMENT ACT STRUCTURE

Pursuant to the regulations governing risk assessment, a risk assessment process compriseseight mandatory parts, and the structure of a riskassessment act should reflect this. The first part provides information on the employer. The second part includes the description of technological and work processes, the description of laboratoryequipment and its classification, as well as the description of personal protective equipment. The description of the organization of work represents the next part of a riskassessment act. The fourth and fifth part involve the identification of hazards and harmful factors in the workplace and work environment, and the assessment of the risk posed by the identified hazards and harmful factors, which are the most complex processes comprised of numerous sub-processes. The essential part of a risk assessment act is that which defines means and measures to eliminate, reduce and prevent risk in the observed workplace and work environment. The remaining part of a riskassessment act includes the conclusion, potential amendments to,and changes of the act.

2.1 General Information on Employer

In the first part of an act on risk assessment in the workplace and work environment all the relevant information on the employer is provided: (1) itsbusiness name, headquarterslocation, i.e. the employer's address: (2) the employer's main activity; (3) information on the persons participating in the risk assessment process. In order to describe the process of preparing the act on risk assessment for the workplace of a laboratory technician in a chemistry and physical chemistry laboratory, the abovementioned workplace in the laboratory of a higher education institution has been taken as an example. Therefore, the first part of thisRisk Assessment Act provides the following information:
Employer's business name: Business and Technical College of Applied Sciences
Work unit: Chemistry and physical chemistry laboratory
Employer's headquarters address: Užice, Trg Svetog Save 34, 31000 Užice
Employer's main activity: higher education
Work unit activity: performing chemical and physicochemical analyses of the environment and food products, and issuing the reports on performed analyses.
Subsequently, the information on the personsappointed to carry out the risk assessment process and those taking part in the process is provided.

2.2 Description of technological and work processes, description of laboratory equipment and its classification, and description of personal protective equipment

The second part of the Risk Assessment Act comprises three chapters: (1) the description of technological and work processes; (2) description of laboratory equipment and its classification; (3) description of personal protective equipment. The purpose of these descriptions is to facilitate the identification of hazards and their harmful effects.

Description of technological and work processes
Thischemistry and physical chemistry laboratory is a laboratory which provides services and expertise in compliance with the Rules of Procedure adopted by the Council of the abovementioned higher education institution. In addition to providing professional expertise, its scope of services includes chemical and physicochemical assessment of the environment (checking the quality of drinking water from central and local waterworks, checking the water quality of swimming pools, as well as sediment, mud, soil and air pollution analyses, and the analysis of the distribution of solid and liquid waste substances). It also performs the analyses of food, and general use product safety, as well as food quality controls in institutions providing education for children, canteens, etc. At clients' requests, samples (of food, surface water, underground and waste water, and sediments) are collected, and their physicochemical and chemical characterization is performed.
Laboratory technicians in this laboratory for chemical and physicochemical analyses receive the collected samples, prepare and perform laboratory processes such as measuring, analysing, testing and checking specific samples in accordance with standards or specially designed instructions; they decide whether certain chemical substances shall be used, perform calculations and daily reports on their work, keep their workplace, laboratory glassware, instruments and equipment clean.

Description of laboratory equipment and its classification

The following facilities are used as laboratory work areasand auxiliary space: in this laboratory for chemical and physicochemical analyses, all the work is done in two rooms occupying about 100 m^2 of high quality laboratory space. This space meets the requirements of strict laboratory practice standards regarding temperature (central heating), humidity, ventilation (forced ventilation), and lighting (natural and artificial).All the electrical appliances installed in the laboratory are protected against explosions. There is a digester (a separate part of the laboratory equipped with an efficient ventilation system). The layout and equipment of these premises are such that no cross-contamination may take place, whereas floor and wall coverings provide the ideal hygienic protection.
Laboratory activities are performed using the following equipment: laboratory instruments and dishes made of glass, rubber and metal,centrifuge, technical and analytical scales,a water bath and hot plate, sterilizer,distillation device,magnetic stirrer with heating,multiparametre instrument (measuring pH values, electrical conductivity of solutions, and ionic concentrations using ion-selective electrodes), vacuum pump, polarimeter, refractometer; liquid chromatography device,spectrophotometer, and flame photometer.
Facilities and equipment used to ensure collective workplace safety and health: there is a local and a general ventilation system.
Auxiliary facilities are not used.

Personal protective equipment

While performing laboratory work, laboratory technicians can be exposed to contaminated and hazardous substances and therefore the appropriate preventive measures must be taken, and personal protective equipment used, as shown in Table 1.

Table 1: Personal protective equipment

Type of equipment	Purpose
Full-face mask with accompanying filter	Used to protect respiratory organs while working with ammonia or collecting spilled liquid chemicals
Half-face mask with accompanying filter	Used to protect respiratory organs form the evaporation of organic solvents, inorganic gases, corrosive gases and micro dust
Dust respiratory mask	Used to protect respiratory organs from dust
Leather gloves	Used to protect hands from mechanical injuries
Single-use PVC gloves	Used for hand protection
Hazardous materials handling gloves	Used for hand protection when handling hydrocarbon derivatives or hazardous powder chemicals
Protective glasses	Used to protect eyes from chemical splashes or spills
Safety shoes	Used to protect feet from chemical splashes or spills
Safety coat	Used to protect the body from chemical splashes and spills

Raw materials and other materials used

During laboratory activities, a great number (more than a hundred) of chemicals (toxic, corrosive and flammable substances) coming from different producers, and with different purity levels and properties are used. There is a chemical inventory list in this chemistry and physical chemistry laboratory containing the chemical name (in compliance with the IUPAC nomenclature) and common name, ID number (CAS number and UN number), chemical formula and properties of each chemical, as well as safety measures for their handling. The records of physicochemical, toxicological and eco-toxicological properties of all hazardous chemical substances that can pose a danger are kept and regularly updated. Their potential dangerous effects on people and the environment under normal working conditions, as well as the consequences of their acute and chronic influences, are described. Special attention is paid to hazardous chemical waste (solid, liquid and gaseous) which may escape from the laboratory and pollute the work area of the higher education institution where the laboratory is situated, as well as the living environment.

2.3. The snapshot of the organization of work

The snapshot of the organization of work includes the name and location of the work area where all the work is done, its characteristics, job requirements, information on employees, work/rest schedules in the observed workplace, and discrepancies between the prescribed and actual organization of work in this workplace.

For the purpose of writing this paper, the snapshot of the organization of work has been made using the data from the Rules on Organization and Systematization of Jobs of this higher education institution, the information obtained by interviewing its employees, and by observing and monitoring the work processes of a laboratory technician in the laboratory for chemistry and physical chemistry. The description and characteristics of tasks performed by a laboratory technician are given in Table 2.

Table 2: Description and characteristics of tasks performed by a laboratory technician in the chemistry and physical chemistry laboratory

Task groups	Key tasks	Skills and knowledge required
Analysis, planning and organization of work	Organizing work in compliance with periodical plans and current needs	- Prepares technical documentation - Keeps pace with the innovations in the field of chemistry and physical chemistry - Has teamwork skills
Preparation for work	Personal preparation for work and team preparation	- Receives a work order for a laboratory analysis - Studies instructions - Directly organizes the work - Prepares samples, solutions, reagents and instruments - Is familiar with laboratory glassware and other dishes, and knows how to keep them clean - Has a good knowledge of chemicals regarding their state of aggregation, purity, form, packaging, labeling, producers, storage and hazards - Is familiar with professional literature, chemical and physicochemical manuals
	Preparation of the workplace	- Checks if the equipment works properly - Prepares laboratory glassware, tools, devices, instruments and the whole work area for use, and cleans them after the use - Knows how to use laboratory instruments and devices - Sets up the equipment following instructions - Is familiar with the properties of chemicals and reagents
Operational tasks	Receiving samples of solid, liquid and gaseous materials	- Receives samples for analyses, prepares them for storage, and preserves them under prescribed conditions - Knows how to prepare and preserve samples
	Preparing solutions	- Prepares different concentration solutions - Calculates the appropriate concentrations of solutions - Is familiar with different ways of preparing different concentration solutions
	Microscopy	- Prepares specimens for microscopicexaminations - Performs microscopic examinations at different magnifications - Is familiar with the optical microscope and its components
	Determining the polarization angle and refraction index	- Can operate the polarimeter and refractometer - Can measure the polarization angle and refraction index - Is familiar with polarimetry and refractometry techniques
	Performing chromatographic analyses	- Performs chromatographic separation - Is familiar with different types of chromatography - Can read a chromatogram both quantitatively and qualitatively
	Performing spectroscopic analyses	- Uses the spectrometer and flame photometer - Knows how the flame photometer and spectrometer work - Can distinguish between the emission and absorption spectrometry
	Performing analyses using electrochemical methods	- Measures the pH value of a solution using the multiparametre instrument - Determines the electrical conductivity of a solution using the multiparametre instrument - Performs potentiometric titrations - Is familiar with electrodes

		- Is familiar with electrolysis and galvanic elements
Commercial tasks	Providing laboratory services	- Plans the procurement, procures and stores chemicals, reagents, laboratory dishes, small tools, measuring instruments
Administrative work	Preparing draft documents	- Keeps the laboratory notebook
Quality assurance	Controlling the quality and quantity of work in compliance with standards	- Controls the quality and quantity of his/her work - Discovers the reasons of poor-quality work and eliminates them - Knows how to use reference standards and test samples - Has a feel for accuracy, diligence and precision
Maintenance and repairs	Controlling the maintenance of instruments, devices and equipment	- Controls the functionality of equipment, devices and measuring instruments - Is familiar with the basic rules of maintenance, repair and operations
Communication	Communicating with teachers, students and associates	- Communicates with teachers, students and associates - If necessary, uses foreign language skills
Health preservation and environmental protection	Performing all the work in compliance with the regulations on occupational safety and health, health preservation and protection of working and living environment	- Is familiar with the regulations governing occupational safety and health, and takes protective measures - Takes responsibility for proper waste disposal - Is familiar with regulations governing working and living environmental protection

A higher education degree is required for this job, with 240 ECTS credits earned in either academic or vocational education for this specific profession. In this paper, the following example is analysed:a man, with five years' work experience, neither under 18, nor an invalid,employed as a laboratory technician in the chemistry and physical chemistry laboratory.
The work schedule includes shift work (morning and afternooneight-hour shifts), with thirty and fifteen minutes'rest periods.
No discrepancyhas been determined between the prescribed, i.e. determinedorganization of work and the actual organization of work in the workplace of a laboratory technician in the laboratory for chemistry and physical chemistry.

2.4. Identifying hazards andharmful factors in the workplace and work environment

This part of the Risk Assessment Act describes four complex activities: (1) reassessing the current state of workplace safety and health, (2) identifying hazards andharmful factors in the workplace and work environment, (3) classifying hazards and (4) classifyingharmful factors.
The valid results of the performed inspection and testing of the equipment and working conditions in the chemistry and physical chemistry laboratory of the abovementioned higher education institution are given in Table 3.

Table 3: Inspection and testing of the equipment and working conditions

Performed inspections, checks and testing	Licensed legal entity that performed inspections, checks and testing	Date of inspections, checks, testing	Date of subsequent inspections, checks, testing
Working conditions, lighting, noise, air humidity, air flow rate, temperature and chemical harmful factors (winter and summer conditions)	Institute for Prevention, Novi Sad	Winter conditions: 15 February 2015 Summer conditions: 3 June 2015	Winter conditions: February 2018 Summer conditions: June 2018
Equipment inspection and check	Institute for Prevention, Novi Sad	15 November 2015	November 2018

The inspection of medical records of previous periodical preventive physical examinations, and other existing medical documentation and records kept by the employerhas led to the conclusion that during the previous five-year period, there had been no work-related injuries, nor had any employee been diagnosed with a professional ailment. Also, during the previous five years, no inspection by labour inspectors had taken place.
Documents about the use and maintenance of laboratory equipment, and about the use and storage of chemical substances provide information on possible hazards and harmful factors (i.e. toxicity classification, groups and classes of toxinsin chemical substances), health risks, ways to avoid the risks, first aid and treatment of possible injuries and diseases, collective and personal protection methods. The instructions for workplace safety and health, defined using the abovementioned documents, are kept and available close to laboratory instruments, devices and chemical substances which may be the sources of hazards and/or harmful effects.
The identification of hazards and harmful factorshas been performed pursuant to the data collected from the documents kept by the employer, by observing and monitoring work performed by a laboratory technician in the chemistry and physical chemistry laboratory, and by obtaining necessary information from the employees. The lists of hazards and harmful factors, given in Tables 4 and 5, represent the classification of the collected information according to the types of possible hazards and harmful factors they indicate.

2.5. Risk assessment in relation with hazards and harmful factors

The process of risk assessment in relation with hazards and harmful factors is the most complex process to perform when preparing a risk assessment act, and it comprises three sub-processes: (1) determining the list of hazards and harmful factors (the lists are shown in Tables 4 and5); (2a) risk assessment by analysingthe frequency, occurrence likelihood and expected severity of work-related injuries, health impairments or diseases of employees that can be caused by each determined hazard and/or harmful factor (the risk assessment using the KINNEY method is presented in Table 4); (2b) determining occupational safety and health measures to be taken in order to reduce risks (the activities and measures that can reduce risk factors to the acceptable or the least possible level are shown in Table 5); (3) the activities of assessing the so-called remaining risk, i.e. the risk that remains after all the measures have been taken, and making a conclusion whether the analysed workplace is the workplace with an increased risk.

Table 4: Lists of hazards and harmful factors, and risk assessment in relation with the hazards and harmful factors (P is the severity of the possible work-related injury, health impairment or disease, V is the occurrence probability, U is the frequency of occurrence, and R is the assessed risk)

Code	**Mechanical hazards posed by operating equipment**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**
04	Using dangerous instruments that may cause an explosion or fire	3	6	6	108	Moderate – risk reduction measures should be defined
06	Other factors that may become mechanical sources of hazards (cuts from broken glass; glassware, and vacuum bottles that may explode, i.e. burst)	3	6	6	108	Moderate – risk reduction measures should be defined
Code	**Hazards due to the workplace characteristics**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**
07	Dangerous surfaces (floors and other walking surfaces, surfaces that employees may be in touch with and which have sharp edges – spikes, rough surfaces, etc.)	1	1	6	6	Acceptable – no activities to reduce risks are required
09	Working in confined, restricted or dangerous spaces (between two or more fixed parts, or in an enclosed, insufficiently illuminated and ventilated space)	1	0.5	2	1	Acceptable – no activities to reduce risks are required
10	Slip and trip hazards (wet and slippery surfaces)	3	6	6	108	Moderate – risk reduction measures should be defined
12	Possible consequences or disturbances due to the obligatory use of personal protective equipment	1	0.5	6	3	Acceptable – no activities to reduce risks are required
13	Consequences of using inappropriate or improper work practices	6	6	3	108	Moderate – risk reduction measures should be defined
Code	**Hazards posed by electricity**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**

17	Hazards posed by thermal effects of electrical equipment and installations (overheating, fire and explosion, electric arcs and sparks, etc.)	2	0.5	3	3	Acceptable – no activities to reduce risks are required
Code	**Harmful effects caused by or occurring during work processes**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**
21	Harmful effects of chemicals, dust and fumes (inhaling, suffocating, entering the body, absorption through skin, burns, poisoning, etc.)	3	6	6	108	Moderate – risk reduction measures should **be** defined
23	Biological hazards (infections, exposure to microorganisms and allergens)	3	3	6	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
28	Dangers caused by using hazardous substances during the processes of production, transportation, packing, storing or destroying	6	3	6	108	Moderate – risk reduction measures should be defined
Code	**Harmful effects caused by physical or psycho-physical strains**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**
31	Non-physiological body position (long periods of sitting, standing, squatting, kneeling, etc.)	1	10	6	60	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
32	Efforts in carrying out certain tasks that cause psychological burdens (stress, monotony, etc.)	2	6	2	24	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checkingwhether the risk is increasing
33	Responsibility for receiving and conveying information, using the appropriate knowledge and skills, obeying the code of conduct, sudden changes of procedures, work intensity, spatial qualities of the workplace, conflicts, dealing with clients and money, insufficient motivation, management, etc.	2	6	3	36	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
Code	**Work organization hazards**	**P**	**V**	**U**	**R**	**Qualitative description of risk level**
34	Working longer than full-time hours (overtime work), shift work, reduced working hours, night-time work, on-call time, etc.	1	1	2	2	Acceptable – no activities to reduce risks are required

2.6. Determining risk elimination, reduction or prevention methods and measures

The sixth part of the Risk Assessment Act includes two components: (1) risk elimination, reduction and prevention measures, and (2) defining special health conditions that must be met by the employees in the workplace with an increased risk.

Table 5: Measures to eliminate hazards and harmful factors completely or partially, and the assessment of the remaining risk (the severity of possible work-related injuries, health impairment or diseases (P), likelihood of occurrence (V), frequency (U) and the assessed remaining risk (R) in relation with hazards and harmful factors)

Code	Measures to be taken in order to eliminate risks completely or partially	P	V	U	R	Qualitative description of the remaining risk
04	- Smoking is strictly forbidden in the laboratory - Checkthat an instrument or a device is properly set up, and that its components are properly assembled - The devices used for synthesis, heating solutions and distillation must not be completely closed because of	3	3	6	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking

	the possibility of explosion - Closed containers must not be heated unless they are designed especially for that purpose - If gas under pressure is inserted into a container, care must be taken to ensure that the pressure is not above the critical value that the container may withstand					whether the risk is increasing
06	- Thorough checks on glassware and glass instruments must be performed before use - The work with glassware and glass instruments requires special precautions, and broken glass must be carefully disposed of - Broken glass or porcelain should be placed in special baskets - Always keep bottles with chemicals clean (if a bottle's content is spilled over its outside, it becomes very slippery and can easily fall out of hands) - Vacuum containers should be protected by a network of adhesive tape or wire	3	3	6	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
10	- Always keep the benchtops clean, and remove any chemicals or instruments that are not in use from them - Any chemicals spilled on the benchtop or floor should be immediately removed: before removing spilled acids or bases, dilute them with plenty of water - Once the work is done, the work area must be carefully cleaned	3	3	6	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
13	- Before starting an experiment, read the instructions and directions carefully - Do not perform unauthorized experiments - In case of any doubts or uncertainties while performing an experiment, consult a responsible person or read the instructions and directions more carefully, and remove the doubts	6	3	3	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
Code	**Measures to be taken in order to eliminate harmful factors completely or partially**	**P**	**V**	**U**	**R**	**Qualitative description of the remaining risk**
21	- All chemicals should be handled with great care - All chemicals should be clearly labeled even when kept in regular chemical measuring containers or in glasses - Mouth pipetting should be prohibited - Do not inhale, taste or smell chemicals - Do not touch chemicals with bare hands; use special dry spoons (in case of spills of chemical solutions, avoid contact with skin) - Eating and drinkingare prohibited in laboratory work areas - Wash hands before leaving the laboratory	3	3	6	54	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing
28	- Experiments requiring toxic chemicals or chemicals with foul odours should be performed in the laboratory digester - If a volatile or flammable liquid is spilled in the laboratory, all heat sources should be switched off immediately - When handling flammable substance, use the digester - Do not use flammable substances near heat sources - Never pour benzene, ether or other volatile and toxic organic solvents down the drain (they can evaporate from drain pipes, and pose hazards in other premises)	6	1	6	36	Low risk – no risk reduction activities are required, but it is necessary to be careful and keep checking whether the risk is increasing

	- Organic waste substances should be placed in the containers specially designed for that purpose - Never pour acids, bases or oxidizing reagents into the toxic waste containers because of possible chemical reactions and emissions of toxic fumes - Try to prevent the benzene evaporation in the laboratory, and never use it outside the digester - Never leave mercury exposed to the air, and in case of a mercury spill, collect it carefully immediately - In order to avoid injuries caused by corrosive chemicals, in addition to work coats, proper protective glasses, half face masks with a filter, and protective gloves should be worn					

An employer is obliged to provide employees with necessary tools, as well as with personal protective equipment in compliance with the prescribed occupational safety and health measures. Safety measures prescribed for the job of a laboratory technician in the laboratory for chemistry and physical chemistry involve taking collective protection measures (ventilation) whenever possible; whereasas to the personal protectiveequipment, the following must be worn: a work coat (at all times while at work), protective gloves (whenever handling chemicals), protective glasses (when there is a danger of chemical splashesinto the eyes),a protective mask with a filter (in case of the exposure to chemical fumes), a respirator (when handling chemical powders). The employees must undergo a physical examination before starting work. The referrals for periodical physical examinations, performed once in twelve months, should clearly indicate the employee'sexposure to chemical hazards. Achest x-ray should be taken once in five years.

2.7. Conclusion of Risk Assessment Act

Having performed the analysis of the organization of work, the identification of hazards and harmful factors, the assessment of risk caused by the hazards and harmful factors, and having defined risk elimination, reduction and prevention measures, the employer came to the conclusion that the analysed job of a laboratory technician in this chemistry and physical chemistry laboratory is not a job with an increased risk. At the end of the conclusion, the employer states the obligation to take all the defined measures in order to ensure workplace safety and health in compliance with the Risk Assessment Act.

3. CONCLUSION

The research conducted for the purpose of this paper assessed the workplace of a laboratory technician in the chemistry and physical chemistry laboratory as a workplace with a moderate risk, which can be reduced to the acceptable or lowest possible level by proper activities and measures. Therefore, it may be concluded that certain efforts must be made in order to reduce risks. Risk prevention funds should be carefully planned, and limited to a certain degree. The activities that may haveharmful effectsmust be clearly defined, and the probability of occurrence of harmful effects must be additionally checked in order to determine the necessary level of activities aimed at reducing the existing risk. Harmful factors and hazards posing low risks donot require any significant investments, and the risks may be reduced and even eliminated simply by proper education of employees, and precautionary measures such as safety information, prohibition, warning and minor technical changes.

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