

S.I. No. 248/1998:  
SAFETY, HEALTH  
AND WELFARE AT  
WORK  
(BIOLOGICAL  
AGENTS)  
(AMENDMENT)  
REGULATIONS, 1998

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of 1998. SAFETY,  
HEALTH AND  
WELFARE AT WORK  
(BIOLOGICAL  
AGENTS)  
(AMENDMENT)  
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SAFETY, HEALTH AND WELFARE AT WORK  
(BIOLOGICAL AGENTS) (AMENDMENT)  
REGULATIONS, 1998

I, Tom Kitt, Minister of State at the Department of Enterprise, Trade and Employment, in exercise of the powers conferred on me by [section 28](#) of the [Safety, Health and Welfare at Work Act, 1989](#) (No. 7 of 1989) and the Labour (Transfer of Departmental Administration and Ministerial Functions) Order, 1993 ([S.I. No. 18 of 1993](#)), as adapted by the Enterprise and Employment (Alteration of Name of Department and Title of Minister) Order, 1997 ([S.I. No. 305 of 1997](#)), and the Enterprise, Trade and Employment (Delegation of Ministerial Functions) (No. 2) Order, 1997 ([S.I. No. 330 of 1997](#)), and after consultation with the National Authority for Occupational Safety and Health, and for the purpose of giving effect to Council Directives 90/679/EEC of 26 November 1990<sup>1</sup> as amended by Council Directive 93/88/EEC of 12 October 1993<sup>2</sup>, Commission Directive 95/30/EC of 30 June 1995<sup>3</sup>, Commission Directive 97/59/EC of 7 October 1997<sup>4</sup> and Commission Directive 97/65/EC of 26 November 1997<sup>5</sup>, hereby make the following regulations:—

<sup>1</sup> O.J. No. L 374 OF 31/12/90, pp. 1-12

<sup>2</sup> O.J. No. L 268 of 29/10/93, pp. 71-82

<sup>3</sup> O.J. No. L 155 of 6/7/95, pp. 41-42

<sup>4</sup> O.J. No. L 282 of 15/10/97, pp. 33-35

<sup>5</sup> O.J. No. L 335 of 6/12/97, pp. 17-18

1. These Regulations may be cited as the Safety, Health and Welfare at Work (Biological Agents) (Amendment) Regulations, 1998.

2. The Safety, Health and Welfare at Work (Biological Agents) Regulations, 1994 ([S.I. No. 146 of 1994](#)), are hereby amended by the substitution for the Fourth

Schedule thereto of the Schedule to these Regulations.

### *SCHEDULE*

#### *Classification of Biological Agents*

Regulation 4(e) (i)

6(2) (b)

1. Certain biological agents classified in Group 3 which are indicated in the appended list by an asterisk (\*), may present a limited risk of infection for workers because they are not normally infectious by the air-borne route.

2. This list also gives a separate indication in cases where the biological agents are likely to cause allergic or toxic reactions, where an effective vaccine is available, or where it is advisable to keep a list of exposed workers for more than 10 years.

These indications are shown by the following letters:

A: Possible allergic effects

D: List of workers exposed to this biological agent to be kept for more than 10 years after the end of last known exposure

T: Toxin production

V: Effective vaccine available

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

#### **BACTERIA**

And similar organism

<i>Biological Agents</i>	<i>Classification</i>	<i>Notes</i>
Actinobacillus actinomycetemcomitans	2	
Actinomadura madurae	2	
Actinomadura pelletieri	2	

Actinomyces gerencseriae	2	
Actinomyces israelii	2	
Actinomyces pyogenes	2	
Actionmyces spp.	2	
Arcanobacterium haemolyticum (Corynebacterium haemolyticum)	2	
Bacillus anthracis	3	
Bacteroides fragilis	2	
Bartonella bacilliformis	2	
Bartonella (Rochalimea) spp.	2	
Bordetella bronchiseptica	2	
Bordetella parapertussis	2	

<i>Biological Agents</i>	<i>Classification</i>	<i>Notes</i>
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 rhusiopathiae	2	
Escherichia coli (with the exception of non-pathogenic strains)	2	
Escherichia coli, verocytotoxigenic strains (e.g. O 157:H7 or O103)	3(*)	T
Flavobacterium meningosepticum	2	
Fluoribacter bozemanae (Legionella)	2	
Francisella tularensis (Type A)	3	
Francisella tularensis (Type B)	2	
Fusobacterium necrophorum	2	
Gardenerella 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	

<i>Biological Agents Classification</i>		<i>Notes</i>
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 pneumoniae	2	
Mycoplasma hominis	2	
Mycoplasma caviae	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	
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	
Burkholderia mallei (Pseudomonas mallei)	3	
Burkholderia pseudomallei (Pseudomonas pseudomallei)	3	
Rhodococcus 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	
Bartonella quintana (Rochalimaea quintana)	2	
Salmonella Arizonae	2	
Salmonella Enteritidis	2	
Salmonella Typhimurium	2	
Salmonella Paratyphi A, B, C	2	V
Salmonella Typhi	3(*)	V

<i>Biological Agents Classification</i>		<i>Notes</i>
Salmonella (other serovars)	2	
Serpulina spp.	2	
Shigella boydii	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 suis	2	
Streptococcus spp.	2	
Treponema carateum	2	
Treponema pallidum	2	
Treponema pertenuis	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	

(\*)See paragraph 1 of the introductory notes.

### VIRUS

<i>Biological Agents Classification</i>		<i>Notes</i>
Adenoviridae	2	
Arenaviridae		
LCM-Lassa-Virus Complex (Old World arena viruses):		
Lassa virus	4	
Lymphocytic choriomeningitis virus (neurotropic strains)	3	
Lymphocytic choriomeningitis virus (other strains)	2	
Mopeia virus	2	
Other LCM-Lassa complex viruses	2	
Tacaribe-Virus-Complex (New World arena		

viruses):		
Guanarito virus	4	
Junin virus	4	
Sabia virus	4	
Machupo virus	4	
Flexal virus	3	
Other Tacaribe complex viruses	2	
Astroviridae	2	
Bunyaviridae		
Germiston	2	
Sin Nombre (formerly Muerto Canyon)	3	
Belgrade (also known as Dobrava)	3	

<i>Biological Agents Classification</i>		<i>Notes</i>
Bhanja	2	
Bunyamwera virus	2	

Oropouche virus	3	
California encephalitis virus	2	
Hantaviruses:		
Hantaan (Korean haemorrhagic fever)	3	
Seoul virus	3	
Puumala virus	3	
Prospect Hill virus	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		
Hepatitis G	3(*)	D
Australia encephalitis (Murray Valley encephalitis)	3	
Central European tick-borne encephalitis virus	3(*)	V
Absettarov	3	



Hanzalova	3	
Hypr	3	
Kumlunge	3	
Dengue virus type 1-4	3	
Hepatitis C virus	3(*)	D
Japanese B encephalitis	3	V
Kyasanur Forest	3	V
Louping ill	3(*)	
Omsk (a)	3	V
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		
Human herpes virus 7	2	
Human herpes virus 8	2	D
Cytomegalovirus	2	
Epstein-Barr virus	2	

<i>Biological Agents</i>	<i>Classification</i>	<i>Notes</i>
Herpesvirus simiae (B virus)	3	
Herpes simplex virus types 1 and 2	2	
Herpesvirus varicella-zoster	2	
Human B-lymphotropic virus	2	

(HBLV-HHV6)		
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	
Parvoviridae		
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 & Yaba)	2	
Reoviridae		
Coltivirus	2	
Human rotaviruses	2	
Orbiviruses	2	
Reoviruses	2	
Retroviridae		
SIV virus (h)	3(*)	
Human immunodeficiency viruses	3(*)	D
Human T-cell lymphotropic viruses (HTLV) types 1 and 2	3(*)	D

Rhabdoviridae		
Rabies virus	3(*)	V
Visicular stomatitis virus	2	
Togaviridae		
Alfaviruses:		
Eastern equine encephalomyelitis	3	V
Bebaru virus	2	
Chickangunya virus	3(*)	
Everglades virus	3(*)	

<i>Biological Agent Classification</i>		<i>Notes</i>
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		
Equine morbillivirus	4	
Hepatitis viruses not yet identified	3(*)	D
Unconventional agents associated with the transmissible spongiform encephalopathies (TSEs):		
Creutzfeldt-Jacob disease	3(*)	D(d)
Variant Creutzfeldt-Jakob disease	3(*)	D(d)

Bovine spongiform encephalopathy (BSE) and other related animal TSEs (i)	3(*)	D(d)
Gerstmann-Straussler-Scheinker syndrome	3(*)	D(d)
Kuru	3(*)	D(d)

(\*)See paragraph 1 of the introductory notes.

(a) Tick-borne encephalitis.

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

Vaccination against hepatitis B virus will therefore protect workers who are not affected by hepatitis B virus against hepatitis D virus (Delta).

(c) Only for types A and B.

(d) Recommended for work involving direct contact with these agents.

(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.

(h) At present there is no evidence of disease in humans caused by the 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 categorised in risk group 3 (\*) are recommended as a precaution for laboratory work, except for laboratory work relating to an identified agent of scrapie where containment level 2 is sufficient.

#### PARASITES

<i>Biological Agent</i>	<i>Classification</i>	<i>Notes</i>
Acanthamoeba castellani	2	



Ancylostoma duodenale	2	
Angiostrongylus cantonensis	2	
Angiostrongylus costaricensis	2	
Ascaris lumbricoides	2	A
Ascaris suum	2	A

<i>Biological Agent</i>	<i>Classification</i>	<i>Notes</i>
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	
Diphyllobothrium latum	2	
Dracanculus 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	
Leishmania 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	
Paragonimus westermani	2	
Plasmodium falciparum	3(*)	
Plasmodium spp. (human and simian)	2	
Sarcocystis 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	

<i>Biological Agent</i>	<i>Classification</i>	<i>Notes</i>
Trichuris trichiura	2	
Trypanosoma brucei brucei	2	
Trypanosoma brucei gambiense	2	
Trypanosoma brucei rhodesiense	3(*)	
Trypanosoma cruzi	3	
Wuchereria bancrofti	2	

(\*)See paragraph 1 of the introductory notes.

#### FUNGI

<i>Biological Agent</i>	<i>Classification</i>	<i>Notes</i>
Aspergillus fumigatus	2	A
Blastomyces dermatitidis (Ajellomyces dermatitidis)	3	

Candida albicans	2	A
Candida tropicalis	2	
Cladophialophora bantinia (formerly: Xylophypha bantiana, Cladosporium bantianum or trichoides)	3	
Coccidioides immitis	3	A
Cryptococcus neoformans var. neoformans (Filobasidiella neoformansvar, Neoformans)	2	A
Cryptococcus neoformans var. gattii (Filobasidiella bacillispora)	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)		
Histoplasma capsulatum duboisii	3	
Madurella grisea	2	
Madurella mycetomatis	2	

Microsporium spp.	2	A
Neotestudina rosatii	2	
Paracoccidioides brasiliensis	3	
Penicillium marneffeii	2	A
Scedosporium apiospermum (Pseudallescheria boydii)	2	
Scedosporium proliferans (inflatum)	2	
Sporothrix schenckii	2	
Trichophyton rubrum	2	
Trichophyton spp.	2	

GIVEN under my hand, this 20<sup>th</sup> day of July, 1998

Tom Kitt, T. D.,

Minister of State at the Department of Enterprise, Trade  
and Employment

#### EXPLANATORY NOTE

These Regulations implement Commission Directive 95/30/EC of 30<sup>th</sup> June, 1995, Commission Directive 97/59/EC of 7<sup>th</sup> October, 1997, and Commission Directive 97/65/EC of 26th November 1997 on the protection of workers from risks related to exposure to a biological agent at work, which amended the list of biological agents contained in Council Directive 93/88/EEC. These Regulations replace the list of Biological Agents contained in the Fourth Schedule of the Safety, Health and Welfare at Work (Biological Agents) Regulations, 1994 which implemented Council Directives 90/679/EEC and 93/88/EEC on the protection of workers from risks related to exposure to biological agents at work, with the list contained in the Schedule of

these Regulations. In the list, biological agents are classified as Group 2, Group 3 and Group 4 agents. This classification is in ascending order of severity. Risk assessment and the provision of vaccination as provided for in Regulations 4 and 6 of the Safety, Health and Welfare at Work (Biological Agents) Regulations, 1994, respectively, must be carried out with reference to the list of biological agents in accordance with Regulations 4(e)(i) and 6(2)(b) of those Regulations.