FACTORIES (CONTROL OF BIOLOGICAL AGENTS AT WORK) REGULATIONS, 1999

Regulations made under ss.58 and 81.

FACTORIES (CONTROL OF BIOLOGICAL AGENTS AT WORK) REGULATIONS, 1999

Repealed by LN. 2006/082 as from 1.6.2006

(LN. 1999/035)

15.4.1999

Amending enactments	Relevant current provisions	Commencement date
None		

FACTORIES (CONTROL OF BIOLOGICAL AGENTS AT WORK) REGULATIONS, 1999

ARRANGEMENT OF REGULATIONS.

Regulation

FACTORIES (CONTROL OF BIOLOGICAL AGENTS AT WORK) REGULATIONS, 1999

Title.

1. These Regulations may be cited as the Factories (Control of Biological Agents at Work) Regulations, 1999.

Interpretation.

2. In these Regulations, unless the context otherwise requires–

"biological agent" means any micro-organism, cell culture, or human endoparasite, including any which have been genetically modified, which may cause any infection, allergy, toxicity or otherwise create a hazard to human health;

"the Directive" means Council Directive 90/679/EEC on the protection of workers from risks related to exposure to biological agents at work as amended;

"Group 2, 3 or 4 biological agents" means such biological agent classified in accordance with Schedule 1;

"micro-organism" means a microbiological entity, cellular or non-cellular, which is capable of replication or of transferring genetic material.

Assessment of health risks created by work involving biological agents.

3.(1) An employer shall not carry on any work which is liable to expose any employees to any hazard caused by a biological agent unless he has made a suitable and sufficient assessment of the risks created by that work to the health of those employees and of the steps that need to be taken to meet the requirements of these Regulations.

(2) The assessment required by subregulation (1) shall be reviewed regularly and forthwith if–

(a) there is reason to suspect that the assessment is no longer valid; or

(b) there has been a significant change in the work to which the assessment relates,

and, where as a result of the review, changes in the assessment are required, those changes shall be made.

(3) The assessment required by subregulation (1) shall be conducted on the basis of all available information and shall take into account the classification of biological agents as set out in Schedule 1.

(4) For the purposes of the assessment under subregulation (1), particular attention should be paid to–

(a) uncertainties about the presence of biological agents in human patients or animals and the materials and specimens taken from them; and

(b) the hazard represented by biological agents known or suspected to be present in human patients or animals and materials and specimens taken from them.

Prevention or control of exposure to biological agents.

4.(1) Every employer shall ensure that the exposure of his employees to biological agents is either prevented or, where this is not reasonably practicable, adequately controlled.

(2) Without prejudice to the generality of subregulation (1), where the assessment made under regulation 3 shows that it is not reasonably practicable to prevent exposure to a hazard caused by a biological agent by using an alternative substance or process, the measures taken by the employer shall include the following–

(a) the keeping of the number of persons who might be exposed to biological agents to a minimum;

(b) the use of plant, processes and systems of work which prevent or minimise the release of biological agents;

(c) the provision of hygiene measures including adequate washing facilities;

(d) the use of the warning sign contained in Annex II to the Directive;

(e) the drawing up of plans to deal with accidents involving biological agents;

(f) the testing, where necessary and technically possible, for the presence, outside the primary physical confinement, of biological agents used at work;

(g) the means for the safe collection, storage and disposal of waste by workers, including the use of secure and identifiable containers, after suitable treatment where appropriate;

(h) the arrangements for the safe handling and transport of biological agents within the workplace;

(i) the prohibition of eating or drinking in work areas in which there is a risk of contamination by biological agents;

(j) the implementing of appropriate decontamination and disinfection procedures.

(3) Where the measures taken in accordance with subregulation (2) do not prevent, or provide adequate control of, exposure to biological agents to which that paragraph applies, then, in addition to taking those measures, the employer shall provide those employees with such suitable personal protective equipment as will adequately control their exposure to those substances.

(4) Any personal protective equipment provided by an employer should be–

(a) properly stored in a well defined place;

(b) checked and cleaned, if possible, before and in any case after, each use; and

(c) repaired or replaced where defective before further use.

(5) Protective equipment referred to in subregulation (4) which may be contaminated by biological agents must be removed on leaving the working area and, before taking the measures referred to in subregulation (6), kept separately from other clothing.

(6) The employer shall ensure that such clothing and protective equipment is decontaminated and cleaned or, if necessary, destroyed.

(7) Employees may not be charged for the cost of the measures referred to in subregulations (5) and (6).

Information and training of workers who may be exposed to biological agents.

5. An employer who undertakes work which may expose any of his employees to biological agents shall provide that employee with such

information, instruction and training as is suitable and sufficient for him to know–

(a) the risks to health created by such exposure;

(b) the precautions which should be taken;

(c) any hygiene requirement which should be taken;

(d) the need to wear, if necessary, protective equipment and clothing; and

(e) what steps should be taken by workers in the case of exposure and to prevent exposure.

Notification to the Factories Inspectors.

6.(1) Prior notification in writing by the proposed user shall be made, at least 30 days before the commencement of work, to the Factories Inspectors of the use for the first time of Group 2, 3 or 4 biological agents.

(2) Except for laboratories providing a diagnostic service in relation to Group 4 biological agents, prior notification as in subregulation (1) shall be made of the use for the first time of each subsequent new Group 4 biological agent and of any subsequent new Group 3 biological agent.

(3) Further notification shall be made by the proposed user of any Group 2, 3 or 4 biological agents if circumstances have changed so that the original notification is no longer valid.

(4) Any notification under subregulation (1), (2) or (3) shall include–

(a) the name and address of the proposed user;

(b) the name and qualifications or experience of the person responsible for health and safety at work;

(c) the results of the assessment carried out under regulation 3;

(d) the species of biological agent; and

(e) the protective and preventive steps envisaged under that assessment.

Duty to report accidents and incidents.

7.(1) Every employer shall provide written instructions at the workplace and, if appropriate, display notices which shall include the procedure to be followed in the case of–

(a) an accident or incident which has or may have resulted in the release of a biological agent which could cause severe human disease; and

(b) the handling of a Group 4 biological agent or material that may contain such an agent.

(2) Every employee shall report forthwith, to his employer or to any other employee of that employer with specific responsibility for the health and safety of his fellow employees, any accident or incident which has or may have resulted in the release of a biological agent which could cause severe human disease.

(3) Every employer shall inform his employees or their representatives–

(a) forthwith, of any accident or incident which has or may have resulted in the release of a biological agent which could cause severe human disease; and

(b) as soon as practicable thereafter, of

(i) the causes of such an accident or incident; and

(ii) the measures taken or to be taken to rectify the situation.

Keeping of lists of exposed employees.

8. Every employer shall–

(a) keep a list of the employees who may be exposed to a group 3 or a group 4 biological agent (or both), indicating the type of work done by each employee, and, whenever possible, the biological agent to which they have been exposed, as well as records of exposures, accidents and incidents, as appropriate;

(b) keep the list referred to in paragraph (a) for at least 10 years following the end of exposure;

(c) keep the list referred to in paragraph (a) for a longer period not exceeding 40 years, depending on the likely duration of risk to the health and safety of employees determined during the risk assessment referred to in regulation 3, following the last known

exposure in the case of those exposures which may result in infections–

(i) with a biological agent known to be capable of establishing persistent or latent infections,

(ii) that in the light of present knowledge, are undiagnoseable until illness later develops,

(iii) that have particularly long incubation periods before illness develops,

(iv) that result in an illness which recrudesce at times over a long period despite treatment, or

(v) that may have serious long-term sequelae;

(d) ensure that each employee has access to the information on the list which relates to him;

(e) ensure that the employees or their safety representative (or both) have access to collective information which does not identify information relating to any individual employee; and

(f) ensure that the list is made available, on request, to the Factories Inspectors.

Health Surveillance.

9.(1) Where it is appropriate for the protection of the health of his employees who are, or are liable to be, exposed to a biological agent, the employer shall ensure that such employees are under suitable health surveillance.

(2) Health surveillance shall be treated as appropriate when the exposure to an employee of a biological agent is such that an identifiable disease or adverse health effect may be related to the exposure, there is reasonable likelihood that the disease or effect may occur under the particular conditions of his work and there are valid techniques for detecting indications of the disease or the effect.

(3) The employer shall ensure that a health record, in respect of each of his employees to whom subregulation (1) relates, is made and maintained and that that record or a copy thereof is kept in a suitable form for at least 10 years from the end of exposure, or up to 40 years in the circumstances mentioned in regulation 8(c).

(4) Where an employer who holds records in accordance with subregulation (3) ceases to trade, he shall forthwith notify the Factories Inspectors thereof in writing and offer those records to the Factories Inspectors.

(5) Where an employee is found to be suffering from an infection or illness which is suspected to be the result of exposure to a biological agent, the doctor or authority responsible for health surveillance of employees shall offer such surveillance to other employees who have been similarly exposed.

(6) Where an effective vaccine (as indicated by 'V' in Schedule 1) against the effects of exposure to a biological agent is made available by an employer, that employer shall–

(a) offer the vaccination free of charge;

(b) inform the employees of the advantages and disadvantages of vaccination; and

(c) make a certificate of vaccination available to any employee who has been vaccinated.

(7) On reasonable notice being given, the employer shall allow any of his employees access to the health record which relates to him.

Special measures for animal rooms, laboratories and industrial processes, and health and veterinary care facilities.

10.(1) Every employer who is engaged in any of the activities specified in subregulation (3) shall ensure that measures taken to control adequately the exposure of his employees to biological agents include, in particular, the most suitable combination of containment measures from those listed in Schedules 2 and 3 as appropriate, taking into account–

(a) the nature of the activity specified in subregulation (3);

(b) the minimum containment level specified in subregulation (4);

(c) the assessment of risk made under regulation 3; and

(d) the nature of the biological agent concerned.

(2) The following measures shall apply–

(a) an employer who is engaged in any of the activities specified in paragraph (a) or (b) of subregulation (3) shall select measures from Schedule 2; and

(b) an employer who is engaged in the activity specified in paragraph (c) of subregulation (3) shall select measures from Schedule 3 and, subject to subregulation (4), when making that selection he may combine measures from different categories of containment on the basis of a risk assessment related to any particular process or part of a process.

(3) The activities referred to in subregulations (1) and (2) are–

(a) research, development, teaching or diagnostic work in laboratories which involves the handling of a Group 2, Group 3 or Group 4 biological agent or material containing such an agent;

(b) keeping or handling of laboratory animals which have been deliberately infected with a Group 2, Group 3 or Group 4 biological agent or which are, or are suspected of being, naturally infected with such an agent; and

(c) industrial processes which involve the use of a Group 2, Group 3 or Group 4 biological agent.

(4) The minimum containment level referred to in subregulation (1) shall be–

(a) level 2 for activities involving the handling of a Group 2 biological agent;

(b) level 3 for activities involving the handling of Group 3 biological agent;

(c) level 4 for activities involving the handling of a Group 4 biological agent;

(d) level 2 for laboratories which do not intentionally work with biological agents but in respect of which there exist uncertainties about the presence of a Group 2, Group 3 or Group 4 biological agent;

(e) level 3 or 4, where appropriate, for laboratories which do not intentionally work with biological agents but where the employer knows or suspects that the relevant containment level is necessary; and

(f) level 3 for activities where it has not been possible to carry out a conclusive assessment but concerning which it appears that the activity might involve a serious health risk for employees.

(5) Every employer who is involved in health and veterinary care isolation facilities where there are human patients or animals which are, or are suspected of being, infected with a Group 3 or Group 4 biological agent shall select the most suitable containment measures from those listed in Schedule 2 with a view to controlling adequately the risk of infection.

FACTORIES (CONTROL OF BIOLOGICAL AGENTS AT WORK) REGULATIONS, 1999
SCHEDULE 1

regulations 2 and 3(3)

Biological agents

(1) Certain biological agents classified in group 3, which are indicated in the list by an asterisk (*), may present a limited risk of infection for employees because they are not normally infectious by the air-borne route. The Factories Inspectors may, at the request of an employer using these agents, permit the employer to dispense with some of the containment measures provided for in Schedule 2.

(2) The list also gives a separate indication in cases where the biological agent is likely to cause allergic or toxic reactions, where an effective vaccine is available, or where it is advisable to keep a list of exposed employees for more than ten years.

These indications are shown by the following letters:

A: Possible allergic effects

D: List of employees exposed to this biological agent to be kept for more than ten years after the end of last known exposure

T: Toxin production

V: Effective vaccine available

(3) For biological agents appearing on this list,"spp." refers to other species which are known pathogens in humans.

Biological Agent	Group	Notes
Bacteria and similar organisms		
Actinobacillus actinomycetemcomitans	2	
Actinomadura madurae	2	
Actinomadura pelletieri	2	
Actinomyces gerencseriae	2	
Actinomyces israelii	2	
Actinomyces pyogenes	2	
Actinomyces spp.	2	
Arcanobacterium haemolyticum (Corynebacterium haemolyticum)	2	
Bacillus anthracis	3	
Bacteroides fragilis	2	

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Bartonella bacilliformis	2	
Bartonella (Rochalimea) spp	2	
Bordetella bronchiseptica	2	
Bordetella parapertussis	2	
Bordetella pertussis	2	V
Borrelia burgdorferi	2	
Borrelia duttonii	2	
Borrelia recurrentis	2	
Borrelia spp.	2	
Brucella abortus	3	
Brucella canis	3	
Brucella melitensis	3	
Brucella suis	3	
Campylobacter fetus	2	
Campylobacter jejuni	2	
Campylobacter spp.	2	
Cardiobacterium hominis	2	
Chlamydia pneumoniae	2	
Chlamydia trachomatis	2	
Chlamydia psittaci (avian strains)	3	
Chlamydia psittaci (other strains)	2	
Clostridium botulinum	2	T
Clostridium perfringens	2	
Clostridium tetani	2	T.V
Clostridium spp.	2	
Corynebacterium diphtheriae	2	T.V
Corynebacterium minutissimum	2	
Corynebacterium pseudotuberculosis	2	
Corynebacterium spp.	2	
Coxiella burnetii	3	
Edwardsiella tarda	2	
Ehrlichia sennetsu (Rickettsia sennetsu)	2	
Ehrlichia spp.	2	
Eikenella corrodens	2	
Enterobacter aerogenes/cloacae	2	
Enterobacter spp.	2	
Enterococcus spp.	2	
Erysipelothrix rhusipathiae	2	
Escherichia coli (with the exception of non-pathogenic strains)	2	
Escherichia coli, verocytotoxigenic strains (e.g. 0157:H7 or 0103)	3*	T
Flavobacterium meningosepticum	2	
Fluoribacter bozemanae (Legionella)	2	
Francisella tularensis (Type A)	3	
Francisella tularensis (Type B)	2	

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Fusobacterium necrophorum	2	
Gardnerella vaginalis	2	
Haemophilus ducreyi	2	
Haemophilus influenzae	2	
Haemophilus spp.	2	
Helicobacter pylori	2	
Klebsiella oxytoca	2	
Klebsiella pneumoniae	2	
Klebsiella spp.	2	
Legionella pneumophila	2	
Legionella spp.	2	
Leptospira interrogans (all serovars)	2	
Listeria monocytogenes	2	
Listeria ivanovii	2	
Morganella morganii	2	
Mycobacterium africanum	3	V
Mycobacterium avium/intracellulare	2	
Mycobacterium bovis (except BCG strain)	3	V
Mycobacterium chelonae	2	
Mycobacterium fortuitum	2	
Mycobacterium kansasii	2	
Mycobacterium leprae	3	
Mycobacterium malmoense	2	
Mycobacterium marinum	2	
Mycobacterium microti	3*	
Mycobacterium paratuberculosis	2	
Mycobacterium scrofulaceum	2	
Mycobacterium simiae	2	
Mycobacterium szulgai	2	
Mycobacterium tuberculosis	3	V
Mycobacterium ulcerans	3*	
Mycobacterium xenopi	2	
Mycoplasma caviae	2	
Mycoplasma hominis	2	
Mycoplasma pneumoniae	2	
Neisseria gonorrhoeae	2	
Neisseria meningitidis	2	V
Nocardia asteroides	2	
Nocardia brasiliensis	2	
Nocardia farcinica	2	
Nocardia nova	2	
Nocardia otitidiscaviarum	2	
Pasteurella multocida	2	
Pasteurella spp.	2	
Peptostreptococcus anaerobius	2	
Plesiomonas shigelloides	2	

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Porphyromonas spp.	2	
Prevotella spp.	2	
Proteus mirabilis	2	
Proteus penneri	2	
Proteus vulgaris	2	
Providencia alcalifaciens	2	
Providencia rettgeri	2	
Providencia spp.	2	
Pseudomonas aeruginosa	2	
(Pseudomonas mallei) Burkholderia mallei	3	
(Pseudomonas pseudomallei) Burkholderia pseudomallei	3	
Rhodoccus equi	2	
Rickettsia akari	3*	
Rickettsia canada	3*	
Rickettsia conorii	3	
Rickettsia montana	3*	
Rickettsia typhi (Rickettsia mooseri)	3	
Rickettsia prowazekii	3	
Rickettsia rickettsii	3	
Rickettsia tsutsugamushi	3	
Rickettsia spp.	2	
(Rochalimaea quintana) Bartonella quintana	2	
Salmonella arizonae	2	
Salmonella enteritidis	2	
Salmonella typhimurium	2	
Salmonella paratyphi A,B, C	2	V
Salmonella typhi	3*	V
Salmonella (other serovars)	2	
Serpulina spp.	2	
Shigella bodii	2	
Shigella dysenteriae (Type 1)	3*	T
Shigella dysenteriae (other than Type 1)	2	
Shigella flexneri	2	
Shigella sonnei	2	
Staphylococcus aureus	2	
Streptobacillus moniliformis	2	
Streptococcus pneumoniae	2	
Streptococcus pyogenes	2	
Streptococcus spp.	2	
Streptococcus suis	2	
Treponema carateum	2	
Treponema pallidum	2	
Treponema pertenue	2	
Treponema spp.	2	
Vibrio cholerae (including El Tor)	2	

Vibrio parahaemolyticus	2	
Vibrio spp.	2	
Yersinia enterocolitica	2	
Yersinia pestis	3	V
Yersinia pseudotuberculosis	2	
Yersinia spp.	2	

Biological Agent Virus	Group	Notes
Adenoviridae *Arenaviridae*	2	
LCM-Lassa-Virus Complex (Old World arena viruses): Lassa virus Lymphocytic choriomeningitis virus (neurotropic strains) Lymphocytic choriomeningitis virus (other strains) Mopeia virus Other LCM-Lassa complex viruses Tacaribe-Virus-Complex (New World arenaviruses): Guanarito virus Junin virus Sabia virus Machupo virus Flexal virus other Tacaribe complex viruses	 4 4 3 2 2 2 4 4 4 4 4	
Astroviridae Bunyaviridae *Belgrade (also known as Dobrava)*	2 2	
Bhanja Bunyamwera virus Germiston Oropouche virus Sin nombre (formerly Muerto Canyon) California encephalitis virus		
Hantaviruses: Hantaan (Korean haemorrhagic fever) Seoul virus Puumala virus Prospect Hill virus	 3 3 2 2	

Other hantaviruses	2	
Nairoviruses:		
Crimean-Congo haemorrhagic fever	4	
Hazara virus	2	
Phleboviruses		
Rift Valley fever	3	V
Sandfly fever	2	
Toscana virus	2	
Other *bunyaviridae* known to be pathogenic	2	
Caliciviridae		
Hepatitis E virus	3	
Norwalk virus	2	
Other *Caliciviridae*	2	
Coronaviridae	2	
Filoviridae		
Ebola virus	4	
Marburg virus	4	
Flaviviridae		
Australia encephalitis (Murray Valley encephalitis)	3	
Central European tick-borne encephalitis virus	3*	
Absettarov	3	
Hanzalova	3	
Hypr	3	
Kumlinge	3	
Dengue virus type 1-4	3	
Hepatitis C virus	3*	D
Hepatitis G virus	3*	D
Japanese B encephalitis	3	V
Kyasanur Forest	3	V
Louping ill	3	
Omsk[(a)]	3	

[(a)] Tick-borne encephalitis

Powassan	3	
Rocio	3	
Russian spring-summer encephalitis (TBE)[a]	3	V
St Louis encephalitis	3	
Wesselsbron virus	3	
West Nile fever virus	3	
Yellow fever	3	V
Other flaviviruses known to be pathogenic	2	
Hepadnaviridae		
Hepatitis B virus	3	V.D
Hepatitis D virus (Delta)[b]	3	V.D
Herpesviridae		
Cytomegalovirus	2	
Epstein-Barr virus	2	
Herpesvirus simiae (B virus)	3	
Herpes simplex virus types 1 and 2	2	
Herpesvirus varicella-zoster	2	
Human B-lymphotropic virus (HBLV - HHV6)	2	
Human herpes virus 7	2	
Human herpes virus 8	2	D
Orthomyxoviridae		
Influenza viruses types A, B and C	2	V[c]
Tick-borne *orthomyxoviridae*: Dhori and Thogoto viruses	2	
Papovaviridae		
BK and JC viruses	2	D[d]
Human papillomaviruses	2	D[d]
Paramyxoviridae		
Measles virus	2	V
Mumps virus	2	V
Newcastle disease virus	2	
Parainfluenza viruses types 1 to 4	2	
Respiratory syncytial virus	2	

[b] Hepatitis D is pathogenic in workers only in the presence of simultaneous or secondary infection caused by Hepatitis B virus.

[c] Only for types A and B

[d] Recommended for work involving direct contact with these agents

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Parovoviridae		
Human parvovirus (B 19)	2	
Picornaviridae		
Acute haemorrhagic conjunctivitis virus (AHC)	2	
Coxsackie viruses	2	
Echo viruses	2	
Hepatitis A virus (human enterovirus type 72)	2	V
Polioviruses	2	V
Rhinoviruses	2	
Poxviridae		
Buffalopox virus[(e)]	2	
Cowpox virus	2	
Elephantpox virus[(f)]	2	
Milkers' node virus	2	
Molluscum contagiosum virus	2	
Monkeypox virus	3	V
Orf virus	2	
Rabbitpox virus[(g)]	2	
Vaccinia virus	2	
Variola (major minor) virus	4	V
Whitepox virus ("Variola virus")	4	V
Yatapox virus (Tana and Yaba)	2	
Reoviridae		
Coltivirus	2	
Human rotaviruses	2	
Orbiviruses	2	
Reoviruses	2	
Retroviridae		
Human immunodeficiency viruses	3*	D
Human T-cell lymphotropic viruses (HTLV) types 1 and 2	3*	
SIV[(h)]	3*	D

[(e)] Two viruses are identified: one a Buffalopox type and the other a variant of the Vaccinia virus

[(f)] Variant of cowpox virus

[(g)] Variant of Vaccinia

Rhabdoviridae		
Rabies virus	3*	V
Vesicular stomatitis virus	2	
Togaviridae		
Alfaviruses:		
Eastern equine encephalomyelitis		
Bebaru virus	2	
Chikungunya virus	3*	
Everglades virus	3*	
Mayaro virus	3	
Mucambo virus	3	
Ndumu virus	3	
O'nyong-nyong virus	2	
Ross River virus	2	
Semliki Forest virus	2	
Sindbis virus	2	
Tonate virus	3*	
Venezuelan equine encephalomyelitis	3	V
Western equine encephalomyelitis	3	V
Other known alphaviruses	2	
Rubivirus (rubella)	2	V
Toroviridae	2	
Unclassified viruses		
Hepatitis viruses not yet identified	3*	D
Equine morbillivirus	4	
Unconventional agents associated with the transmissible spongiform encephalopathies (TSEs)		
Creutzfeldt-Jakob disease	3*	D
Variant Creutzfeldt-Jakob disease	3*	D
Bovine spongiform encephalopathy (BSE) and other related animal TSEs[(i)]		

[(h)] At present there is no evidence of disease in humans caused by other retroviruses of simian origin. As a precaution, containment level 3 is recommended for work with them

[(i)] There is no evidence in humans of infections caused by the agents responsible for other animal TSEs.Nevertheless, the containment measures for agents classified in the risk group 3* are recommended as a precaution for laboratory work, except laboratory work relating to an identified agent of scrapie where containment level 2 is sufficient.

Gerstmann-Sträussler-Scheinker syndrome Unconventional agents associated with the transmissible Kuru	3	

Biological Agent Parasites	Group	Notes
Acanthamoeba castellani	2	
Ancylostoma duodenale	2	
Angiostrongylus cantonensis	2	
Angiostrongylus costaricensis	2	
Ascaris lumbricoides	2	A
Ascaris suum	2	A
Babesia divergens	2	
*Babesia microti***	2	
Balantidium coli	2	
Brugia malayi	2	
Brugia pahangi	2	
Capillaria philippinensis	2	
Capillaria spp.	2	
Clonorchis sinensis	2	
Clonorchis viverrini	2	
Cryptosporidium parvum	2	
Cryptosporidium spp.	2	
Cyclospora cayetanensis	2	
Dipetalonema streptocerca	2	
Diphyllobathrium latum	2	
Dracunculus medinensis	2	
Echinococcus granulosus	3*	
Echinococcus multilocularis	3*	
Echinococcus vogeli	3*	
Entamoeba histolytica	2	
Fasciola gigantica	2	
Fasciola hepatica	2	
Fasciolopsis buski	2	
Giardia lamblia (Giardia intestinalis)	2	
Hymenolepis diminuta	2	
Hymenolepis nana	2	
Leishmania brasiliensis	3*	
Leishmania donovani	3*	
Leishmania ethiopica	2	
Leishmannia mexicana	2	

Leishmania peruviana	2	
Leishmania tropica	2	
Leishmania major	2	
Leishmania spp.	2	
Loa loa	2	
Mansonella ozzardi	2	
Mansonella perstans	2	
Naegleria fowleri	3	
Necator americanus	2	
Onchocerca volvulus	2	
Opisthorchis felineus	2	
Opisthorchis spp.	2	
Paragronimus westermani	2	
Plasmodium falciparum	3*	
Plasmodium spp. (human and simian)	2	
Sarcocystitis suihominis	2	
Schistosoma haematobium	2	
Schistosoma intercalatum	2	
Schistosoma japonicum	2	
Schistosoma mansoni	2	
Schistosoma mekongi	2	
Strongyloides stercoralis	2	
Strongyloides spp.	2	
Taenia saginata	2	
Taenia solium	3*	
Toxocara canis	2	
Toxoplasma gondii	2	
Trichinella spiralis	2	
Trichuris trichiura	2	
Trypanosoma brucei brucei	2	
Trypanosoma brucei gambiense	2	
Trypanosoma brucei rhodesiense	3*	
Trypanosoma cruzi	3	
Wuchereria bancrofti	2	

Biological Agent **Fungi**	**Group**	**Notes**
Aspergillus fumigatus	2	A
Blastomyces dermatitidis (Ajellomyces dermatitidis)	3	
Candida albicans	2	A
Candida tropicalis	2	

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Cladophialophora bantiana (formerly *xylobipha bantiana, cladosporum bantianum* or *trichoides)*	3	
Coccidioides immitis	3	A
Cryptococcus neoformans var. *neoformans (Filobasidiella neoformans var. neoformans)*	2	A
Cryptococcus neoformans var. *gattii (Filobasidiella bacilispora)*	2	A
Emmonsia parva var. *parva*	2	
Emmonsia parva var. *crescens*	2	
Epidermophyton floccosum	2	A
Fonsecaea compacta	2	
Fonsecaea pedrosoi	2	
Histoplasma capsulatum var. *capsulatum (Ajellomyces capsulatus)*	3	
Histoplasma capsulatum duboisii	3	
Madurella grisea	2	
Madurella mycetomatis	2	
Microsporium spp	2	A
Neotestudina rosatii	2	
Paracoccidiodes brasiliensis	3	
Penicillum marneffei	2	A
Scedosporium apiospermum	2	
(Pseudallescheria boydii scedosporium proflicans (inflatuum)	2	
Sporothrix schenckii	2	
Trichophyton rubrum	2	
Trichophyton spp.	2	

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SCHEDULE 2

Regulation 8(1)

Indications Concerning Containment Measures and Containment Levels

Preliminary Note

The measures contained in this Schedule shall be applied according to the nature of the activities, the assessment of risk to workers and the nature of the biological agent concerned.

A. Containment measures	B. Containment levels		
	2	3	4
1. The workplace is to be separated from another activity in the same building	No	Recom-mended	Yes
2. Input air and extract air to the workplace are to be filtered using (HEPA) or likewise	No	Yes, on extract air	Yes, in input and extract air
3. Access is to be restricted to nominated workers only	Recom-mended	Yes	Yes, via airlock
4. The workplace is to be sealable to permit disinfection	No	Recom-mended	Yes
5. Specified disinfection procedures	Yes	Yes	Yes
6. The workplace is to be maintained at an air pressure negative to atmosphere	Yes	Recom-mended	Yes
7. Efficient vector control e.g. rodents and insects	Recom-mended	Yes	Yes
8. Surfaces impervious to water and easy to clean	Yes, for bench	Yes, for bench and floor	Yes, for bench, walls, floor and ceiling
9. Surfaces resistant to acids, alkalis, solvents, disinfectants	Recom-mended	Yes	Yes
10. Safe storage of a biological agent	Yes	Yes	Yes, secure storage
11. An observation window, or alternative, is to be present, so that occupants can be seen	Recom-mended	Recom-mended	Yes

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12.A laboratory is to contain its own equipment	No	Recom-mended	Yes
13. Infected material including any animal is to be handled in a safety cabinet or isolator or other suitable containment	Where appro-priate	Yes where infection is by airborne route	Yes
14. Incinerator for disposal of animal carcasses	Recom-mended	Yes (available)	Yes, on site

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SCHEDULE 3

Regulation 8(2)

Containment for Industrial Processes

Group 1 biological agents

For work with group 1 biological agents including life attenuated vaccines, the principles of good occupational safety and hygiene should be observed.

Group 2, 3 and 4 biological agents

It may be appropriate to select and combine containment requirements from different categories below on the basis of a risk assessment related to any particular process or part of a process.

Containment measures	Containment levels		
	2	3	4
1. Viable organisms should be handled in a system which physically separates the process from the environment	Yes	Yes	Yes
2. Exhaust gases from the closed system should be treated so as to:	Minimise release	Prevent release	Prevent release
3. Sample collection, addition of materials to a closed system and transfer of viable organisms to the closed system, should be performed so as to:	Minimise release	Prevent release	Prevent release
4. Bulk culture fluids should not be removed from the closed system unless the viable organisms have been:	Inactivated by validated means	Inactivated by validated chemical or physical means	Inactivated by validated chemical or physical means
5. Seals should be designed so as to:	Minimise release	Prevent release	Prevent release
6. Closed systems should be located within a controlled area	Optional	Optional	Yes, and purpose built

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(a) Biohazard signs should be posted	Optional	Yes	Yes
(b) Access should be restricted to nominated personnel only	Optional	Yes	Yes, via an airlock
(c) Personnel should wear protective clothing	Yes, work clothing	Yes	A complete change
(d) Decontaminated and washing facilities should be provided for personnel	Yes	Yes	Yes
(e) Personnel should shower before leaving the controlled area	Optional	Yes	Yes
(f) Effluent from sinks and showers should be collected and inactivated before release	Optional	Optional	Yes
(g) The controlled area should be adequately ventilated to minimise air contamination	Yes	Yes	Yes
(h) The controlled area should be maintained at an air pressure negative to atmosphere	Optional	Yes	Yes
(i) Input air and extractair to the controlled area should be HEPA filtered	No	Optional	Yes
(j) The controlled area should be designed to contain spillage of the entire contents of the closed system	No	Optional	Yes
(k) The controlled area should be sealable to permit fumigation	No	Optional	Yes
(l) Effluent treatment before final discharge	No	Optional	Yes