



On approval of the Sanitary Rules “Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances”

Invalidated Unofficial translation

Order of the Minister of Health of the Republic of Kazakhstan dated September 8, 2017 No. 684. It was registered with the Ministry of Justice of the Republic of Kazakhstan on November 14, 2017 No. 15990. Abolished by the Order of the Minister of Health of the Republic of Kazakhstan dated October 15, 2021 No. KR DSM-105.

Unofficial translation

Footnote. Abolished by the Order of the Minister of Health of the Republic of Kazakhstan dated October 15, 2021 № KR DSM-105 (effective sixty calendar days after the date of its first official publication).

In compliance with paragraph 6 of Article 144 of the Code of the Republic of Kazakhstan of September 18, 2009 "On Public Health and Healthcare System" **I DO HEREBY ORDER:**

1. That the attached Sanitary Rules “Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances” shall be approved.

2. Order of the acting Minister of National Economy of the Republic of Kazakhstan No. 338 dated April 15, 2015 “On Approval of the Sanitary Rules“ Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances” (registered in the Register of State Registration of Regulatory Legal Acts under No. 11099, published in Adilet, the legal information system on June 11, 2015) shall be considered to have lost force.

3. In the manner prescribed by the law, the Committee for the Protection of Public Health of the Ministry of Health of the Republic of Kazakhstan shall:

1) ensure state registration of this order with the Ministry of Justice of the Republic of Kazakhstan;

2) send a copy hereof both in paper and electronic forms in Kazakh and Russian to Republican State Enterprise on the Right of Economic Management “Republican Center of Legal Information” for official publication and inclusion in the Reference Control Bank of Regulatory Legal Acts of the Republic of Kazakhstan, within ten calendar days from the day of the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan;

3) place this order on the Internet resource of the Ministry of Healthcare of the Republic of Kazakhstan;

4) within ten working days after the state registration of this order with the Ministry of Justice of the Republic of Kazakhstan, provide the information on the implementation of measures provided for in subparagraphs 1), 2) and 3) of this paragraph to the Department of Legal Services of the Ministry of Healthcare of the Republic of Kazakhstan.

4. The control over the execution of this order shall be assigned to Vice Minister of Healthcare of the Republic of Kazakhstan Tsoy A.V.

5. This order shall become effective twenty-one calendar days after the day of its first official publication.

*Minister of Healthcare
of the Republic of Kazakhstan*

Y. Birtanov

"AGREED"

Minister of National Economy
of the Republic of Kazakhstan

_____ T. Suleimenov
of October 30, 2017

Approved by
Order of the Minister
of Healthcare
of the Republic of Kazakhstan
№ 684 of September 8, 2017

Sanitary Rules “Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances”

Chapter 1. General provisions

1. These Sanitary Rules “Sanitary and Epidemiological Requirements for Laboratories Using Potentially Hazardous Chemical and Biological Substances” (hereinafter referred to as the Sanitary Rules) have been developed in alignment with sub-paragraph 2) of paragraph 1 of Article 7-1, paragraph 6 of Article 144 and Article 145 of the Code of the Republic of Kazakhstan of September 18, 2009 “On Public Health and Healthcare System” (hereinafter referred to as the Code) and establish sanitary and epidemiological requirements for the selection of a land plot for the construction of a facility, design, operation, reconstruction, repair, water supply, drainage, heat supply, lighting, ventilation, air conditioning and working conditions in microbiological, sanitary, hygiene, radiological laboratories, storage and transportation materials (microorganisms).

2. The following terms and definitions are used in the Sanitary Rules:

1) emergency situation (hereinafter referred to as the accident) - a situation that has arisen in the laboratory when working with potentially hazardous chemical and biological substances, creating a real or potential possibility of releasing a chemical and pathogenic biological agent into the air of the production area, the environment or infection of personnel;

2) autoclave - a room for working with a vessel under high pressure;

3) bacteriological laboratory - a laboratory performing research on the isolation of bacteria from biological material and environmental objects, the determination of antigens and antibodies;

4) checkpoint - a special room designed to ensure the passage of people and vehicles;

5) biological agents or toxins (hereinafter referred to as BA or toxins) - microorganisms and complex compounds of a protein nature of bacterial, plant or animal origin, capable of causing their disease or death when ingested or in contact with human or animal organisms, as well as with plants;

6) biological safety - a system of biomedical, organizational, and engineering measures aimed at protecting working personnel, the public, and the environment from the effects of biological agents (hereinafter referred to as the BS);

7) biological safety box (hereinafter referred to as the BSB) - a structure used for the physical isolation (retention and controlled removal from the work area) of microorganisms in order to prevent the possibility of infection of personnel and air contamination of the work area and the environment;

8) biological security (hereinafter referred to as the biosecurity) - ensuring the protection, control and accounting of BA or toxins in order to prevent their loss, theft, misuse, sabotage, unauthorized access or intentional unauthorized leakage;

9) a boxed room (hereinafter referred to as the box) - an isolated room with a vestibule (pre-box);

10) vivarium - a sub-division of the organization that contains different types of laboratory animals used for experiments;

11) virological laboratory - a laboratory performing research on the isolation of viruses from biological material and environmental objects, the determination of antigens and antibodies;

12) decontamination - the removal or reduction of radioactive contamination from any surface or from any medium;

13) dezar - ultraviolet bactericidal irradiator, used to disinfect indoor air;

14) demercurization - a set of measures for mercury removal in case of spill;

15) diagnostic studies - studies of objects of biotic and abiotic nature, carried out in order to detect and identify the pathogen, its antigen or antibodies to it;

16) infectious zone - a room or a group of laboratory premises where manipulations with pathogenic biological agents or material that is likely to become infected with a pathogenic biological agent are carried out and their storage;

17) laboratory - a legal entity or its structural unit performing organoleptic, sanitary-hygienic, microbiological, virological, parasitological, biochemical, toxicological, radiological studies, dosimetric measurements of physical factors.

18) infectious material - material about which it is known or reasonably assumed that it contains the causative agents of infectious diseases;

19) enzyme-linked immunosorbent assay (hereinafter referred to as the ELISA) - a method for determining various kinds of biological molecules based on the interaction of antigen with antibody using an enzyme label;

20) insectarium - a unit of a facility for keeping, removing or breeding insects used for experimental purposes;

21) microbiological laboratory - a laboratory performing research on the identification of microorganisms in biological material and environmental objects;

22) microorganisms are complex compounds of a protein nature bacteria, viruses, mycoplasmas, rickettsia, chlamydia and fungi, which under certain conditions and in certain concentrations can affect human health;

23) flammable substances - flammable substances and flammable liquids that ignite from an external ignition source;

24) technical strength of a facility (room) - a set of engineering protection for structural elements of buildings, premises, their perimeters, special technical security equipment (security, alarm systems; access control systems; video monitoring and video security systems for television surveillance; detectors for the detection of radioactive, chemical and other toxic substances ; detectors for the detection of weapons, explosives and devices) and fire alarm systems, including automatic fire detection and extinguishing systems;

25) pathogenic biological agent (hereinafter referred to as the PBA) - microorganisms pathogenic for humans (bacteria, viruses, rickettsia, chlamydia, protozoa, fungi, mycoplasmas, endo - and ectoparasites), genetically modified microorganisms, poisons of biological and plant origin (toxins), helminths, as well as material (including blood, other biological fluids and excrement of the body), likely to contain these agents;

26) parasitological laboratory - a laboratory performing research to identify helminths and protozoa in biological material and environmental objects;

27) perimeter - the border of the protected area (zone), equipped with building envelopes (barriers) and checkpoints;

28) polymerase chain reaction (hereinafter referred to as the PCR) - a reaction based on a multiple increase in the number of copies of a fragment of deoxyribonucleic

acid (hereinafter referred to as the DNA) - ribonucleic acid (hereinafter referred to as the RNA) (amplification), which allows you to detect a specific part of the genome of the studied microorganism;

29) radiological laboratory - a laboratory conducting radiation monitoring, radiological studies to determine the content of radionuclides in various objects, as well as conducting dosimetric, radiometric, spectrometric measurements;

30) sanitary-hygienic laboratory - a laboratory conducting sanitary-hygienic, toxicological, chemical studies, measurements of physical factors, other studies and tests;

31) experimental research - all types of work using microorganisms, helminths, toxins and poisons of biological origin;

32) clean zone - a room or a group of laboratory premises where manipulations with BA are not carried out;

33) temporary laboratories (epidemiological teams, expeditions) - laboratories that operate periodically are organized when epidemic outbreaks occur;

34) conditionally infectious zone - a room or a group of rooms within the infectious zone;

35) strain is a pure culture of a microorganism;

36) epidemiologically significant facilities – facilities the products and (or) activities of which are in violation of the legislation of the Republic of Kazakhstan in the field of sanitary and epidemiological welfare of the population can lead to food poisoning and outbreaks of infectious diseases among the population.

Chapter 2. Sanitary and epidemiological requirements for the selection of a land plot for the construction of a facility, design, operation, reconstruction, repair of laboratories

3. When choosing a land plot for the construction of facilities, it shall be prohibited to use land plots:

- 1) used in the past for cattle burial grounds and toxic waste burial sites;
- 2) permanently unfavourable for dysfunctional anthrax.

4. When choosing a land plot for the construction of facilities, the square shall be determined by the requirements of state standards in the field of architecture, urban planning and construction in accordance with subparagraph 23-16) of article 20 of the Law of the Republic of Kazakhstan dated July 16, 2001 "On Architectural, Urban Planning and Construction Activities in the Republic of Kazakhstan" (hereinafter referred to as the state regulations in the field of architecture, urban planning and construction).

5. When designing a building, laboratories shall be located on separate land plots or on the land plot of the organization of which they are a part.

6. Temporary laboratories may be operated in adapted buildings, premises subject to safety requirements, providing sufficient water, electricity, and sanitation.

7. When designing, the operation for laboratories shall be allowed in an independent building, built-in attached industrial premises with a separate entrance, on separate floors of industrial buildings, specialized organizations with a separate entrance, clinical diagnostic laboratories in medical institutions with a separate entrance.

8. When designing facilities, the set and area of premises shall be determined by the design assignment in accordance with the requirements of state standards in the field of architecture, urban planning and construction and in accordance with Appendix 1 to these Sanitary Rules.

9. Microbiological research laboratories have at least two entrances: with a sanitary inspector for employees and for the delivery of material for research.

It shall be allowed to obtain material for research through the transfer window.

10. The presence of non-lockable doors, gates, gates, as well as breaks, damage shall be prohibited in the external fencing.

11. Lighting shall be installed around the perimeter of the fence.

12. Window openings, showcases of the ground floor of the laboratories shall have a strength equivalent to the following parameters:

1) windows with ordinary glazing, additionally protected by roller shutters made of steel sheet with a thickness of at least 1 mm;

2) windows with ordinary glazing, additionally protected by metal bars (sliding, hinged) or blinds of appropriate strength;

3) windows of a special design with protective glazing resistant to a single impact, withstanding 3 impacts of a steel ball weighing 4 kg, dropped from a height of 9.5 m and above.

13. The premises of the laboratories shall have a constructive architectural and planning design and shall be equipped with technical security systems, which together provide protection against penetration.

14. The access control mode shall be established at the facilities engaged in experimental, diagnostic and production work, as well as in storage of PBA of I-II pathogenicity groups.

15. Work with toxic substances shall be carried out in separate rooms (rooms) or in a separate fume hood.

16. Windows, doors of boxes and rooms shall be closed tightly. Window leaves shall be protected by a grid from insects. Doors to the box and pre-box shall have monitored windows.

17. The layout of the premises of microbiological laboratories shall eliminate the cross of clean and infectious streams. The name of the laboratory and the sign “

Biohazard” shall be indicated on the front door. Plates indicating their purpose shall be posted on the doors of the premises.

18. The registry and the room for receiving samples shall be placed at the entrance to the laboratory. If there is a collection point in the laboratory, separate toilets shall be provided for staff and subjects.

19. To work with PBA, BSB 2 protection classes shall be used. Premises where work with PBA is carried out shall be equipped with bactericidal irradiators.

20. The surface of the floor, walls, ceiling in the laboratory premises shall be smooth, without cracks, easy to process, resistant to detergents and disinfectants, slippery floors shall be prohibited.

21. Suspended ceilings shall be allowed for laboratories conducting only research studies with PBA I-IV pathogenicity groups in BBB 2.

22. The edges of the floor coverings of “infectious” rooms for working with I-IV pathogenicity groups shall be raised. In the presence of gangways, the floor shall have slopes.

23. The floor shall be covered with acid-resistant material in the sanitary-hygienic laboratory.

24. In a radiological laboratory, floors, ceilings and walls shall be coated with low-absorbent materials that are resistant to detergents.

25. In the premises in which the work is carried out with fire and explosive substances, two exits shall be provided.

The work tables shall be covered with anti-corrosion, non-combustible material, for working with acids and alkalis - with the device of the sides.

26. During the reconstruction and repair of laboratories, the requirements provided for in paragraphs 7 to 26 of these Sanitary Rules shall be complied with.

Chapter 3. Sanitary and epidemiological requirements for water supply, sanitation, heat supply, lighting and ventilation, air conditioning in laboratories

27. In laboratories, a centralized household - drinking, hot water supply, drainage, and heat supply shall be provided in good condition.

28. In the absence of a centralized water supply system, it shall be allowed to use water from local drinking water sources with an internal water supply and sanitation system.

29. All boxes have a pre-box where hand-washing sinks are installed (washstands), in case of absence skin antiseptics, a mirror and containers with disinfectant solutions shall be allowed.

30. The laboratory shall be equipped with sinks for washing hands of staff and sinks or bathtubs for washing dishes and equipment with the supply of cold and hot water through faucets.

31. When placing laboratories in non-canalized and partially canalized areas, a local sewerage system (pit, septic tank) shall be provided. Wastewater shall be delivered to general or separate underground waterproof containers equipped with covers with hydraulic locks (siphons) located in the economic zone of the facility, which are cleaned in a timely manner.

32. In the absence of a centralized heat supply source, an autonomous boiler room operating on liquid, solid, gaseous fuel shall be provided.

33. Natural and artificial lighting of premises shall be determined in accordance with state standards in the field of architecture, urban planning and construction.

Workspaces shall be provided with protection for workstations and optics from direct exposure to direct sunlight by using light-protective devices made of a material resistant to disinfectants.

34. No natural lighting shall be provided in the room where the work is carried out with a luminescent microscope, a photo-room, in the showers, sanitary facilities and storage rooms.

35. The laboratory shall be equipped with forced-air ventilation with artificial induction and separate (autonomous) ventilation devices for exhausting air from the laboratory hoods, the rooms of the infectious zone of the laboratory shall be equipped with forced-air ventilation with artificial induction and fine filters at the outlet, ventilation with mechanical ventilation shall be allowed for district level laboratories motivation.

36. Laboratory hoods, in which the work is carried out with substances emitting harmful and combustible vapors and gases, shall be equipped with upper and lower suction and bumpers that prevent liquid from draining onto the floor.

37. Exhaust devices shall provide air suction speed in open sections of the cabinet.

38. Ventilation switches for laboratory hoods and BSBs shall be located near them, sockets for turning on appliances located in laboratory hoods and BSBs shall be located on the outer panel, gas taps shall be located on the front sides, and plug sockets shall be on the front side of the desktop outside the laboratory hood or BSB.

39. The doors (doors) of the laboratory hoods shall be closed during operation with a small gap below. Raised sashes shall be firmly fixed with devices that prevent them from falling.

40. The laboratories shall create optimal microclimatic conditions (temperature, air velocity and relative humidity) in accordance with the established requirements of sanitary rules, hygienic standards in accordance with paragraph 6 of Article 144 and Article 145 of the Code (hereinafter referred to as standardization documents).

41. In the buildings located in the areas of the third and fourth climatic zones, air conditioners shall be installed in the summer, in addition to dezars in microbiological laboratories. When working with contaminated material, the air conditioner turns off.

Filter elements of air conditioners shall be periodically (at least 1 time in three months) subjected to cleaning from mechanical particles and disinfection.

Chapter 4. Sanitary and epidemiological requirements for working conditions in microbiological laboratories

42. Microbiological laboratories (bacteriological, virological, parasitological), regardless of their form of ownership, shall have permission from the relevant commission for monitoring compliance with biological safety requirements for working with microorganisms of pathogenicity groups I-IV and helminths in accordance with Appendix 2 to these Sanitary Rules.

43. Studies on the detection of antigens in the blood of people (without pathogen accumulation), antibodies to them and molecular-genetic diagnostics (without pathogen accumulation) for detection of brucellosis pathogens, human immunodeficiency virus (HIV), and parenteral viral hepatitis B and C in clinical material shall be allowed to carry out in laboratories having the conditions for working with microorganisms of the III-IV pathogenicity group.

44. Upon admission to work, safety training shall be carried out in accordance with the Rules and terms for training, instructing and testing knowledge on safety and labor protection of workers, approved by order of the Minister of Health and Social Development of the Republic of Kazakhstan dated No. 1019 December 25, 2015 (registered in the Register of State Registration of Regulatory Legal Acts under No. 12665).

45. The laboratories shall comply with the requirements of the research quality control system, which are indicated in the standardization documents.

46. The following shall be prohibited in the laboratory:

- 1) to work without special clothes;
- 2) to carry out work with faulty ventilation;
- 3) store and use reagents without labels;
- 4) store stocks of toxic, explosive substances and solutions in workplaces and racks

47. When working with gaseous substances that are in cylinders under pressure, it shall be prohibited to:

- 1) quickly open cylinder valves;
 - 2) use a reducer that does not have the inscription "Oxygen" for an oxygen cylinder
- ;
- 3) store them in the working room.

48. The doors of the ventilation hoods shall be closed during operation, the raised leaves shall be firmly fixed with devices.

49. Highly flammable liquids shall be heated to 100 ° C in water baths, over 100 ° C - in oil baths. It shall be prohibited to submerge a flask with a flammable liquid into hot water without preliminary gradual heating.

50. When working with glass devices it shall be advised:

- 1) to close the heated vessel with a ground stopper after cooling;
- 2) when working with glass tubes or thermometers in a drilled cork, not to rest the latter in the palm of your hand, but hold it by the sides;
- 3) when collecting glass devices or connecting their individual parts with rubber, to protect hands with a towel, and when breaking glass tubes, to hold the tube near the file.

51. The works, during which glass devices are overheated or broken, shall be carried out in fume hoods with glasses, gloves and a rubber apron.

52. Vessels with alcohol, benzene, acetone, bromine, iodine shall be closed with ground glass stoppers, those with alkalis shall be closed with screw caps.

53. When transfusing liquids (with the exception of liquids containing infectious agents), a funnel shall be used.

54. Hand washing shall be done by dispensing liquid soap from the dispenser, and hand drying shall be done with disposable paper towels.

55. Laboratories shall be provided with first-aid kits in the case of an emergency and an accident. When working with botulinum toxin, laboratories shall have antitoxic sera.

56. Laboratory staff shall be provided with special clothing and personal protective equipment.

57. Depending on the work performed with microorganisms of the I-IV pathogenicity group, the following types of protective suits shall be used:

1) Type I - pajamas or overalls, medical slippers, medical cap, large kerchief (hood), anti-plague bathrobe, positive pressure respirator-hood, cotton-gauze mask (dust mask, filtering or oxygen-insulating gas mask), glasses, rubber gloves, towel, socks, slippers, rubber boots;

2) Type II - pajamas or overalls, medical slippers, medical cap, large kerchief (hood), anti-plague bathrobe, cotton-gauze mask, rubber gloves, towel, socks, slippers, rubber boots;

3) Type III - pajamas, a medical cap, a large kerchief, a plague bathrobe, rubber gloves, a towel, socks, slippers, galoshes;

4) Type IV - pajamas, hat (small kerchief), a plague bathrobe (surgical), socks, slippers.

58. Overalls and pajamas shall be in front with a tight fastener.

59. A surgical plague dressing gown, but much longer (to the lower third of the leg), while the edges shall go deep one on top of the other, the belt and ties at the collar

shall consist of two parts sewn each to a separate field, one long ribbon shall be provided for tying the sleeves.

60. The anti-plague kerchief shall be used, with the size: 90x90x125 cm.

61. A cotton-gauze mask shall be used from a piece of gauze 125 cm long and 50 cm wide with an even layer of cotton wool 25 cm long, 17 cm wide. The edges of a piece of gauze shall be wrapped with an overlap. It shall be allowed to use filtering means of individual respiratory protection (including anti-aerosol) with an insulating face.

62. Aviator glasses shall be used with a wide, tight-fitting edge, curved glass or designs, ensuring their tightness. It shall be allowed to use personal eye protection (goggles) from chemical and biological factors with an insulating face.

63. A plague-proof suit shall be worn before entering the room where the work with infectious material is carried out in the following sequence: pajamas (jumpsuit), socks, slippers, a medical cap, a hood (large kerchief), a plague bathrobe and boots. The ribbons at the gown collar and the gown belt shall be tied in front on the left side with a loop, and then the ribbons shall be fixed on the sleeves. A respirator (mask) shall cover the mouth and nose, the upper ribbons of the mask shall be tied with a loop on the back of the head, the lower ones on the crown, cotton swabs shall be placed on the sides of the wings of the nose. The glasses shall be well fitted and tested for lack of air filtration.

64. For disinfecting the suit, separate containers with a disinfecting solution shall be provided for processing: boots or galoshes, gloves in the process of removing the suit, cotton-gauze masks, a dressing gown, a kerchief (hood), towels, gloves, glasses shall be immersed in 70 ° alcohol.

65. When disinfecting by autoclaving, boiling or in a disinfecting chamber, the suit shall be folded into bixes and double bags, respectively.

66. The suit shall be removed in the following order, immersing the gloved hands in a disinfectant solution after removing each part of the suit:

1) boots or galoshes shall be wiped from top to bottom with tampons abundantly moistened with a disinfectant solution, a towel is removed;

2) the sleeves and the second pair of gloves shall be taken off, if they were necessary at work;

3) the boots shall be taken off;

4) an apron shall be wiped with a cotton swab moistened with a disinfectant solution, removed, by folding the inside out;

5) the glasses shall be taken off, pulling them forward, up and back behind the head with both hands;

6) the cotton-gauze mask shall be untied and removed without touching the face with its outer side;

7) gloves shall be removed (in case of possible damage of the integrity of the gloves they shall be checked in a disinfectant solution (but not with air);

8) after removing the protective suit, the hands shall be treated with 70 ° alcohol, then they shall be thoroughly washed with soap;

9) the ties of the neckband of the dressing gown and the girdle shall be untied, lowering the upper edge of the gloves, the ties of the sleeves shall be untied and the gown shall be taken off, wrapping its outer part inward;

10) the kerchief shall be taken off, carefully collecting all its ends in one hand on the back of the head.

67. A microbiological laboratory for working with material that is infected or likely to become infected with microorganisms of pathogenicity groups III-IV shall have an “infectious” and a “clean” zone. At the border of the "clean" and "infectious" zones, the device of sanitary passageways shall be provided in newly built or reconstructed laboratories.

68. Before starting the work, the laboratory premises shall be cleaned with a wet method, in a “clean” zone with detergents, in an “infectious” zone - with detergents and disinfectants, they shall be irradiated with bactericidal irradiators for 30-60 minutes at a power of 2.5 watts per 1 cubic meter (hereinafter referred to as m³). When the work is completed, tables, appliances, equipment, floor, and BSB shall be wiped with a disinfectant solution. Cleaning equipment shall be labeled separately for “clean” and “infectious” areas.

69. Infectious material shall be delivered and transferred from one laboratory to another on the territory of the organization (laboratory) in metal, hermetically sealed containers (bix, tanks, cooler bags, containers). Delivered containers with liquid materials shall be closed with plugs, which exclude the pouring out of contents during transportation. When unpacking the material, the bixes, containers and tubes shall be wiped with a disinfectant solution and placed on metal trays.

70. The transfer of infectious material from boxing to boxing or autoclaving shall be carried out in metal bix or tanks, containers.

71. When inoculating infectious material in test tubes, cups, vials, inscriptions shall be indicated with the name of the material, analysis number, seeding dates and registration number.

72. Fluids containing infectious agents shall be collected using an automatic pipette or disposable sterile pipettes. Before use, dishes, pipettes, equipment, syringes shall be checked for integrity and serviceability.

73. Opening of ampoules with dried microorganisms shall be carried out in tabletop boxes, above a cuvette with a disinfectant solution. The end of the incised ampoule shall be covered with a three-layer gauze cloth moistened with a disinfectant solution and shall be broken off with tweezers. The opened ampoule shall be left covered with

the same cloth for one to two minutes, followed by immersion of the cloth in a disinfectant solution, after which the ampoule shall be covered with a sterile swab.

74. The following shall be prohibited in laboratories:

1) the work with live vaccines in the room where the study of infectious material is carried out;

2) to carry out experimental work with virulent antibiotic-resistant microorganisms in the absence of drugs in the microbiological laboratory to which the microorganisms are sensitive;

3) to leave ignited burners and other heating devices unattended, operate with burners having faulty taps, and keep flammable substances near them;

4) to clean up spilled flammable liquids when the burners are lit and electric heaters are turned on;

5) to open the boxing door during operation,.

75. Spent material (working crops, biological material from patients, the corpses of rodents, laboratory animals, nesting material) shall be disinfected. To leave unfixed smears on workstations; laboratory glassware with infectious material after completion of work shall be prohibited.

76. Thawing of refrigerators after storage of infectious material shall be combined with their disinfection. Condensation water shall be decontaminated.

77. Before starting work in the BSB, exhaust ventilation shall be turned on. Material loading shall be carried out at negative pressure. BSB shall be installed in a place remote from the aisles and various kinds of air flows.

78. Vessels operating under pressure shall be marked.

79. When operating autoclaves and thermostats, the following requirements shall be met:

1) to deliver against receipt sealed tanks and other utensils with infectious material to a person working on an autoclave, having access to work with equipment, working under pressure, if two or more employees are engaged in this;

2) keep a logbook (in any form) of the autoclave operation control;

3) do not put flammable substances in the thermostat;

4) do not remove the safety caps from the control devices.

80. The work in the BSB shall be organized in the direction from the clean zone to the infectious zone. Internal surfaces of BSB shall be treated with anti-corrosion disinfectants approved for the use in the Republic of Kazakhstan. It shall be necessary to conduct annual monitoring of the effectiveness of the filters in the BSB.

81. In the rooms where ELISA is carried out, tables, instruments, equipment shall be treated with 70 ethyl alcohol; in case of ELISA studies, during PCR – using 70 ethyl alcohol (before and after work) and disinfectants approved for the use for these purposes, in according to the manufacturer's instructions.

82. When conducting studies in animals on the indication of viruses, the following conditions shall be met:

1) infection and autopsy of laboratory animals, keeping infected animals, centrifugation, drying, operations with the possible formation of aerosol, infection of cell and chicken embryo cultures, preparation of suspensions, work with lyophilized PBA, work on the management of collection strains is carried out in boxed rooms of the laboratory's infectious zone in BSB;

2) containers with PBA are placed on a tray or tray covered with a multilayer towel moistened with a disinfectant solution;

3) serological studies with live viruses, the preparation of various primary and transplantable tissue culture lines, the primary processing of clinical material is carried out in the BSB.

83. A microbiological laboratory for working with material that is infected or likely to become infected with microorganisms of pathogenicity groups I-II shall have infectious, conditionally clean, clean zones. At the border of the "clean" and "infectious" zones, in newly built or reconstructed laboratories, the device of sanitary passageways shall be provided.

84. At the end of the working day, thermostats, refrigerators, cabinets where pathogens of the I-II group are stored shall be sealed, the doors of the production rooms shall be locked.

85. When working with pathogens of the I-II pathogenicity group, the following shall be observed:

1) utensils used when working with arthropods are disinfected by boiling, the waste is poured with a disinfectant solution or burned. Tools are boiled or burned on fire. Coarse calico bags are disinfected by boiling in a water-soap solution for 30 minutes;

2) analysis of the regurgitates of predatory birds and excrement of animals is carried out after 12-18 hours of their immersion into a 1% formalin solution;

3) insects and ticks are kept in a special room (insectaries) in cages or banks, which exclude their dispersal. Fleas obtained for replenishment of the insectarium are kept in separate banks until the appearance of young individuals who do not drink blood;

4) after the end of work, the work tables are treated with a disinfectant solution, hands – 70% alcohol.

5) thresholds 30 cm high are arranged at the entrance to the room where work with infected animals is carried out, mats moistened with a disinfectant solution are placed at the doors of bacteriological boxes, rooms for serological and express examinations;

6) tightness of laboratory premises;

7) persons working with material likely to become infected with pathogens of group I of pathogenicity, at the end of the working day, thermometry of body temperature is performed;

8) animals infected with material likely to be infected with microorganisms of pathogenicity groups I-II are kept separately from other animals;

9) all work related to the reception and primary processing of biological material from humans, rodents, ectoparasites, environmental samples, infected animals and their study on pathogens of the I-II pathogenicity group are carried out in the infectious unit using a protective suit of the I-II type;

10) studies with actinobacillus mallei and melioidosis pathogens are carried out in a type II protective suit, rubber gloves, a cotton-gauze mask and safety glasses. At the end of the work in the preboxes of the infectious department, protective suits are removed and disinfected;

11) it is prohibited to leave the laboratory premises in protective clothing and to call an employee from the premises during his/her work with infectious or likely to become infected material;

12) when working with the causative agent of anthrax, upon completion of research, an examination of the premises and equipment for contamination with this pathogen is carried out.

86. At the microbiological laboratory, which works with pathogens of the first group of pathogenicity, an isolator shall be provided for employees in case they detect symptoms of a probable disease and persons who have an accident.

The isolator shall be provided with a stock of basic and reserve specific medicines, anti-shock medicines and disinfectants.

87. In the vivarium and insectarium, the movement of vertebrates and arthropods shall be recorded in a special numbered and laced journal (in any form) indicating the place and date of catch, the results of the study and quarantine.

88. The premises of the vivarium and insectarium shall be sealed at the end of the working day.

89. Investigations of human blood serums for the detection of antigen or the determination of antibodies to pathogens of the I-II pathogenicity group shall be carried out in a separate box or in the BSB using diagnostics that do not contain live microorganisms.

Separation of blood serum by centrifugation shall be carried out in a box or BSB.

90. The work with microorganisms of the pathogenicity group I shall be carried out in specially designed laboratories equipped with a system of interconnected boxes. A passage autoclave with automatic door lock shall be installed in the infectious area.

91. When working with material that is infected or likely to become infected with viruses of pathogenicity groups I-II, personnel shall use a type II anti-plague suit, infection of animals, ectoparasites, centrifugation and vacuum drying of biological material shall be carried out in a protective suit of type I.

Opening of ampoules with dried rickettsia culture, homogenization of rickettsia biomass shall be carried out in BSB in a protective suit of type II.

92. For conducting PCR studies, the following shall be observed:

1) each zone has its own set of furniture, refrigerators / freezers, laboratory equipment, reagents, automatic pipettes (dispensers), tips, plastic and glassware, protective clothing, shoes, disposable gloves without talcum powder, cleaning equipment and other consumables used only in this room;

2) the transfer of equipment, supplies, reagents, gloves, gowns from one room to another is prohibited;

3) all PCR work is carried out in disposable gloves without talcum powder, which ensures each stage of work;

4) the decoration of all rooms for PCR is carried out with a material resistant to the action of detergents and disinfectants;

5) bactericidal irradiators are installed in all rooms;

6) during detection by electrophoresis, this stage is maintained by individual personnel;

7) the storage conditions of the reagents for all stages of the PCR meet the requirements of the manufacturer's instructions for the use of reagents. Clinical samples are stored separately from reagents;

8) the stages of sample preparation and preparation of the reaction mixture are carried out in BBB;

9) the windows close tightly.

93. To conduct ELISA studies, the following shall be observed:

1) reuse of disposable tips and utensils, transfer of equipment, supplies, reagents, gloves, gowns from room to another room is prohibited;

2) disposable filter paper is used to remove small drops of the washing solution;

3) the optimum room temperature for ELISA is maintained within the range of + 18°C - 22°C, relative humidity from 40% to 70%, unless otherwise provided by the research methodology, it is necessary to keep documentation with a mark of temperature and humidity.

4) daily, after work, the processing of equipment, dispensers, racks is carried out with 70 ethyl alcohol, the automatic washer the tablet is washed with distilled water and once a week with 70 ethyl alcohol;

5) incubation of the tablet near the heating devices is not allowed;

6) The temperature of the thermostat is monitored daily.

94. Bactericidal irradiators and an exhaust ventilation system shall be turned on 15 minutes before the work begins in the box. When loading the box ventilation shall be

turned off. In the absence of air suction during operation in the box, the work shall be immediately ceased. At least once a quarter, bacteriological studies of boxing air shall be carried out, once a month - the filter shall be monitored;

95. Manipulations with cultures of the mycelial phase, the study of the survival of fungi in all phases shall be carried out in the BSB.

96. The platings of mycelial cultures in boxes shall be made after preliminary introduction into test tubes and mattresses with saline or broth. When flushing cultures, the liquid in the mattresses shall be introduced through test tubes with a syringe with a long needle. Crops shall be incubated in metal containers.

97. When working with the mycelial phases of fungi, mattresses, tubes with inoculations outside the box shall not be opened. View of crops shall be carried out in boxes in a type IV suit with a cotton-gauze mask. The work with the yeast phases of mushrooms shall be carried out in boxing in a suit of type IV with a mask, serological studies - in a suit of type IV.

98. Before counting the cellular elements, the fungal suspensions shall be autoclaved or formalin up to 10% shall be added and kept in a thermostat for 2 hours at a temperature of 37 ° C.

99. In order to obtain antigens, vaccines, the grown mycelium shall be disinfected by autoclaving at 0.5 atmospheres for 30 minutes or by adding formalin to a final concentration of 0.5%.

100. When working in the BSB, cotton pajamas, sterile robes, scarves, masks shall be put on. Cultivation of cell lines and work with infectious material shall be performed in disposable sterile gloves. Tighten gloves shall be tightened on cuffs of sleeves, and shall not be leaved under them. To protect the sleeves of the researcher's clothing, rubberized sleeves shall be worn.

101. In the laboratory of the Center for the Study of Acquired Immunodeficiency Syndrome (AIDS), a separate low-temperature (minus 40° C) refrigeration equipment shall be provided for storing blood serum samples. Refrigeration equipment shall be locked and sealed.

102. PBA containers shall be placed on a tray or a platter covered with a multilayer cloth moistened with a disinfectant solution.

103. In the study of human blood serum for the detection of antigen or the determination of antibodies to pathogens of group II pathogenicity, the following conditions shall be met:

- 1) work is carried out in a separate room (room, box);
- 2) non-infectious (not containing a live pathogen) antigens (diagnosticums) are used;
- 3) separation of blood serum by centrifugation is carried out in boxing or BSB. When using vacuum blood sampling systems, the separation of blood serum by

centrifugation is carried out using centrifuge cups with hermetically sealed lids without the use of boxes or BSB.

104. The work with viruses of I-II pathogenicity groups shall be carried out in specially designed laboratories, where all studies are conducted in the BSB. A passage autoclave with automatic door lock shall be installed in the room of the infectious zone

105. Entrance to the infectious zone shall be through a sanitary inspection room with a shower room or a lock where protective clothing is worn. During operation in the gateway, the bactericidal irradiator shall be switched on.

106. Entrance doors to the locks shall be self-closing and equipped with locks. The doors of the premises of the infectious zone shall be closed during operation.

107. Storage of biological material shall be carried out in airtight, low temperature resistant, unbreakable containers that shall be placed in low temperature cabinets or vessels with liquid nitrogen.

108. Transfer of biological material between production lines to storage facilities shall be carried out in hermetically sealed moisture-proof containers that shall be subject to disinfection.

109. During the work, the personnel shall use a type II anti-plague suit; infection of chicken embryos, animals, ectoparasites, centrifugation and vacuum drying of biological material shall be carried out in a type I protective suit.

110. Bacteriological laboratories shall be equipped with light-colored furniture; it shall be prohibited to equip furniture that is not resistant to chemicals, detergents and disinfectants. On the internal and external surfaces of the furniture, slots and grooves that impede processing shall be prohibited.

111. The following shall be carried out in virological laboratories, boxes in the infectious zone of the laboratory (or in the BSB):

- 1) infection and dissection of animals;
- 2) infection of cell culture and chicken embryos;
- 3) preparation of suspensions;
- 4) keeping infected animals;
- 5) the work of maintaining collection strains;
- 6) work with lyophilized PBA;
- 7) centrifugation, drying, operations with the possible formation of an aerosol;

112. In parasitological laboratories, material likely to be contained in gates, oncospheres, eggs, larvae, adults of helminths and protozoa of the intestine shall be delivered in glass or plastic containers with tight-fitting lids.

113. Preparation and research for the presence of helminths, intestinal protozoa by means of coproscopy, enrichment and perianal scraping shall be carried out in a fume hood. Laboratory glassware for research using enrichment methods shall be installed in

cuvettes. Preparations prepared for the study shall be placed on special trays, large glasses shall be placed under glass slides with smears.

114. All manipulations with the test material, utensils, equipment shall be carried out in rubber gloves.

115. Used pipettes, test tubes, capillaries, slides and coverslips shall be disinfected.

116. Material that is likely to become infected with helminths shall be stored in a separate refrigerator, which shall be sealed at the end of the working day.

117. Serological studies with live viruses, preparation of various tissue culture lines of primary and transplantable, primary processing of clinical material shall be carried out in the BSB.

118. At each organization that works with pathogens of the first pathogenicity group, an isolator shall be set up for employees allowing an accident and in case they have symptoms that are likely to be a disease.

119. The isolator shall provide for a stock of basic and reserve specific medicinal products, medicines to provide vital assistance (cardiac, anti-shock, antidotes) and disinfectants.

120. In case of accidents during the work with infectious material, it shall be immediately stopped and an alarm shall be turned on.

121. In the event of an accident with a spray of infectious material, all ongoing work in the room shall be terminated. Protective clothing (starting with a kerchief or helmet) shall be immersed in a disinfectant solution or placed in a bin (tank) for autoclaving. The drops of antibiotic solutions, to which the pathogen is sensitive, shall be injected into the eyes and nose. In the event of an accident, when working with pathogens of deep mycoses, 1% boric acid shall be instilled into the eyes and nose, and the mouth and throat shall be rinsed with 70 ° ethanol.

122. In an accident with botulinum toxin, the eyes and mouth shall be washed with water and antitoxic serum diluted to 10 international units in 1 millilitre. If botulinum toxin gets on exposed skin, it shall be washed off with plenty of soap and water.

123. In an accident that occurred while working with an unknown pathogen, prophylactic treatment with broad-spectrum antibiotics shall be carried out.

124. In the event of an accident that does not spatter biological material, a tampon (napkin) with a disinfectant solution shall be put on the place where the biological material comes into contact with the equipment surface.

125. In the event of an accident that occurred in the box (or BSB) – the work shall be stopped, napkins, abundantly moistened with a disinfectant solution, shall be put on the place of contact with the material. In the box, bactericidal irradiators shall be switched on for 30 minutes, the alarm shall be turned on, then disinfection shall be carried out. Exhaust ventilation during an accident and disinfection shall be remained switched on.

126. In an accident that occurs with a wound or other violation of the integrity of the skin:

1) when working with HIV, the victim shall be given preventive antiretroviral therapy (ART) no later than 72 hours and observation shall be established within 3 months after the “emergency”. The victim shall be warned about the possibility of spread of infection. In the case of negative HIV tests after 1 month, 3 months after the "emergency", the observation shall be terminated;

2) immediately after the gloves or other personal protective equipment is taken off, hands shall be washed with soap and water. In case of contact with blood or other potentially infected material, hands and contaminated areas shall be immediately washed up with soap and water, and if it comes into contact with mucous membranes, they shall be washed immediately with water. Hands shall be washed with soap under running water. If there is no running water, an antiseptic solution with 70 ° alcohol shall be used for the hands;

3) when working with the causative agent of anthrax, the wounded place shall be thoroughly washed with soap and water and lubricated with iodine, without the use of disinfectant solutions;

4) in an accident with pathogens of deep mycoses, the wounded place shall be treated with an appropriate disinfectant solution, washed with soap and water, lubricated with iodine;

5) when working with viruses of pathogenicity groups I-II, the blood shall be squeezed into a dry sterile cloth and the wound shall be treated with iodine without the use of a disinfectant solution.

127. In the event of an accident that occurred during transportation of the material (to the autoclave and between units), the personnel, leaving portable containers in place, shall leave the danger zone and shall report on the incident to the head of the unit. Persons who have an accident shall undergo sanitization. The handling of the premises during an accident shall be carried out in an I-type anti-plague suit.

Chapter 6. Sanitary and epidemiological requirements for a sanitary-hygienic laboratory

128. In laboratories, special (intact) chemical glassware shall be used. Chemical glassware shall be dry and clean. Water-insoluble organic substances shall be removed from the dishes with an organic solvent.

To clean dishes by chemical methods, a chromium mixture, sulfuric acid and alkali solutions shall be used. After thorough cleaning and washing, the dishes shall be dried in an oven.

129. When carrying out work on the assembly of devices from glass materials, the following shall be observed:

- 1) glass tubes of small diameter shall be broken after being cut with a saw to cut glass;
- 2) to facilitate assembly, the ends of the glass tubes shall be melted and wetted with water or glycerin;
- 3) in case of injury (cuts) when working with glassware, glass fragments shall be removed from the wound, the chemical shall be neutralized or removed from the skin with a swab moistened with an appropriate solution or water.

130. When working with an equipment, the following requirements shall be observed:

- 1) the use of flat-bottomed flasks for work under vacuum, as well as at temperatures above plus 100 ° C shall be prohibited;
- 2) flasks made of thick glass shall be used for suction under vacuum. Thin-walled vessels that do not have a spherical shape shall be prohibited to be placed under vacuum. Vessels intended for the work under vacuum shall be pre-tested for maximum vacuum. Before the test, the vessel shall be wrapped in a metal mesh;
- 3) it shall be prohibited to use the assembled device without first checking its serviceability and leaving the existing device unattended;
- 4) a thin-walled vessel, when closed with a stopper, shall be held by the upper part of the throat as close to the stopper as possible. The heated vessel shall be prohibited to be closed with a ground stopper until cooling;
- 5) upon distillation of substances with a boiling point above plus 150 ° C, an air-cooled refrigerator shall be used;
- 6) work with hydrocyanic acid and its salts, dimethyl sulfate, mercuric chloride, phosgene, chlorine, bromine, nitrogen oxides, diazomethane, hydrogen sulfide shall be carried out in a fume hood using rubber gloves and, if necessary, a respirator (gas mask);
- 7) when working with sodium azide, metallic potassium and sodium, contact with water shall be prohibited;
- 8) reactions with metallic sodium or potassium shall be carried out using an air or oil bath. It shall be prohibited to combine unsolved halogen compounds of the fatty series with dimethyl sulfoxide, metallic sodium and metallic potassium;
- 9) when the reaction mixture is heated to boiling, round-bottom heat-resistant flasks shall be used; special round-bottom flasks shall be used for the distillation of liquids;
- 10) when the liquid is heated in a test tube or flask, the vessel shall be held by a special holder so that the hole is directed away from the worker;
- 11) during the operation of water-cooled refrigerators, the continuity of the flow of water shall be controlled;

12) the removal of peroxides shall be done by shaking with an aqueous solution of iron sulfate;

13) the draining of ether, ether solutions and other flammable substances shall be carried out in special bottles in a fume hood, followed by draining into a separate bowl. It shall be prohibited to pour them into water sinks or drain funnels.

131. The distillation of solvents (ether, alcohol, benzene, toluene) shall be carried out previously on a water-jet pump, followed by the use of an oil vacuum pump. Before turning on the vacuum pump, the contents of the flask shall be cooled. The distillation flask shall be heated in a vacuum unit after vacuum is reached in the device.

132. During distillation in an open flame of a gas burner, the surface of the bottom of the bulb is heated uniformly.

After distillation in a vacuum unit and cooling of the flask, the pressure gauge valve shall be shut off, the pump shall be disconnected from the system and the motor shall be turned off.

133. The work with toxic substances (organic and mineral acids, oxygen, nitrogen, halide compounds, compounds of arsenic, phosphorus and other toxic metals and non-metals) shall be carried out by trained personnel with the observance of precautionary measures.

134. The toxic substances used in the laboratory shall be stored in a specially designated place in a cabinet or iron box under lock and seal. Vessels with toxic substances shall have clear and bright labels with the words "Poison" and the name of the substance.

135. Containers containing flammable and explosive substances as well as containing toxic substances in workrooms shall be stored in doses necessary for the work during the working day.

136. When working with toxic substances, a siphon or special pipettes with a rubber bulb shall be used.

Solid toxic substances shall be crushed in closed mortars and weighed in dishes under traction. The work shall be carried out in a respirator.

137. Heating of toxic substances shall be allowed in round-bottom flasks in oil, sand, water baths, electric stoves with a closed spiral. The use of open flame shall be prohibited.

138. Poisonous liquid spilled on the floor or table shall be deactivated.

Filters and paper used when working with toxic substances shall be collected in separate containers and destroyed in gas furnaces or chambers.

139. At the end of the work with toxic gases, devices shall be neutralized by blowing with an inert gas or filling with water.

140. Easily combustible flammable liquids (with the exception of those having a low boiling point) shall be stored in thick-walled bottles or jars with ground stoppers

with a capacity of not more than 2 liters. With a larger capacity, the container shall be supplied with sealed metal cases.

141. Cans with combustible flammable substances shall be placed in a special metal box with a tight-fitting lid, the walls and bottom of which are laid out with asbestos. A layer of sand 10 mm thick shall be poured at the bottom. On the inside of the lid of the box there shall be a clear inscription with the name of the substance.

The box shall be installed on the floor away from the aisles and from heating appliances, with a convenient approach to it.

142. Diethyl (sulfur) ether shall be stored in isolation from other substances in a cold and dark room. Ether with a production term of more than a year shall be checked for peroxides. The solution containing peroxides shall be destroyed or distilled. Flammable and combustible liquids shall be delivered from the warehouse to the laboratory in closed unbreakable or glass containers placed in a case.

143. Equipment using compressed gases (gas chromatographs, gas chromatographs, liquid chromatographs, atomic absorption spectrometers, voltammetric analyzers) (hereinafter referred to as the equipment) shall be installed on the ground floor or on other floors, provided that the places for the removal of gas cylinders are observed. Persons who have passed specialization (retraining) in working with equipment shall be allowed to work on equipment.

Gas cylinders shall be marked and shall have a recognizable color.

144. Premises for working with fire and explosive substances shall be equipped with carbon dioxide fire extinguishers and other fire extinguishing means.

All work with flammable and combustible liquids shall be carried out in a fume hood with working ventilation and when appliances and gas burners are turned off. Fume hoods and work desks shall provide communications for supplying cold and hot water, compressed air, domestic gas, electricity, sinks shall be installed to drain water.

145. Low-boiling flammable substances shall be distilled and heated in round-bottom flasks made of refractory glass in water and oil baths.

146. The heating of vessels with low-boiling flammable liquids over an open fire and at electric heaters shall be prohibited.

Liquids with a higher boiling point shall be heated in mantles.

When heating a flammable liquid in an amount of 0.5 l, a cuvette of sufficient capacity shall be placed under the device to prevent spillage of liquid on the table in the event of an accident.

147. All equipment used to heat flammable liquids shall be subject to periodic inspections to detect faults in a timely manner.

148. In order to avoid explosion, it shall be prohibited to evaporate diethyl ether to dryness.

149. Vessels in which the work with flammable liquids is carried out shall be washed after the studies.

The destruction of spent flammable liquids of hazard class 1-4 shall be carried out in accordance with the Sanitary Rules "Sanitary and Epidemiological Requirements for the Collection, Use, Appliance, Neutralization, Transportation, Storage and Disposal of Production and Consumption Waste", approved by order of the Minister of National Economy of the Republic of Kazakhstan No. 176 dated February 28, 2015 (registered in the Register of State Registration of Regulatory Legal Acts under No. 10936).

150. In case of accidental spills of flammable liquids, all burners and heating devices shall be turned off; the place of the spill shall be filled with sand. Contaminated sand shall be collected with a wooden or plastic spatula. Extinguishing flammable substances with water shall be prohibited.

151. In case of ignition flammable and combustible liquids in a fume hood (under the hood), the fan shall be turned off.

152. To prevent burns during any work with acids and alkalis, laboratory workers shall use safety glasses (with leather or rubber frames) and rubber gloves, in some cases a rubber (rubberized) apron. The work with acids and alkalis without safety glasses shall be prohibited.

The work with concentrated acids and evaporating alkalis shall be carried out in a fume hood.

153. Bottles with acids shall be stored in baskets or crates, transported together or transported on a special trolley in airtight containers.

Acids and alkalis shall be poured from bottles into small containers using a siphon or hand pumps of various designs.

154. To prepare solutions, the acid shall be poured into water slowly with a thin stream with continuous stirring. Pouring water into acid shall be prohibited. The use of sulfuric acid in vacuum desiccators as a water-absorbing agent shall be prohibited.

Concentrated nitric, sulfuric and hydrochloric acids shall be stored in the laboratory premises in thick-walled glassware with a capacity of not more than 2 liters, in a fume hood, on glass or porcelain pallets. Vials of fuming nitric acid shall be stored in special stainless steel drawers.

155. When preparing solutions, the alkali shall slowly be added into water in small pieces with continuous stirring, the alkali pieces shall be taken only with forceps. Large chunks of caustic alkalis, previously covered with dense matter, shall be broken into small chunks in a designated place.

156. During the spill of mercury, demercurization measures shall be carried out. Spilled mercury shall be collected in a vacuum by a pipette with a trap, or Tischenko's

bottles connected to a vacuum pump, brushes or copper plates shall be used. Surfaces contaminated with mercury shall be treated with a 1% solution of potassium permanganate, acidified with hydrochloric acid.

157. In case of acid burns, the affected area shall be washed with a copious amount of water, then with sodium bicarbonate solution and shall be smeared with burn ointment, with alkali burns with plenty of water, then it shall be treated with 1% acetic acid solution and smeared with burn ointment.

158. At the slightest sign of poisoning, the injured person shall be taken out (taken out) of the contaminated room into fresh air, laid on a horizontal surface, freed from clothing that tightens him/her and shall be covered.

In case of phosphorus poisoning, abundant gastric lavage shall be performed with water. Milk shall be prohibited.

159. After working with fire and explosive substances, the workplace shall be cleaned, devices and apparatus shall be disconnected from sources of water, electricity, domestic and compressed gas.

160. After work is completed, hands shall be washed with soap, the mouth shall be rinsed with water, goggles shall be decontaminated.

161. Special clothes and towels contaminated with toxic substances shall be decontaminated before washing.

162. Employees who have undergone specialization (retraining) shall be allowed to operate with electrical installations and electrical equipment.

163. Facilities for laboratory animals shall be equipped with cabinets for cages connected to a ventilation system.

164. In vivariums, the joint keeping of healthy animals and animals used in the experiment shall be prohibited.

165. The room of the seed chamber shall be separated from the rest of the premises and shall be equipped with supply and exhaust ventilation and special ventilation in the chambers.

166. When seeding animals in the chambers, the supply of the studied substance shall begin after the animals are loaded into the chamber and the latter is carefully sealed.

167. Each case of death or forced slaughter of animals shall be recorded in a journal (in any form).

168. Delivery of animals from the vivarium to the laboratory and vice versa shall be carried out in special disinfected cages. Rats and mice shall be carried in the same cells in which they are kept in the vivarium. To prevent injuries (scratches and bites), all manipulations with laboratory animals shall be performed in special machines and gloves.

169. When caring for infected animals after cleaning each cage, rubber gloves shall be decontaminated, without removing from hands, by immersion in a disinfectant solution.

170. Vivarium employees shall be provided with special clothing (robes, an apron, a cap, rubber gloves).

171. Eating and smoking shall be prohibited in the premises of the toxicological laboratory where work with toxic substances is carried out.

Chapter 7. Sanitary and epidemiological requirements for working conditions in a radiological laboratory

172. Persons not younger than 18 years old who do not have medical contraindications shall be allowed to work with radiation sources (group A personnel).

173. Radiological laboratories shall be located in a separate part of the building or on separate floors, isolated from other rooms. The common areas shall be allocated for reception, dosimetric control and distribution of samples. When working with samples of high activity, the laboratory premises shall be divided into “dirty” and “clean” zones

174. In the dirty area the following shall be located:

- 1) the premises of a radiochemical study;
- 2) a room for the preparation, storage and ashing of samples;
- 3) a room for the decontamination of dishes, containers, equipment, linen and special clothing.

175. In the clean area the following shall be located:

- 1) a room for the preparation, storage and ashing of samples;
- 2) the premises of a radiochemical study.

176. Work related to the possibility of radioactive contamination of the air (operations with powders, evaporation of solutions, work with emanating and volatile substances) shall be carried out in fume hoods and on separate work desks.

177. The restriction of the entry of radionuclides into workplaces and the environment shall be ensured by the use of a system of static (equipment, walls and floors of premises) and dynamic (ventilation and gas purification) barriers.

178. Equipment, tools and furniture shall be assigned to the premises of each zone and shall be marked. Their transfer from the premises of one zone to another shall be allowed after radiation monitoring with the replacement of markings.

179. Unauthorized interference with devices, which include calibration sealed radiation sources, and to devices that generate ionizing radiation, shall be prohibited. The safety of ionizing radiation sources shall be ensured in the laboratory.

180. Sources, radioactive substances, liquid solutions of radium salts, sealed in glass ampoules, alpha and beta standards entering the laboratory, shall be stored in a safe.

181. The following conditions shall be met in a radiological laboratory:

1) wet cleaning is carried out in all rooms daily.

2) manipulators are used when working with radioactive drugs and contaminated samples, touching them with hands is prohibited;

3) manipulations with radioactive substances, with contaminated samples are carried out on easily decontaminated surfaces;

4) all work with radioactively contaminated samples is carried out with gloves, shoe covers and special clothing;

5) when working with radioactive substances, trays and pallets made of weakly sorbing materials, covered with plastic or polyethylene films, filter paper and other disposable materials are used;

6) transfusion, evaporation, pouring of radioactive substances, contaminated samples, as well as other operations in which radioactive substances get into the air, are carried out in fume hoods. The ventilation in the cabinets is turned on before starting work.

7) upon completion of the work with radioactive substances, employees thoroughly wash their hands with warm water and soap, after which a dosimetric check of the cleanliness of the hands is carried out. When leaving the laboratory, the removed gloves, shoe covers, overalls are sent to a special laundry room;

182. After testing samples with radioactive contamination, all liquid or solid waste shall be collected in a special container. Used laboratory glassware shall be thoroughly washed with running water and treated with decontaminating solutions (5% citric acid solution, 10% hydrochloric or nitric acid solution, ethyl alcohol), then shall be washed again with running water. After thorough cleaning and washing, the dishes shall be dried in an oven. Decontamination of dishes shall be carried out under radiation control

183. Radioactive substances, samples with a high content of radioactive substances during the storage of which it is possible to release radioactive gases, vapors or aerosols, shall be stored in fume hoods, boxes, chambers in closed containers made of non-combustible materials.

184. Glass containers containing radioactive liquids shall be placed in metal or plastic containers.

185. A special room shall be allocated for the decontamination of containers, tools, utensils, equipment. Decontamination shall be carried out under radiation control.

186. A special room shall be allocated for the exposure and temporary storage of radioactive waste.

187. In a dirty and clean area, dosimetric control of the workplace and individual dosimetric control of personnel shall be carried out with the results recorded in a journal (in any form).

In case of deviations in the state of health that impede the continuation of work with radioactive substances, workers shall be temporarily or permanently transferred to the work, where there is no contact with sources of ionizing radiation.

188. The laboratory shall have an emergency supply of decontaminants.

Chapter 9. Sanitary and epidemiological requirements for the storage and transportation of materials (microorganisms)

189. Storage of biological material shall be carried out in unbreakable, sealed containers that can withstand low temperatures, placed in low-temperature cabinets or vessels with liquid nitrogen.

Transfer of biological material between production lines or to storage facilities shall be carried out in hermetically sealed moisture-proof containers that are subject to disinfection.

190. Organizations, laboratories authorized by the regime committee to work with microorganisms of pathogenicity groups I-IV may have collections of museum cultures corresponding to the permission of the regime commission.

191. The designation (number, code) assigned to the collection strain shall not be changed upon its transfer. In case of death (destruction) of a strain, its designation shall be prohibited to be assigned to newly arrived strains.

192. The destruction of a strain of microorganisms of I-II pathogenicity groups shall be documented in an act in accordance with Appendix 4 to these Sanitary Rules.

193. Containers containing microorganisms shall have clear, indelible labels or firmly pasted labels with the name of the microorganism, strain number and date of reseeded (lyophilization). Toxin containers shall be additionally marked with a red color on the lower right corner of the label.

194. Microorganisms of pathogenicity groups I-IV in collections shall be stored in a lyophilized or frozen state, on solid or liquid nutrient media, and also in the form of suspensions of organs and tissues in a preservative.

195. The opening of ampoules with dry (and) pathogenic microorganisms of pathogenicity groups I-IV for the purpose of seeding or destruction shall be documented in an act in accordance with Appendix 5 to these Sanitary Rules.

196. Microorganism strains shall be stored separately in groups in a refrigerator or fireproof cabinet (safe). The joint keeping of microorganisms of various groups shall be allowed, provided that they are stored in separate unbreakable containers with a lockable lid. The containers shall be sealed, a sheet with a list and the number of stored microorganisms shall be placed outside or inside them.

197. The transfer of pathogenic biological agents of the I-II pathogenicity groups and collection microorganisms of the III-IV pathogenicity groups within the laboratory (organization) shall be carried out after the transmission act is drawn up in accordance with Appendix 6 to these Sanitary Rules.

198. Transfer of microorganisms of pathogenicity groups I-II for temporary storage shall be executed in an act in accordance with Appendix 7 to these Sanitary Rules.

199. The transfer shall be made after the preparation of the act on the transfer of microorganisms in accordance with Appendix 8 to these Sanitary Rules. The transfer of microorganisms of pathogenicity groups I-IV outside the country shall be carried out in accordance with Decree of the Government of the Republic of Kazakhstan No. 1083 dated December 28, 2015 “On Certain Issues of Issuing Permits in the Field of Export Control”.

200. Transportation of microorganisms of the III-IV groups of pathogenicity shall be carried out by post or courier, transportation of I-II groups – shall be transported by personal delivery, by trained laboratory personnel. Upon receipt of microorganisms, the courier shall provide a power of attorney and documents proving his/her identity.

201. In order to exclude all types of inspection and control, transportation of microorganisms of I-IV pathogenicity groups shall be carried out by the courier if there is an accompanying document for the transportation of special cargo issued by the sending organization in accordance with Appendix 9 to these Sanitary Rules. For microorganisms of I-II pathogenicity groups, an act of packaging in two copies shall be additionally drawn up. The first copies of these documents shall be placed in a package with microorganisms. Copies of documents shall remain with the sender. The organization that received microorganisms of I-IV pathogenicity groups, shall draw up a letter confirming the receipt of microorganisms of I-IV pathogenicity groups, shall send it to the organization that issued them.

202. An organization-sender shall inform the recipient organization via urgent communication (fax, e-mail, phone) of the date and type of transport by which microorganisms of I-IV pathogenicity groups are sent.

203. Microorganisms of pathogenicity groups I-IV shall be transferred on solid nutrient media. The transfer of toxins, viruses, organs, tissues and their suspensions containing microorganisms shall be allowed in a preserving liquid or in a frozen state.

204. When transporting material to the laboratory, the principle of triple packaging shall be observed, which shall include the following:

1) primary container - labeled container / test tube / vial with sample, securely closed with a lid, sealed with laboratory film;

2) secondary capacity - a durable waterproof, non-leaking container (plastic bag) with absorbent material in an amount sufficient to absorb the entire sample in case of leakage;

3) outer packaging - a durable heat-insulating container designed for the transportation of biological materials. To ensure the temperature conditions of transportation, cooling elements are placed in the thermal container. On the outside of the thermal container, a label is reinforced with the address, phone, fax, recipient's email and transportation conditions.

205. The address side of the parcel shall be indicated by the sign - "Danger! Do not open during transportation. "

206. The transportation of live animals and arthropods infected with microorganisms of pathogenicity groups I-IV shall be prohibited.

207. The sending organization shall be responsible for complying with the requirements of the packaging and transportation rules to the transportation point, as well as for the correct packaging and dispatch of the PBA through the International Post Office, in accordance with the legislation of the Republic of Kazakhstan in the field of export control, as well as with applicable international conventions and rules.

208. The box side, where the addresses of the recipient and the sender are indicated, shall be labeled with a purple color and a distinctive sign: "Perishable Biological Substances", "Danger: do not open during shipment", "Has no commercial value", "Packed in accordance with international postal safety rules " (in English).

Appendix 1
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"

Set of laboratory facilities

1. A set of premises of a bacteriological laboratory conducting work with microorganisms of the

III - IV pathogenicity groups

Table 1

№ s/o	Name of premises
1	2
1.	A study of the head of the laboratory
2.	Room for research on intestinal research group
3.	Research facilities for sanitary bacteriology
1)	A box with pre-box for research on sanitary bacteriology:
4.	Premises for research on the respiratory infection:
1)	for doctors
2)	for laboratory assistants
3)	A box with prebox

4)	serological examination room
5.	Polymerase chain reaction rooms:
1)	sample preparation area (a box with a pre-box)
2)	reaction mixture preparation zone (a box with a pre-box)
3)	amplification and detection zone (a box with a pre-box)
6.	Autoclave for disinfection of spent infectious material and sterilization of media, dishes
1)	Sterilization room
7.	Washroom
8.	Facilities for the preparation of nutrient media:
1)	Nutrient media preparation and flowing room
2)	Nutrient media flowing box with a prebox
9.	Pantries for laboratory glassware, reagents, materials
10.	Sterilization and bath unit for personnel:
1)	wardrobe for outerwear
2)	wardrobe for special clothes
3)	1 single-head shower
4)	1 one-seat toilet
11.	Staff room
1)	Registry and delivery of test results
2)	Sampling room
3)	1 one-seat toilet
12.	Training room

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed. Instead of boxing with a pre-box, the use of BSB shall be allowed. In the presence of an automated media preparation system with an area of at least 6 m², the combination of clause 8.1. with clause 8.2. shall be permitted. It shall be allowed to combine clause 2 with clause 4.4. It shall be allowed to place in one room a room for doctors and laboratory assistants for drip infections.

Clause 5 is intended for newly commissioned facilities (laboratories).

When organizing the work of the laboratory using disposable consumables, it shall be allowed to use a washing room of at least 8 m². When organizing the work of the laboratory using disposable supplies, the absence of sterilization shall be allowed.

2. A set of premises of a bacteriological laboratory conducting work with microorganisms of I-II pathogenicity groups

Table 2

Nº s/o	Name of premises
1	2

1.	The following shall be provided in the clean zone:
1)	wardrobe for outerwear
2)	wardrobe for special clothes
3)	1 single-head shower
4)	Room for the head of the laboratory
5)	rooms for administrative work
6)	One-seat toilet
2.	The following shall be provided in the conditionally clean zone:
1)	room with a box for the preparation and bottling of nutrient media
2)	autoclave room for 1 autoclave
3)	preparatory sterilization room
4)	Washing room
5)	pantry
3.	The following shall be provided in the infectious zone:
1)	room for reception, registration of material and its primary processing
2)	2 boxes with pre-boxers
3)	room for bacteriological and serological studies
4)	ELISA diagnostic room
5)	express diagnostic room
6)	Autoclave room for 1 autoclave
4.	Infectious block:
1)	zoological and parasitological room
2)	unit for working with infected animals, consisting of rooms for receiving and primary processing of material, a room for infection, opening and sowing, a room for disinfecting equipment and a room for keeping infected animals
3)	protective outerwear suit dressing room
4)	protective outerwear suit taking-off room
5.	Polymerase chain reaction rooms
1)	sample preparation area (a box with a pre-box)
2)	reaction mixture preparation zone (a box with a pre-box)
3)	amplification and detection zone (a box with a pre-box)

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed. The premises of the conditionally clean zone shall be separated from the premises of the clean zone by a sanitary inspector.

Sub-clauses 3), 4) of clauses 3 and clause 5 are intended for newly commissioned facilities (laboratories).

3. Set of premises of the virology laboratory

Table 3

№ s/o	Name of premises
1	2
Clean zone	
1.	A room of the head of the laboratory
2.	Staff room
3.	Preparatory sterilization room
4.	Washing room
5.	Autoclave room
6.	(for sterilizing dishes, media, solutions)
Infectious zone	
1.	Room for receiving, processing primary samples
2.	Respiratory virus rooms:
1)	A box with a prebox for infection of tissue culture and embryos
2)	Room for luminescent microscopy
3.	Enterovirus rooms:
1)	A box with a pre-box for infection of tissue culture, for work with reference strains and sanitary virology
4.	Room for the preparation of tissue cultures:
1)	A box with a prebox
5.	Enzyme-linked immunosorbent assay:
1)	A box with a prebox
6.	Polymerase chain reaction rooms:
1)	sample preparation area (box with pre-boxes)
2)	reaction mixture preparation zone (a box with a prebox)
3)	amplification and detection zone (a box with a prebox)
7.	Autoclave for disinfection of spent infectious material
8.	Sterilization and bath unit for personnel:
1)	Wardrobe for outerwear
2)	1 single-head shower
3)	Wardrobe for special clothes
4)	1 one-seat toilet

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed. Works on infection of tissue culture, research on sanitary virology and work with reference strains shall be allowed to be carried out in the same box with the pre-box when installing separate BSB.

Clauses 2 and 5 are intended for newly commissioned facilities (laboratories).

When organizing the work of the laboratory using disposable consumables, it shall be allowed to use a washing room of at least 8 m². When organizing the work of the laboratory using disposable supplies, the absence of sterilization shall be permitted.

4. Set of premises of a parasitological laboratory

Table 4

№ s/o	Name of premises
1	2
1.	Room for the head of the laboratory
2.	Room for reception, registration and delivery of test results
3.	Helminthological research room
4.	Serological test room
5.	Room for express diagnostics
6.	Washing room
7.	Wardrobe for special clothes
8.	Staff room
9.	Entomological Research Room
10.	Pantry
11.	Wardrobe for outerwear
12.	1 one-seat toilet

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed. If the parasitological laboratory is part of a bacteriological laboratory, then the premises for receiving, registering and issuing analyzes, a washing room and a waiting room may be combined with a similar room in the bacteriological laboratory. Entomological research room shall be provided if there is an entomologist.

When organizing the work of the laboratory using disposable consumables, it shall be allowed to use a washing room of at least 8 m². When organizing the work of the laboratory using disposable supplies, the absence of sterilization shall be allowed.

5. Set of premises for PCR laboratories

Table 5

№ s/o	Name of premises
1	2
	PCR - electrophoresis diagnostics
1	Room for reception, registration of material and its primary processing
2	A box with prebox for DNA extraction (RNA)
3	A box with a pre-box for the preparation of the reaction mixture

4	A box with a pre-box for amplification and detection
5	Autoclave for disinfection of spent infectious material
6	Washing room
7	Pantry for supplies
8	Sterilization room
9	Wardrobe for outerwear
10	Wardrobe for special clothes
11	Administrative room
12	Room of the head of the laboratory
13	1 one-seat toilet
14	Shower room
	PCR - real-time diagnostics
1	Room for reception, registration of material and its primary processing
2	A box with prebox for DNA extraction (RNA)
3	A box with a pre-box for amplification
4	Autoclave for disinfection of spent infectious material
5	Washing room
6	Pantry for supplies
7	Sterilization
8	Wardrobe for outerwear
9	Wardrobe for special clothes
10	Administrative room
11	Room of the head of the laboratory
12	1 one-seat toilet
13	Shower room

Note: When organizing the work of the laboratory using disposable consumables, it shall be allowed to use a washing room of at least 8 m². When organizing the work of the laboratory using disposable supplies, the absence of sterilization shall be allowed.

6. Set of premises for IFA laboratories

Table 6

№ s/o	Name of premises
1	2
1	Room for reception, registration of material and its primary processing
2	Box with a pre-box for ELISA
3	Autoclave for disinfection of spent infectious material
4	Washing room
5	Pantry for supplies
6	Sterilization room

7	Wardrobe for outerwear
8	Wardrobe for special clothes
9	Administrative room
10	Room of the head of the laboratory
11	1 one-seat toilet
12	Shower room

Note: When organizing the work of the laboratory using disposable consumables, it shall be allowed to use a washing room of at least 8 m². When organizing the work of the laboratory using disposable supplies, the absence of sterilization shall be allowed.

7. A set of premises and areas of the sanitary-chemical laboratory and the laboratory for determination of residual quantities of pesticides and nitrates

Table 7

№ s/o	Name of premises	Area, m ²
1	2	3
1.	Occupational Health Analytical Room	not less than 18
2.	Food Hygiene Analytical Hall	not less than 18
3.	Municipal Hygiene Analytical Hall	not less than 18
4.	Analytical room for the determination of pesticides and nitrates	not less than 18
5.	Chromatographic room	not less than 6 per one chromatograph
6.	Atomic absorption room	not less than 10
7.	Sample preparation and ashing room	not less than 15
8.	Weighing room	not less than 4 for 1 weighing device not less than 6
9.	Washing and distillation room	not less than 10
10.	Room of the head of the laboratory	not less than 12
11.	Workrooms for specialists	not less than 4 per one person
12.	Reagent storage rooms	not less than 10
13.	Room for registration, reception of samples and delivery of results	not less than 6
14.	1 one-seat toilet	not less than 0.85

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed. Clauses 7, 8, 9, 10, 11, 12, 13, 14 of table No. 5 shall be intended for all laboratories.

8. Set of premises and areas of the laboratory of toxicology of polymers and chemicals

Table 8

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№ s/o	Name of premises	Area, m2
1	2	3
1.	Room of the head of the laboratory	not less 8
2.	Workrooms for specialists	not less 4 per one person
3.	Seeding – inhalation room	not less 12
4.	Room for pathomorphological and biochemical studies	not less 18
5.	Functional (toxicological) research room	not less 18
6.	Room for chemical research	not less 18
7.	Material (sample preparation room) room	not less 6
8.	Washing room	8
9.	Weighing room	Not less 4 per 1 weghing device, not less 6

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed.

9. A set of premises and areas of the laboratory of electromagnetic fields and physical factors

Table 9

№ s/o	Name of premises	Area, m2
1	2	3
1.	Room of the head of the laboratory	not less 8
2.	Workrooms for specialists	not less 4 per one person
3.	Room for storage of noise-vibration equipment	not less 10
4.	The room for storage, preparation, repair and tuning of equipment for measuring electromagnetic fields	not less 10
5.	1 single-head shower	not less 1
6.	1 one-seat toilet	not less 0,85
7.	Wardrobe for outerwear	not less 4

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed.

10. Set of premises and areas of the radiological laboratory

Table 10

№ s/o	Name of premises	Area, m2
1	2	3
1.	Room of the head of the laboratory	not less 8

2.	Workrooms for specialists	not less 4 per one person
3.	Room for acceptance and primary processing of samples	not less 16
4.	Storage room for ashing samples	not less 18
5.	Radiochemical (clean zone) room	not less 20, but not less 10 per one working place
6.	Radiochemical room (dirty zone) (if necessary)	not less 18 per one working place
7.	Radiometric room	not less 20
8.	Spectrometric room	not less 18
9.	Portable equipment storage room	not less 8
10.	Room for the decontamination of dishes, containers, equipment, linen and special clothing (if necessary)	not less 20
11.	Wardrobe for outerwear	0.4 per one wardrobe but not less 6
12.	Wardrobe for special outerwear	0,4 per one wardrobe but not less 6
13.	1 single-head shower	not less 1
14.	1 one-seat toilet	not less 0.85

Note: For laboratories, the set of rooms provided for research depends on the type and type of research performed.

Appendix 2
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"
Document form

Ministry of Healthcare of the Republic of Kazakhstan
Permission to work with microorganisms and helminths

Issued for a laboratory: _____

(organization name)

for conducting _____

(types of work: diagnostic, experimental, industrial)

with microorganisms _____ pathogenicity groups including

(name of microorganisms)

Based on: _____

" _____ " _____ 20 _____

Issued for a period of 5 (five) years

Chairman of the

Regime Commission

stamp here

Appendix 3
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"

Classification of microorganisms of I-IV pathogenicity groups

№ s/o	Name of microorganisms	Disease caused by this microorganism
1	2	3
I. Bacteria		
I group		
1.	Yersinia pestis	Plague
II group		
2.	Bacillus anthracis	Splenic fever
3.	Brucella abortus Brucella melitensis Brucella suis	Brucellosis
4.	Francisella tularensis	Tularemia
5.	Legionella pneumophila	Legionellosis
6.	Pseudomonas mallei	Glanders
7.	Pseudomonas pseudomallei	Melioidosis
	Vibrio cholerae 01 toxicogenic	

8.	<i>Vibrio cholerae</i> non 01 toxicogenic	Cholera
III group		
9.	<i>Bordetella pertussis</i>	Pertussis
10.	<i>Borrelia recurrentia</i>	Relapsing fever
11.	<i>Campylobacter fetus</i>	Abscesses, septicemia
12.	<i>Campylobacter jejuni</i>	Enteritis, cholecystitis, septicemia
13.	<i>Clostridium botulinum</i>	Botulism
14.	<i>Clostridium tetani</i>	Tetanus
15.	<i>Corynebacterium diphtheria</i>	Diphtheria
16.	<i>Eryaipelothrix rhusiopathiae</i>	Erysipeloid
17.	<i>Helicobacter pylori</i>	Gastritis, peptic ulcer of the stomach and duodenum
18.	<i>Leptospira interrogans</i>	Leptospirosis
19.	<i>Listeria monocytogenes</i>	Listeriosis
20.	<i>Mycobacterium leprae</i>	Leprosy
21.	<i>Mycobacterium tuberculosis</i> <i>Mycobacterium bovis</i> <i>Mycobacterium avium</i>	Tuberculosis
22.	<i>Neisseria gonorrhoeae</i>	Gonorrhoea
23.	<i>Neisseria meningitidis</i>	Meningitis
24.	<i>Nocardia asteroides</i>	Nocardiosis
25.	<i>Pasteurella multocida, haemolytica</i>	Pasteurellosis
26.	<i>Proactinomyces israelii</i>	Actinomycosis
27.	<i>Salmonella paratyphi A</i>	Paratyphus A
28.	<i>Salmonella paratyphi B</i>	Paratyphoid B
29.	<i>Salmonella typhi</i>	Typhoid fever
30.	<i>Shigella</i> spp.	Dysentery
31.	<i>Treponema pallidum</i>	Syphilis
32.	<i>Yersinia pseudotuberculosis</i>	Pseudotuberculosis
33.	<i>Vibrio cholerae</i> 01 non-toxicogenic	Diarrhea
34.	<i>Vibrio cholerae</i> 01 non-toxicogenic	Diarrhea, wound infections, septicemia, etc.
IV group		
35.	<i>Aerobacter aerogenes</i>	Enteritis
36.	<i>Bacillus cereus, Bacillus subtilis</i>	Foodborne Toxic Infection
37.	<i>Bacteroides</i> spp	Lung abscess, bacteremia
38.	<i>Borrelia</i> spp.	Tick-borne spirochetosis
39.	<i>Bordetella bronchiseptica</i> <i>Bordetella parapertussis</i>	Bronchosepticosis
40.	<i>Campylobacter</i> spp	Paracoccus
41.	<i>Citrobacter</i> spp	Gastroenteritis, gingivitis, periodontitis

42.	<i>Clostridium perfringens</i> , <i>Clostridium novyi</i> , <i>Clostridium septicum</i> , <i>Clostridium histolyticum</i> , <i>Clostridium bifermentans</i>	Local inflammatory processes, food toxicoinfections
43.	<i>Escherichia coli</i>	Gas gangrene
44.	<i>Eubacterium endocarditidis</i>	Enteritis
45.	<i>Eubacterium lentum</i> <i>Eubacterium ventriosum</i>	Septic endocarditis
46.	<i>Flavobacterium meningosepticum</i>	Meningitis, septicemia
47.	<i>Haemophilus influenza</i>	Meningitis, pneumonia, laryngitis
48.	<i>Hafnia alvei</i>	Cholecystitis, cystitis
49.	<i>Klebsiella ozaenae</i>	Ozaena
50.	<i>Klebsiella pneumoniae</i>	Pneumonia
51.	<i>Klebsiella rhinoscleromatis</i>	Rhinoscleroma
52.	<i>Mycobacterium</i> spp <i>Mycobacterium photochromogens</i> <i>Mycobacterium scrotochromogens</i> <i>Mycobacterium nonphotochromogens</i> <i>Mycobacterium rapid growers</i>	Mycobacteriosis
53.	<i>Micoplasma hominis</i> 1 <i>Micoplasma hominis</i> 2 <i>Micoplasma pneumoniae</i>	Local inflammatory processes, pneumonia
54.	<i>Propionibacterium avidum</i>	Sepsis, abscesses
55.	<i>Proteus</i> spp.	Foodborne infection, sepsis, local inflammatory processes
56.	<i>Pseudomonas aeruginosa</i>	Sepsis, local inflammatory processes
57.	<i>Salmonella</i> spp.	Salmonellosis
58.	<i>Serratia marcescens</i>	Sepsis, local inflammatory processes
59.	<i>Staphylococcus</i> spp.	Foodborne infection, septicemia, pneumonia
60.	<i>Streptococcus</i> spp	Pneumonia, tonsillitis, polyarthritis, septicemia
61.	<i>Vibrio</i> spp. <i>Vibrio parahaemolyticus</i> <i>Vibrio mimicus</i> <i>Vibrio fluvialis</i> <i>Vibrio vulnificus</i> <i>Vibrio alginolyticus</i>	Diarrhea, foodborne toxicosis, wound infection, septicemia, etc.
62.	<i>Yersinia enterocolitica</i>	Enteritis, colitis
63.	<i>Actinomyces albus</i>	Actinomycosis
2 <i>Rickettsia</i>		
II group		
64.	<i>Rickettsia prowazekii</i>	Epidemic typhus, Brill's disease
65.	<i>Rickettsia typhi</i>	Rat typhus

66.	<i>Rickettsia rickettsia</i>	Rocky Mountain Spotted Fever
67.	<i>Rickettsia tsutsugamushi</i>	Tsutsugamushi fever
68.	<i>Coxiella burnetii</i>	Coxiellosis (Q fever)
III group		
69.	<i>Rickettsia sibirica</i>	Tick-borne typhus of the North Asia
70.	<i>Rickettsia conorii</i>	Mediterranean spotted fever
71.	<i>Rickettsia sharoni</i>	Israeli fever
72.	<i>Rickettsia</i> sp. Now	Astrakhan fever
73.	<i>Rickettsia acari</i>	Vesicular rickettsiosis
74.	<i>Rickettsia australis</i>	Tick-borne typhus of North Queensland
75.	<i>Rickettsia japonica</i>	Japanese spotted fever
76.	<i>Rickettsia</i> sp. Now	African fever
77.	<i>Rickettsia</i> sp. Now штамм "TTT"	tick-borne rickettsiosis of Thailand
Ehrlichia (tribe Ehrlichiae, the fam. Rickettsiaceae)		
III group		
78.	<i>Ehrlichia sennetsu</i>	Sennetsu's disease
79.	<i>Ehrlichia canis</i>	No title
80.	<i>Ehrlichia chaffeensis</i>	No title
Phungi		
II group		
81.	<i>Blastomyces brasiliensis</i> , <i>dermatitidis</i>	Blastomycosis
82.	<i>Coccidioides immitis</i>	Coccidioidosis
83.	<i>Histoplasma capsulatum</i>	Histoplasmosis
III group		
84.	<i>Aspergillus flavus</i> <i>Aspergillus fumigatus</i>	Aspergillosis
85.	<i>Candida albicans</i>	Candidiasis
86.	<i>Cryptococcus neoformans</i>	Cryptococcosis
IV group		
87.	<i>Absidia corymbifera</i>	Mucorosis
88.	<i>Aspergillus niger</i> <i>Aspergillus nidulans</i>	Aspergillosis
89.	<i>Candida brumptii</i> <i>Candida crusei</i> <i>Candida intermedia</i> <i>Candida pseudotropicalis</i> <i>Candida tropicalis</i> <i>Candida guilliermondii</i>	Candidiasis
90.	<i>Cephalosporium acremonium</i> <i>Cephalosporium cinnabarium</i>	Cephalosporiasis
91.	<i>Epidermophyton floccosum</i>	Epidermophytosis

92.	<i>Geotrichum candidum</i>	Geotrichosis
93.	<i>Microsporum</i> spp.	Microsporia
94.	<i>Mucor mucedo</i>	Mucorosis
95.	<i>Penicillium crustosum</i> <i>Penicillium luteo-viride</i> <i>Penicillium notatum</i>	Penicilliosis
96.	<i>Pityrosporum orbiculare</i>	Versicolor tinea
97.	<i>Rhizopus nigricans</i>	Mucorosis
98.	<i>Trichophyton</i> spp.	Tiled Mucosis
99.	<i>Trichosporon cerebriforme</i>	Knotted trichosporia
5. Protozoaires		
III group		
100.	<i>Leishmania donovani</i>	Visceral leishmaniasis
101.	<i>Plasmodium vivax</i> <i>Plasmodium falciparum</i> <i>Plasmodium malariae</i> <i>Plasmodium ovale</i>	Malaria
102.	<i>Trichomonas vaginalis</i>	Genitourinary trichomoniasis
IV group		
103.	<i>Acanthamoeba culbertsoni</i> , spp	Meningoencephalitis
104.	<i>Babesia caucasica</i>	Babesiasis
105.	<i>Balantidium coli</i>	Balantidiasis
106.	<i>Entamoeba histolytica</i>	Amoebiasis
107.	<i>Isospora belli</i> <i>Lamblia intestinalis</i>	Enteritis
108.	<i>Naegleria</i> spp.	Meningoencephalitis
109.	<i>Pentatrichomonas hominis</i>	Colitis
110.	<i>Leishmania tropica major</i>	Cutaneous leishmaniasis
111.	<i>Toxoplasma gondii</i>	Toxoplasmosis
6. Viruses		
I group		
112.	Filoviridae: Marburg and Ebola viruses	Hemorrhagic fever
113.	Arenaviridae: lymphocytic choriomeningitis virus, Lassa, Junin, Machupo, Sebio viruses	Hemorrhagic fevers, Lymphatic choreomeningitis
114.	Poxviridae: Smallpox virus (variola), Monkey smallpox virus (Monkeypox)-	Human Natural smallpox, monkeypox
115.	Herpesviridae: monkey virus B	Chronic Encephalitis, Encephalopathy
II group		

116.	<p>Togaviridae: equine encephalomyelitis viruses: (Venezuelan-VEEL, East - EEL, Western - WEL).</p> <p>Semlika, Bibaru, Chikungunya, O' Nyong Nyong, Karelian, Sindbis, Ross, Mayiro, Mukambo Sagium fever viruses</p>	<p>Domestic encephalitis, encephalomyelitis,</p> <p>febrile diseases</p>
117.	<p>Flaviviridae: tick-borne encephalitis complex viruses (TBE): Alma Arasan, Apon, Langat, Negishi, Povassan, Scottish Encephalomyelitis of Sheep, Diseases of the Kiassanur Forest, Omsk hemorrhagic fever (OHL) Viruses of the complex of Japanese encephalitis (JE), West Nile, Ilheus, Rocio, St. Louis, encephalitis, Usutu, encephalitis of the Murray Karshi Valley, Kunzhin, Sepik, Wesselsborn Zika, Riobravo, Dengue, Sokuluk Yellow fever virus Hepatitis C virus. Hepatitis G virus</p>	<p>Encephalitis, Encephalomyelitis Hemorrhagic fever Encephalitis, meningoencephalitis Febrile illness Hemorrhagic fever Parenteral hepatitis, hepatocellular hepatoma of the liver.</p>
118.	<p>Bunyaviridae, California Encephalitis Complex, La Crosse, Jamestunkanion, Encephalitis, Inko, Tyagin. Complex C-viruses Aneu, Madrid, Oriboka, Ossa, Restan, etc. mosquito-fever viruses of Sicily, Naples, Rift Valley, Tuscany, etc. Crimean hemorrhagic fever virus Ganjam, Congo, Dugbe Hantaan, Seoul, Puma viruses Chile, Hido, etc.</p>	<p>Encephalitis, encephalomyelitis, meningoencephalitis, febrile diseases with meningeal syndrome and arthritis. Febrile diseases Myositis and arthritis Encephalitis and febrile diseases with arthritis and myositis Fever with meningeal syndrome Hemorrhagic fevers, hemorrhagic fevers with renal syndrome Hemorrhagic fever with renal syndrome (HFRS), and with pulmonary syndrome</p>
119.	<p>Reoviridae, Kemerovo viruses, Colorado tick-borne fever, Blue sheep tongue, Changvinola, Orungo, etc.</p>	<p>Fever with meningeal syndrome and arthritis</p>
120.	<p>Rhabdoviridae, rabies virus Wilds Lagos Bat</p>	<p>Rabies, Pseudorabies and Encephalopathies</p>
121.	<p>Picornaviridae, FMD virus</p>	<p>Epizootic apthae</p>

122.	Arenaviridae: viruses of lymphocytic choriomeningitis, Tokaribe, Pichinda	Asthenic meningitis and meningoencephalitis
123.	Hepadnaviridae: hepatitis B virus	Parenteral hepatitis
124.	Retroviridae: Human Immunodeficiency Viruses (HIV-1, HIV-2) T viruses - human cell leukemia (HTLV-1,2)	AIDS, human T-cell leukemia
125.	NODAVIRIDAE Hepatitis D viruses (delta) and E	Infectious hepatitis
126.	Coronavirids SARS virus	SARS
127.	causative agent of Creutzfeld– Jacob Disease The causative agent of human transmissible spongiform encephalopathy The causative agent of olivopontocerebellar human atrophy trotting disease Causative agent of bovine spongiform encephalopathy	Creutzfeldt-Jakob disease, Gerstman-Straussler syndrome Amyotrophic leukospongi (Belarus) Olivopontocerebral atrophy of the 1st type of Yakutia, Eastern Siberia) Subacute encephalopathy of sheep and goats Bovine spongiform encephalopathy
III group		
128.	Orthomyxoviridae: influenza viruses	Flu: A, B, C
129.	Picornaviridae: polio viruses wild strains hepatitis A virus acute hemorrhagic conjunctivitis virus, enterovirus -70 type	Poliomelitis Hepatitis A, enteric hepatitis Hemorrhagic conjunctivitis
130.	Herpesviridae: Herpes simplex viruses 1 and 2 types , Chickenpox virus - herpes - Zoster - chickenpox herpes simplex virus type 6 (HBLV-HHV6) Cytomegaly virus human herpes virus type 4	Herpes simplex viruses: neonatal infection, genital herpes in men, meningitis, chickenpox, herpes zoster. Disease of human lymphocytes, puerperal exanthema, lymphoproliferative diseases Cytomegaly Infectious mononucleosis, Burkitt's lymphoma, nasopharyngeal carcinoma
IV-group		
131.	Adenoviridae: all types of adenoviruses	ARVI, pneumonia, conjunctivitis
132.	Reoviridae, Human Reoviruses	- rhinitis, gastroenteritis

	Human rotaviruses, Nebraska calf diarrhea virus (NCDV)	- gastroenteritis and enteritis
133.	Picornaviridae, Coxsackie virus of groups A and B ECHO viruses Enterovirus types 68-71 Human Rhinoviruses-130 types Cardiovirus: virus encephalomyocarditis and Mengo virus.	ARVI, diseases of Bornholm, herpangin, polyneuritis, serous meningitis, diarrhea, ARVI, polyneuritis, uveitis serous meningitis, conjunctivitis, ARVI Conjunctivitis, herpangina ARVI, polyneuritis ARVI, polyneuritis viruses, Encephalomyocarditis, pericarditis
134.	Coronaviridae human coronaviruses	ARVI (profuse rhinitis without fever), enteritis
135.	Caliciviridae: Norfolk virus	Acute gastroenteritis
136.	Paramyxoviridae: human parainfluenza viruses of type 1-4 respiratory syncytial virus (PC virus) , mumps virus, measles virus Newcastle disease virus	SARS, bronchopneumonia, Pneumonia, bronchitis, bronchiolitis, mumps, Measles, Conjunctivitis
137	Togaviridae genus Rubivirus: rubella virus	Rubella
138.	Rabdoviridae, Род Vesiculovirus: vesicular stomatitis virus	Vesicular stomatitis
139.	Poxviridae: cowpox virus, ectromelia virus, milking nodule virus, Orfavirus Molluscum contagiosum virus Tanapox and Yaba viruses	Cow Smallpox Mice Ectromelia Chronic hand milking disease Contagious pustular dermatitis Molluscum contagiosum Tanapox and Yaba's Disease
7. Chlamydia		
II group		
140.	Chlamydia psittaci	Ornithosis-psittacosis
III group		
141.	Chlamydia trachomatis	Trachoma, urogenital chlamydia
142.	Chlamydia paratrachomatis	Trachoma like conjunctivitis
143.	Chlamydia venereal lymphagranulema	Venereal lymphogranuloma, disease of inguinal lymph nodes
Poisons of biological origin		
II group		
144.	Botulinum toxins of all kinds	Botulism
145.	Tetanus toxin	
146.	Karakurt spider venom	
III group		

147.	Mycotoxins	Mycotoxicosis
148.	Diphtheria toxin	
149.	Streptococcal toxin of A group	
150.	Staphylococcal toxins	
151.	Poisons of snakes (cobras, efa, gyurza and others)	
152.	Helminths	Helminthiasis

Note: attenuated strains of pathogens of I - II pathogenicity groups belong to microorganisms of 3 pathogenicity groups. Attenuated strains of groups III - IV are assigned to the 4th group of pathogenicity.

Appendix 4
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"
Document form
Approved by
Head of laboratory

surname, name, patronymic
(if any)
" " "

**Act of destroying a strain of microorganisms of I-II pathogenicity groups
of _____ 20__ № _____**

We, the undersigned, _____

_____ (position, surname, name, patronymic (if any))

_____ pursuant to permission of _____

_____ (surname, name, patronymic (if any))
and the position of the person who issued the permit, number and date of permit

_____ destroyed a pathogenic microorganism

(name of the species, No. of strains, number of objects)

by autoclaving _____ or by immersion
(autoclaving mode)
into _____

(name of the disinfectant solution, its concentration, disinfection time)
Date of destruction of the pathogen _____

Signatures:

Appendix 5
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"
Document form
Approved by
Head of laboratory

surname, name, patronymic
(if any)

" _____ " _____

**Act of opening the ampoules (s) with dry (and) pathogenic microorganisms of the
I – IV pathogenicity groups for the purpose of seeding or destruction
of _____ 20__ № _____**

We, the undersigned, _____

(position, surname, name, patronymic (if any))

pursuant to permission of _____

(surname, name, patronymic (if any))

(and the position of the person who issued the permit, number and date of permit)

opened the vial (s) with a dry microorganism _____

(name of species, No. of strains, number of objects) _____

with the purpose of _____

(microorganism seeding or its destruction)

The ampoule (s) with the remains of a pathogenic microorganism is (are) disinfected

_____ by autoclaving _____ or immersion

(date)

(autoclaving mode)

(name of the disinfectant solution, its concentration, disinfection time)

Date of opening of ampoule (s) _____

Signatures:

Appendix 6
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"
Document form
Approved by
Head of laboratory

surname, name, patronymic
(if any)

" _____ " _____

Act of transfer of pathogenic biological agents of I-II pathogenicity groups and collection microorganisms of III-IV groups within the laboratory (of the organization)

of _____ 20__ № _____

We, the undersigned _____

(position, surname, name, patronymic (if any) of the person transferring the pathogenic microorganism, place of transfer)

(position, surname, name, patronymic (if any) of the person who received the pathogenic microorganism)

made up this act that, according to the order of the head of the laboratory (department)

pathogenic microorganism has been transferred:

(name of the species, No. of strains, number of objects)

Transfer date

Transferred by:

(surname, name, patronymic (if any), signature)

Accepted by:

(surname, name, patronymic (if any), signature)

Appendix 7
to the Sanitary Rules
"Sanitary and Epidemiological
Laboratory Requirements
Using Potentially
Hazardous Chemicals and
Biological Substances"
Document form
Approved by
Head of laboratory

surname, name, patronymic
(if any)

" " _____

Act of transfer of microorganisms of the I-II pathogenicity groups to (after) temporary (th) storage (s) of _____ 20__ №_____

We, undersigned _____

_____ (position, full name (if any) of the person transferring the microorganism, place of transfer)

_____ have drawn up this act that, according to the executive order of the head of the laboratory (department)

_____ the microorganism has been transferred:

_____ (name of the species, No. of strains, number of objects, transfer conditions: with or without the right to reseed)

Packed in _____

Affixed by a seal of _____

_____ (imprint of the seal, name (if any) of the owner of the seal)

These microorganisms are placed in _____

_____ (No. of the room, safe and refrigerator)

Simultaneously transferred _____

_____ (the name of the accounting documentation, the key to the safe)

Transfer date _____

Transferred by: _____

_____ (Name, surname, patronymic (if any), signature)

Accepted by: _____

_____ ((Name, surname, patronymic (if any), signature)

**Act of transfer of microorganisms of I-IV pathogenicity groups outside the organization
of _____ 20__ №_____**

We, the undersigned, _____

(Name, surname, patronymic (if any), of the person who transferred the
microorganism, place of transfer)

(position, name, surname, patronymic (if any) of the recipient, name of
organization)

made up this act that, according to the executive order of the head of the
organization _____

_____ the microorganism has been transferred:

(name of the species, No. of strains, number of objects, type of packaging)

Transfer date _____

Transferred by: _____

(Name, surname, patronymic (if any), signature)

Accepted by: _____

(Name, surname, patronymic (if any), signature)

Stamp of the organization typographic Manufacture Control Service

Accompanying document for the transportation of special cargo
has been issued to the representative (s) of _____

(name of the organization)

(Name, surname, patronymic (if any), position)
that he/she/they deliver (s) special cargo to _____

(name of the microorganism)
special cargo has been packed in _____

(package type)

sealed with a wax seal _____

(laboratory name)

№ ____ and placed into a wooden parcel box, sheathed in white cloth and sealed
with a seal with the same print..

Special cargo is not explosive, not flammable, not subject to all types of inspection
and control!

Transportation of special cargo _____ is
permitted.

(mode of transport)

Head of the organization _____

(signature)

Official stamp