

**УДК 613.62;331.461**

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**ВЫЯВЛЕНИЕ ОПАСНЫХ ПРОИЗВОДСТВЕННЫХ ФАКТОРОВ НА  
РАБОЧЕМ МЕСТЕ ЛАБОРАНТА ЦЗЛ ПАО «КОКС», РАЗРАБОТКА  
МЕР ПО ИХ СНИЖЕНИЮ.**

**IDENTIFICATION OF HAZARDOUS PRODUCTION FACTORS AT  
THE WORKPLACE OF A LABORATORY ASSISTANT OF THE  
CENTRAL LABORATORY OF PJSC "KOKS", DEVELOPMENT OF  
MEASURES TO REDUCE THEM.**

A hazardous production factor is a factor that affects an employee during work and can cause an acute illness, a high degree of deterioration in health or death.

Hazardous production factors are as follows:

- a) mechanical hazards
- b) electrical hazards
- c) hermal hazards
- d) hazards associated with exposure to microclimate and climatic hazards
- e) barometric hazards
- f) hazards associated with exposure to a chemical factor
- g) hazards associated with exposure to aerosols of predominantly fibrogenic action
- h) hazards associated with exposure to a biological factor
- i) hazards associated with the impact of the severity and tension of the labor process
- j) hazards associated with exposure to noise
- k) hazards associated with exposure to light environment
- l) hazards associated with exposure to non-ionizing radiation
- m) hazards associated with exposure to ionizing radiation
- n) hazards associated with animal exposure
- o) insect hazards
- p) hazards associated with plant exposure

- q) danger of drowning
- r) the danger of the location of the workplace
- s) hazards associated with organizational deficiencies
- t) fire hazards
- u) danger of collapse
- v) transport hazards
- w) danger associated with tasting food
- x) dangers of violence
- y) explosion hazards
- z) dangers associated with the use of personal protective equipment

Also at the production site of PJSC "Koks" a laboratory assistant of chemical analysis with job duties:

1. acceptance of samples of coal, charge, coke for analysis;
2. analysis of coals, charges, cokes according to the laboratory control scheme;
3. registration and calculation of test results;
4. analysis of control samples;
5. monitoring the technical condition of laboratory equipment;
6. inspection and cleaning of equipment;

It is exposed to hazardous production factors with the decision to exclude them. Knowing the hazardous production factors, the laboratory assistant of the CZL of PJSC "Koks" is obliged to know the precautions.

Dangers	Precautionary measures
<b>1. Mechanical hazards</b>	
Risk of falling due to loss of balance, including tripping or slipping, when driving on slippery surfaces or wet floors	<p>Walk around the laboratory, look at your step.</p> <p>Exercise caution when moving near window openings, stands, structures in which there is glass, especially after wet cleaning of the room.</p> <p>When moving outside in winter: look at your feet, avoiding dangerous places; when leaving buildings, pay attention to the accumulation of snow masses, ice.</p> <p>It is prohibited:</p> <ul style="list-style-type: none"> <li>- to be distracted by conversations on a mobile phone, while moving on flights of stairs, as well as on the territory of the workshop.</li> </ul>
Risk of injury to hands (cuts)	<ol style="list-style-type: none"> <li>1. Be vigilant when using sharp stabbing and cutting tools</li> <li>2. In the event that a laboratory glassware breaks, do not pick up its fragments with unprotected hands, but use a brush and a scoop for this purpose.</li> </ol>
<b>2. Electrical hazards</b>	

<p>Risk of electric shock due to contact with live parts that are energized due to faulty condition (indirect contact)</p>	<p>Make sure that the electrical equipment in the room is in good working order.</p> <p>To avoid electric shock and electric shock, the worker should not touch exposed electrical wiring and cables.</p> <p>Before starting work, check the condition of the equipment (buttons, switches).</p> <p>In the event of a long absence from the workplace, disconnect office equipment and other equipment from the mains.</p> <p>Know the operating instructions for the equipment used, office equipment.</p> <p>Monitor the serviceability of office equipment and other equipment, follow the rules of their operation.</p> <p>Avoid pulling, twisting, bending and pinching equipment power cords, wires and cables, do not allow any objects to be found on them and their contact with heated surfaces.</p> <p>Monitor the good condition of sockets, switches and protective insulation of network cables.</p> <p>Before working with electrical appliances and electrical equipment, it is necessary to check:</p> <ul style="list-style-type: none"> <li>- dielectric rugs - for defects in the form of punctures, tears and cracks. Dielectric mats must be clean and dry;</li> <li>- the integrity of the insulating handles of the tools;</li> <li>- presence and integrity of grounding (neutralization) of electrical equipment;</li> <li>- the presence of fences for live parts of the electrical installation.</li> </ul> <p>It is prohibited:</p> <ul style="list-style-type: none"> <li>- use wires with damaged insulation;</li> <li>- use damaged sockets.</li> <li>- start work when a malfunction is detected in the equipment.</li> </ul>
<p><b>3. Dangers associated with the impact of the severity and tension of the labor process</b></p>	
<p>Danger of overvoltage of the visual analyzer</p>	<p>Observe the mode of work and rest.</p>
<p>Danger of unhealthy postures associated with excessive body strain</p>	<p>Observe the mode of work and rest.</p>
<p><b>4. Dangers of fire</b></p>	
<p>Danger of fire</p>	<p>1. Follow the instructions for use of the equipment.</p> <p>2. When smoke or burning smell appears, you must:</p> <ul style="list-style-type: none"> <li>- stop work immediately;</li> </ul>

	<ul style="list-style-type: none"> <li>- if possible, turn off the equipment;</li> <li>- inform other workers about the fire;</li> <li>- call the fire brigade;</li> <li>- take measures to extinguish the fire using primary fire extinguishing means, in the absence of a threat to life and health. It is prohibited:</li> <li>- obstruct emergency exits, passages;</li> <li>- leave operating equipment unattended.</li> </ul>
<b>5. Hazards associated with exposure to chemical factors</b>	
Danger from interaction with acids	<ol style="list-style-type: none"> <li>1. When working with acids and alkalis, it is necessary to use overalls, goggles and other protective equipment.</li> <li>2. It is forbidden to store solutions of alkalis and acids in thin-walled glassware.</li> <li>3. Adequate neutralizing agents must be available at the workplace.</li> <li>4. Spilled acid should be covered with fine sand.</li> </ol> <p>Remove the sand soaked in acid with a wooden spatula and cover this place with soda or lime, then wash it with water and wipe it dry.</p>
Danger from inhalation of vapors of harmful liquids, gases (including due to heating)	<ol style="list-style-type: none"> <li>1. In a room where work is carried out with harmful, toxic and flammable substances, it is necessary to turn on the supply and exhaust ventilation 15-20 minutes before starting work and turn it off 20-30 minutes after the end of work with them. Check the operation of the forced ventilation of the fume cupboards (the doors of the cupboards must be tightly closed)</li> <li>2. Working with chemicals without special clothing and the presence of the necessary means of protection for eyes, respiratory organs, skin is prohibited.</li> </ol>
<b>6. Thermal hazards</b>	
Risk of burns due to contact of unprotected parts of the body with liquid, surface of objects with a high temperature	<ol style="list-style-type: none"> <li>1. When boiling, containers with solutions should be filled no more than <math>\frac{3}{4}</math> of their volume.</li> <li>2. Use of PPE</li> <li>3. Control the heating temperature</li> <li>4. Use crucible tongs</li> </ol>

To prevent the above hazards, observe safety precautions and take safety measures at the workplace to improve labor protection conditions:

- Organization in the prescribed manner of training, instruction, testing of knowledge on labor protection of employees.

- Provision, in the prescribed manner, for workers engaged in work performed in special temperature and climatic conditions or associated with pollution, special clothing, special footwear and other personal protective equipment, washing and neutralizing agents.

- Organization of training for workers in providing first aid to injured workers.

- Familiarization of employees with risk assessment cards at each workplace against signature.

**References:**

1. Order of August 19, 2016 N 438n "On Approval of the Model Regulations on the Occupational Safety and Health Management System"

2. Order of the Ministry of Health and Social Development of Russia of 03/01/2012 N 181n (as amended on 06/16/2014) "On approval of the Standard list of measures annually implemented by the employer to improve labor conditions and safety and reduce levels of occupational risks"

3. <https://firstforsustainability.org/ru/environmental-and-social-risk-management/understanding-environmental-and-social-risk/environmental-and-social-issues/occupational-health-and-safety/>