



LAWS OF KENYA

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**THE OCCUPATIONAL SAFETY AND HEALTH ACT**

No. 15 OF 2007

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## THE OCCUPATIONAL SAFETY AND HEALTH ACT

## No. 15 of 2007

## ARRANGEMENT OF SECTIONS

## PART I—PRELIMINARY

*Section*

- 1—Short title.
- 2—Interpretation.
- 3—Application of Act.
- 4—Approval of codes of practice by Director.
- 5—Use of approved codes of practice in criminal proceedings.

## PART II—GENERAL DUTIES

- 6—Duties of occupiers.
- 7—Duty to prepare a safety and health policy statement.
- 8—Discrimination against employee etc.
- 9—Safety and health committees.
- 10—Duty not to charge employees for things done or provided.
- 11—Safety and health audits.
- 12—Duties of self employed persons.
- 13—Duties of employees.
- 14—Duty to report any dangerous situation.
- 15—Duty not to interfere with or misuse things provided pursuant to certain provisions.
- 16—prohibition against creation of hazards.
- 17—General duties of occupier and self-employed to persons other than their employees.
- 18—Duties of an occupier of a place of work to persons other than his employees.
- 19—General duty of persons in control of certain premises in relation to harmful emissions into atmosphere.
- 20—Duties of designers, manufacturers importers etc with regard to articles and substances for use at work.
- 21—Notice of accidents and dangerous occurrences.
- 22—Notification of occupational diseases.

## PART III—ADMINISTRATION

- 23—The Director.
- 24—Research and related activities.
- 25—Collection of occupation safety and health statistics.
- 26—Appointment of occupational safety and health officers.
- 27—Establishment of the National Council for Occupational Safety and Health.

*Section*

- 28—Membership of the Council.
- 29—Annual report.
- 30—Technical advisory committee.
- 31—Functions of the technical advisory committee.

## PART IV—ENFORCEMENT

- 32—Powers of an occupational safety and health officer.
- 33—Power of an occupational safety and health officer to conduct proceedings.
- 34—Power to take samples.
- 35—Power to deal with cause of imminent danger.
- 36—Improvement notices.
- 37—Prohibition notices.
- 38—Appeal against improvement or prohibition notice.
- 39—Provisions on prohibition notices and improvement notices.
- 40—Occupational safety and health officer not to disclose information or source of complaints.
- 41—Indemnity of occupational safety and health officers.
- 42—Safety and health advisor.

## PART V—REGISTRATION OF WORKPLACES

- 43—Register of workplaces.
- 44—Registration of workplaces.
- 45—Exceptions to registration.
- 46—Appeals.

## PART VI—HEALTH GENERAL PROVISIONS

- 47—Cleanliness.
- 48—Overcrowding.
- 49—Ventilation.
- 50—Lighting.
- 51—Drainage of floors.
- 52—Sanitary conveniences.
- 53—Enforcement of section 52 by local authorities.
- 54—Duty of occupational safety and health officer as to sanitary defects remediable by local authority.

## PART VII—MACHINERY SAFETY

- 55—Safe use of plant, machinery and equipment.
- 56—Prime movers.
- 57—Transmission machinery.
- 58—Other machinery.
- 59—Hand held and portable power tools and equipments.
- 60—Construction and maintenance of fencing.
- 61—Construction and disposal of new machinery.
- 62—Self acting machines.

*Section*

- 63—Hoists and lifts.
- 64—Chains, ropes and lifting tackle.
- 65—Cranes and other lifting machines.
- 66—Register of chains, ropes and lifting tackle and lifting machines.
- 67—Steam boilers.
- 68—Steam receivers and steam containers.
- 69—Air receivers.
- 70—Cylinders for compressed, liquefied and dissolved gases.
- 71—Refrigeration plants.
- 72—Examination and testing of plants.

## PART VIII—SAFETY GENERAL PROVISIONS

- 73—Vessels containing dangerous liquids.
- 74—Storage.
- 75—Ladders.
- 76—Ergonomics at the workplace.
- 77—Safe means of access and safe place of employment.
- 78—Fire prevention.
- 79—Precautions in places where dangerous fumes likely.
- 80—Precautions with respect to explosive or inflammable dust or gas.
- 81—Safety provisions in case of fire.
- 82—Evacuation procedures.

## PART IX—CHEMICAL SAFETY

- 83—The handling, transportation and disposal of chemicals and other hazardous substances materials.
- 84—Material safety data sheets.
- 85—Labelling and marking.
- 86—Classification of hazardous chemicals and substances.
- 87—Corrosive substances.
- 88—Exposure limits to hazardous substances.
- 89—Control of air pollution, noise and vibration.
- 90—Redeployment on medical advice.

## PART X—WELFARE GENERAL PROVISIONS

- 91—Supply of drinking water.
- 92—Washing facilities.
- 93—Accommodation for clothing.
- 94—Facilities for sitting.
- 95—First-aid.

## PART XI—HEALTH, SAFETY AND WELFARE-SPECIAL PROVISIONS

- 96—Permit to work.
- 97—Work processes which may harm persons below eighteen years.
- 98—Supervision of apprentices and indentured learners.

*Section*

- 99—Training and supervision of inexperienced workers.
- 100—Meals in certain dangerous trades.
- 101—Protective clothing and appliances.
- 102—Protection of eyes in certain processes.
- 103—Medical surveillance.

## PART XII—SPECIAL APPLICATIONS

- 104—Premises where part of building is separate workplace.
- 105—Premises in which steam boilers are used.
- 106—Premises in which hoists or lifts are used.
- 107—Platforms erected over water.

## PART XIII—OFFENCES, PENALTIES AND LEGAL PROCEEDINGS

- 108—Offences.
- 109—General penalty.
- 110—Court may order cause of contravention to be remedied.
- 111—Penalty in case of death or injury.
- 112—Forgery, false declaration etc.
- 113—Penalty on persons committing offence for which occupier is liable.
- 114—Exemption of occupier or owner on conviction of actual offender.
- 115—Proceedings against persons other than occupiers or owners.
- 116—Prosecution of offences.
- 117—Special provisions as to evidence.
- 118—Service of documents.
- 119—Power to modify agreements.
- 120—Power to apportion expenses.

## PART XIV—MISCELLANEOUS PROVISIONS

- 121—Posting of abstract of Act, rules and notices.
- 122—General registers.
- 123—Preservation of registers and records.
- 124—Return of persons employed.
- 125—Approval of plans of workplace premises.
- 126—Occupational Safety and Health Fund.
- 127—Safety and Health Regulations.
- 128—Power to direct formal investigation of accidents and cases of disease.
- 129—Repeal and savings.

## SCHEDULES

THE OCCUPATIONAL SAFETY AND HEALTH ACT

**No. 15 of 2007**

*Date of Assent: 22nd October, 2001*

*Date of Commencement: 26th October, 2007*

**AN ACT of Parliament to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes**

**ENACTED** by the Parliament of Kenya as follows—

PART I—PRELIMINARY

Short title. **1.** This Act may be cited as the Occupational Safety and Health Act, 2007.

Interpretation. **2.** In this Act, unless the context otherwise requires—

“air pollution” means air contaminated by substances whatever their physical state, which are harmful to health or otherwise dangerous;

“article for use at work” means—

(a) any plant designed for use or operation (whether exclusively or not) by persons at a workplace; and

(b) any article designed for use as a component in such plant.

“biological monitoring” means a planned programme of periodic collection and analysis of body fluid, tissues, excreta or exhaled air in order to detect and quantify the exposure to or absorption of any substance or organism by persons;

“bodily injury” includes injury to health;

“class or description” in relation to workplaces, includes a group of workplaces described by reference to a locality;

“code of practice” includes a standard, a specification and any other documentary form of practical guidance;

“competent person” in relation to any duty or function, means a

person who has adequate training, relevant qualifications and experience to enable him to perform that duty or function;

“court” means a magistrate’s court;

“Council” means the National Council for Occupational Safety and Health established under section 27;

“Director” means the Director of Occupational Safety and Health Services appointed under section 23;

“driving belt” includes any driving strap or rope;

“employee” means a person who works under a contract of employment and related expressions shall be construed accordingly;

“exposure” means the amount of a workplace agent that has reached an individual worker (external dose) or has been absorbed into the individual worker (absorbed dose);

“fume” includes gas or vapour;

“general register” means the register kept in a workplace as required under section 122;

“highly flammable liquid” means any liquid, liquid solution, emulsion or suspension which gives off a flammable vapour at a temperature of less than 32 degrees centigrade;

“improvement notice” means a notice issued under section 36 of this Act;

“machinery” means any article or combination of articles assembled, arranged or connected and which is used or intended to be used for converting any form of energy to performing work, or which is used or intended to be used, whether incidental thereto or not, for developing, receiving, storing, containing, confining, transforming, transmitting, transferring or controlling any form of energy;

“maintained” means maintained in an efficient state, in an efficient working order and in good repair;

“major hazard installation” means an installation—

- (a) where more than the prescribed quantity of any substance is or may be kept, whether permanently or temporarily; or

(b) where any substance is produced, processed, used, handled or stored in such a form that it has the potential to cause a major incident.

“major incident” means an occurrence of catastrophic proportions resulting from the use of plant or machinery or from activities at a workplace;

“medical surveillance” means a planned programme of periodic examination, which may include clinical examinations, biological monitoring or medical tests of persons employed by a designated health practitioner or by an occupational medical practitioner;

“Minister” means the minister for the time being responsible for labour matters;

“noise” means all sound energy, which can result in hearing impairment or be harmful to health or otherwise dangerous;

“occupational hygiene” means the anticipation, recognition, evaluation, monitoring and control of conditions arising in or from the workplace, which may cause illness or adverse health effects to persons;

“occupational safety and health officer” means any officer appointed under section 26 and includes the Director appointed under section 23;

“occupier” means the person or persons in actual occupation of a workplace, whether as the owner or not and includes an employer;

“owner” means the person for the time being receiving the rents or profits of premises whether on his own account or as agent or trustee of another person, or who would receive the rents and profits if the premises were leased;

“plant” includes any equipment, gear, machinery, apparatus or appliance or any part thereof;

“premises” includes any place and, in particular includes—

(a) any vehicle, vessel aircraft or hovercraft;

(b) any installation on land including the foreshore and land intermittently covered by water, any offshore installation or any other installation whether floating, or resting on seabed or the subsoil thereof, or resting on other land covered with water or the subsoil thereof;

(c) any tent or movable structure.

“prime mover” means every engine, motor or other appliance which provides mechanical energy derived from steam, water, wind, electricity, the combustion of fuel or other source;

“process” includes the use of any locomotive;

“prohibition notice” means a notice issued under section 37;

“risk” means the probability of occurrence of an adverse effect from a substance on people or the environment combined with the magnitude of the consequence of that adverse effect;

“safety and health advisor” means any person who holds a minimum qualification of a certificate in occupational safety and health from a recognised institution and has at least five years proven practical experience in that field;

“sanitary conveniences” includes urinals, water-closets, earth-closets, privies, ash pits and any similar convenience;

“self-employed person” means an individual who works for gain or reward otherwise than under a contract of employment, whether or not he employs others;

“steam boiler” means any closed vessel in which for any purpose, steam is generated under pressure greater than atmospheric pressure, and includes any economizer used to heat water being fed to any such vessel, and any superheated used for heating steam;

“substance” means any natural or artificial matter or material whether in solid or liquid form or in the form of a gas or vapour;

“supplier” means a person who provides articles or substances by way of sale, lease, hire or hire-purchase, whether as principal or agent;

“transmission machinery” means every shaft, wheel, drum, pulley, system of fast and loose pulleys, coupling, clutch, driving-belt or other devices by which the motion of a prime mover is transmitted to or received by any machine or appliance;

“user” in relation to plant or machinery, means the person who uses plant or machinery for his own benefit or who has the right of control over the use of plant or machinery, but does not include a leaser of, or any person employed in connection with, that plant or machinery;

“vibration” means mechanical energy transmitted to a person’s body from a source of oscillations and is harmful to health or otherwise dangerous;

“workplace” includes, any land, premises, location, vessel or thing, at, in, upon, or near which, a worker is, in the course of employment;

“workroom” means any room or cubicle in which work is done by persons employed;

Application of Act.

**3.** (1) This Act shall apply to all workplaces where any person is at work, whether temporarily or permanently.

(2) The purpose of this Act is to—

- (a) secure the safety, health and welfare of persons at work; and
- (b) protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work.

Approval of codes of practice by Director.

**4.** (1) For the purpose of providing practical guidance with respect to any provision of this Act and of safety and health regulations, the Director shall, in consultation with the council, approve and issue codes of practice which are in his opinion suitable for that purpose.

(2) The Director shall, in consultation with the Council, from time to time, revise the whole or any part of any code of practice prepared by him in pursuance of this section.

(3) The Director may, in consultation with the Council, withdraw a code of practice approved or issued under subsection (1).

(4) Where the Director has approved, issued or withdrawn a code of practice under this section, the Director shall publish a notice in the Gazette.

Use of approved codes of practice in criminal proceedings.

**5.** (1) Failure on the part of any person to observe any provision of an approved code of practice shall not render that person liable to any civil or criminal proceedings; but where in any criminal proceedings a party is alleged to have committed an offence by reason of a contravention of any requirement or prohibition imposed by an approved code of practice, the provisions of subsection (2) shall have effect with respect to that code in relation to those proceedings.

(2) Any provision of the code of practice which appears to the

court to be relevant to the requirement or prohibition alleged to have been contravened shall be admissible in evidence in the proceedings; and if it is proved that there was at any material time a failure to observe any provision of the code which appears to the court to be relevant to any matter which it is necessary for the prosecution to prove in order to establish a contravention of that requirement or prohibition, that matter shall be taken as proved unless the court is satisfied that the requirement or prohibition was in respect of that matter complied with otherwise than by way of observance of that provision of the code.

(3) In any criminal proceedings—

- (a) a document purporting to be a notice issued by the Director under section 4 shall be taken to be such a notice unless the contrary is proved; and
- (b) a code of practice, which appears to the court to be the subject of such a notice, shall be taken to be the subject of that notice unless the contrary is proved.

#### PART II—GENERAL DUTIES

6. (1) Every occupier shall ensure the safety, health and welfare at work of all persons working in his workplace. Duties of occupiers.

(2) Without prejudice to the generality of an occupier's duty under subsection (1), the duty of the occupier includes—

- (a) the provision and maintenance of plant and systems and procedures of work that are safe and without risks to health;
- (b) arrangements for ensuring safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances;
- (c) the provision of such information, instruction, training and supervision as is necessary to ensure the safety and health at work of every person employed;
- (d) the maintenance of any workplace under the occupier's control, in a condition that is safe and without risks to health and the provision and maintenance of means of access to and egress from it that are safe and without such risks to health;
- (e) the provision and maintenance of a working environment for every person employed that is, safe, without risks to health, and adequate as regards facilities and arrangements for the

employees welfare at work;

(f) informing all persons employed of—

(i) any risks from new technologies; and

(ii) imminent danger; and

(g) ensuring that every person employed participates in the application and review of safety and health measures.

(3) Every occupier shall carry out appropriate risk assessments in relation to the safety and health of persons employed and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all chemicals, machinery, equipment, tools and process under the control of the occupier are safe and without risk to health and comply with the requirements of safety and health provisions in this Act.

(4) Every occupier shall send a copy of a report of risk assessment carried out under this section to the area occupational safety and health officer;

(5) Every occupier shall take immediate steps to stop any operation or activity where there is an imminent and serious danger to safety and health and to evacuate all persons employed as appropriate.

(6) It is the duty of every occupier to register his workplace unless such workplace is excepted from registration under this Act.

(7) An occupier who fails to comply with a duty imposed on him under this section commits an offence and shall on conviction be liable to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

7. (1) Except in such cases as may be prescribed, it is the duty of every occupier to—

(a) prepare and, as often as may be appropriate, revise a written statement of his general policy with respect to the safety and health at work of his employees and the organisation and arrangements for the time being in force for carrying out that policy; and

(b) to bring the statement and any revision of it to the notice of all of his employees.

Duty to prepare a safety and health policy statement.

(2) The Minister may make regulations to provide for the contents of a general statement of safety and health and obligations to a person implementing the policy.

(3) It shall be an offence for a person on whom a duty is imposed under this section to fail to carry out such a duty.

**8.** (1) An occupier shall not dismiss a employee, injure the employee or discriminate against or disadvantage a employee in respect of the employee's employment, or alter the employee's position to the detriment of the employee by reason only that the employee—

Discrimination  
against employee etc.

- (a) makes a complaint about a matter which the employee considers is not safe or is a risk to his health;
- (b) is a member of a safety and health committee established pursuant to this Act; or
- (c) exercises any of his functions as a member of the safety and health committee.

(2) An occupier who contravenes the provisions of this section commits an offence and shall, on conviction, be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding three months or to both.

(3) Notwithstanding any written law to the contrary, where a person is convicted of an offence under this section the court may, in addition to imposing a penalty on the offender make one or both of the following orders—

- (a) an order that the offender pays within a specific period to the person against whom the offender has discriminated such damages as the court deems fit to compensate that person; or
- (b) an order that the employee be reinstated or reemployed in his former position or, where that position is not available, in a similar position.

**9.** (1) Every occupier shall establish a safety and health committee at the workplace in accordance with regulations prescribed by the Minister if—

Safety and health  
committees.

- (a) there are twenty or more persons employed at the workplace;  
or
- (b) the Director directs the establishment of such a committee

at any other workplace.

(2) The Minister may make regulations to provide for the organisation, functions and activities of the safety and health committees, including the election of safety representatives, their rights and duties, and for the training of the members of the safety and health committees and the safety and health representatives.

(3) An occupier shall not penalise an employee who is a member of a work place safety and health committee for doing anything in furtherance of the object of this section.

(4) An occupier who contravenes the provisions of subsection (1) commits an offence.

Duty not to charge employees for things done or provided.

**10.** (1) An employer shall not make any deduction from an employee's remuneration or levy, or permit to be levied on any of his employees any charge in respect of anything done or provided in pursuance of this Act or any regulation made there under.

(2) An employer who contravenes the provisions of subsection (1) commits an offence.

Safety and health audits.

**11.** (1) The occupier of a workplace shall cause a thorough safety and health audit of his workplace to be carried out at least once in every period of twelve months by a safety and health advisor, who shall issue a report of such an audit containing the prescribed particulars to the occupier on payment of a prescribed fee and shall send a copy of the report to the Director.

(2) The audit report referred to in subsection (1) shall be preserved and be kept available for inspection by the occupational safety and health officer.

(3) An occupier who fails to comply with a duty imposed on him under this section commits an offence and shall on conviction be liable to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

Duties of self employed persons.

**12.** (1) Every self employed person shall—

- (a) take all necessary precautions to ensure his own safety and health and that of any other person in his workplace or within the environs of his workplace;
- (b) at all times use appropriate safe systems of work, preventive and control measures and where not feasible, use suitable

personal protective appliances and clothing required under this Act;

(c) comply with any safety and health rules, regulations instructions and procedures issued under this Act;

(d) report to the Director—

(i) any situation which he has reason to believe would present imminent danger or hazard and which he cannot correct, and

(ii) any incident or injury that arises in the course of or in connection with his work, as required under this Act.

(2) A self employed person who contravenes the provisions of this section commits an offence.

**13.** (1) Every employee shall, while at the workplace—

Duties of employee.

(a) ensure his own safety and health and that of other persons who may be affected by his acts or omissions at the workplace;

(b) co-operate with his employer or any other person in the discharge of any duty or requirement imposed on the employer or that other person by this Act or any regulation made hereunder;

(c) at all times wear or use any protective equipment or clothing provided by the employer for the purpose of preventing risks to his safety and health;

(d) comply with the safety and health procedures, requirements and instructions given by a person having authority over him for his own or any other person's safety;

(e) report to the supervisor, any situation which he has reason to believe would present a hazard and which he cannot correct;

(f) report to his supervisor any accident or injury that arises in the course of or in connection with his work; and

(g) with regard to any duty or requirement imposed on his employer or any other person by or under any other relevant statutory provision, co-operate with the employer or other person to enable that duty or requirement to be performed

or complied with.

(2) A employee who contravenes the provisions of this section commits an offence and shall, on conviction, be liable to a fine not exceeding fifty thousand shillings or to imprisonment for a term not exceeding three months or to both.

Duty to report any dangerous situation.

**14.** (1) Every employee shall report to the immediate supervisor any situation which the employee has reasonable grounds to believe presents an imminent or serious danger to the safety or health of that employee or of other employee in the same premises, and until the occupier has taken remedial action, if necessary, the occupier shall not require the employee to return to a work place where there is continuing imminent or serious danger to safety or health.

(2) An employee who has left a work place, which the employee has reasonable justification to believe presents imminent and serious danger to life and health shall not be dismissed, discriminated against or disadvantaged for such action by the employer.

(3) It shall be an offence for a person on whom a duty is imposed under this section to fail to carry out that duty.

Duty not to interfere with or misuse things provided pursuant to certain provisions.

**15.** A person who wilfully interferes with or misuses any means, appliance, convenience or other thing provided or done in the interests of safety, health and welfare in pursuance of this Act commits an offence and shall, on conviction, be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding three months or to both.

Prohibition against creation of hazards.

**16.** (1) No person shall engage in any improper activity or behaviour at the workplace, which might create or constitute a hazard to that person or any other person.

(2) For purposes of this section, improper activity or behaviour includes boisterous play, scuffling, fighting, practical jokes, unnecessary running or jumping or similar conduct.

General duties of occupier and self-employed to persons other than their employees.

**17.** (1) Every occupier shall conduct his undertaking in such a manner as to ensure, that a person who is not his employee who may be affected thereby is not exposed to risks to safety or health.

(2) Every self-employed person shall conduct his undertaking in such a way as to ensure that he and any other person who is not his employee who may be affected thereby is not exposed to risks to safety or health.

(3) It shall be the duty of every employer and every self employed person to give relevant safety and health information to every person, not being his employee who may be affected by the manner in which the employer or the self employed person conducts his undertaking, on such aspects of the way he conducts his business as may affect safety or health.

(4) It shall be an offence for a person on whom a duty is imposed under this section to fail to carry out such a duty.

**18.** (1) An occupier of non-domestic premises which have been made available to persons, not being his employees, as a place of work, or as a place where the employees may use a plant or substance provided for their use there, shall take such measures as are practicable to ensure that the premises, all means of access thereto and egress therefrom available for use by persons using the premises, and any plant or substance in the premises provided for use there, are safe and without risks to health.

Duties of an occupier of a place of work to persons other than his employees.

(2) A person who has, by virtue of a contract, lease or otherwise, an obligation of any extent in relation to the—

- (a) maintenance or repair of a place of work or any means of access thereto or egress there from; or
- (b) prevention of risks to safety and health that may arise from the use of any plant or substance in the place of work, shall for the purpose of subsection (1), be deemed to have control of the matters to which his obligation extends.

(3) It shall be an offence for a person on whom a duty is imposed under this section to fail to carry out such a duty.

**19.** (1) An occupier of any premises likely to emit, poisonous, harmful, injurious or offensive substances, into the atmosphere shall use the best practicable means to—

General duty of persons in control of certain premises in relation to harmful emissions into atmosphere.

- (a) prevent such emissions into the atmosphere; and
- (b) render harmless and inoffensive the substances which may be emitted.

(2) The reference in subsection (1) to the means to be used for the purpose of that section includes a reference to the—

- (a) manner in which the plant provided for those purposes is used; and

(b) supervision of any operation involving the emission of substances to which that subsection applies.

(3) An occupier who contravenes the provisions of this section commits an offence.

Duties of designers, manufacturers importers etc with regard to articles and substances for use at work.

**20.** (1) A person who designs, manufactures, imports or supplies any article for use at work shall—

- (a) ensure, that the article is so designed and constructed as to be safe and without risks to health when properly used;
- (b) carry out, or arrange for the carrying out of such testing and examination as may be necessary to ensure that the article is safe and without risk to health when properly used;
- (c) take such steps as are necessary to ensure that there is available, in connection with the use of the article at work, adequate information about the use for which it is designed and has been tested, and about any conditions necessary to ensure that, when put to that use, it will be safe and without risks to health.

(2) A person who designs or manufactures any article for use at work shall carry out or arrange for the carrying out of any necessary research to identify, eliminate or minimise any risks to safety or health to which the design or article may give rise.

(3) A person who erects or installs any article for use at work in any premises where that article is to be used by a worker shall ensure, that the way in which the article is erected or installed makes it safe and it not a risk to the safety and health of the worker when properly used.

(4) A person who manufactures, imports or supplies any substance for use at work shall—

- (a) ensure, that the substance is safe and without risks to health when properly used;
- (b) carry out or arrange for the carrying out of such testing and examination as may be necessary to ensure that the substance is safe and without risk to health when properly used;
- (c) take such steps as are necessary to ensure that there is available, in connection with the use of the substance at work adequate information about the results of any relevant tests

which have been carried out on or in connection with the substance and about any conditions necessary to ensure that it will be safe and without risks to health when properly used.

(5) A person who manufactures any substance for use at work shall carry out or arrange for the carrying out of any necessary research to discover and, so far as is reasonably practicable, to identify, eliminate or minimise any risks to safety or health to which the substance may give rise.

(6) Nothing in this section shall be taken to require a person to repeat any test, examination or research which has been carried out otherwise than by him or at his instance, in so far as it is reasonable for him to rely on the results thereof for the purposes of this section.

(7) A duty imposed on any person by this section shall extend only to things done in the course of a trade, business or other undertaking carried on by him whether for profit or not, and to matters within his control.

(8) Where a person designs, manufactures, imports an article for, or supplies an article to another person on the basis of a written undertaking by that other person to take specified steps sufficient to ensure, so far as is reasonably practicable, that the article will be safe and without risks to health when properly used, the undertaking shall have the effect of relieving the first-mentioned person from the duty imposed by subsection (1) (a) to such extent as is reasonable having regard to the terms of the undertaking.

(9) Where a person (“the ostensible supplier”) supplies any article for use at work or substance for use at work to another person (“the customer”) under a hire-purchase agreement, conditional, sale agreement or credit-sale agreement, and the ostensible supplier—

- (a) carries on the business of financing the acquisition of goods by others by means of such agreements; and
- (b) in the course of that business, acquired his interest in the article or substance supplied to the customer as a means of financing its acquisition by the customer from a third person (“the effective supplier”),

the effective supplier and not the ostensible supplier shall be treated for the purposes of this section as supplying the article or substance to the customer, and any duty imposed by this section on a supplier shall be imposed on the effective supplier and not on the ostensible supplier.

(10) For purposes of this section, an article or substance is not

to be regarded as properly used where it is used without regard to any relevant information or advice relating to its use which has been made available by a person by whom it was designed, manufactured, imported or supplied.

(11) A person who fails to carry out a duty imposed by this section commits an offence and shall on conviction be liable to a fine not exceeding two hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

Notice of accidents  
and dangerous  
occurrences.

**21.** (1) An employer or self-employed person shall notify the area occupational safety and health officer of any accident, dangerous occurrence, or occupational poisoning which has occurred at the workplace.

(2) Where an accident in a workplace, causes the death of a person therein, the employer or self employed person shall—

- (a) inform the area occupational safety and health officer within twenty-four hours of the occurrence of the accident; and
- (b) send a written notice of the accident in the prescribed form to the area occupational safety and health officer within seven days of the occurrence of the accident.

(3) Where an accident in a workplace causes non-fatal injuries to a person therein, the employer shall send to the area occupational safety and health officer, a written notice of the accident in the prescribed form within seven days of the occurrence of the accident.

(4) In the case of death due to a workplace accident, non-fatal injuries arising from a workplace accident, an occupational disease or a dangerous occurrence at the workplace, involving a self-employed person incapable of submitting notification, such notification shall be submitted to the area occupational safety and health officer by the occupier.

(5) An employer shall cause all workplace injuries to be entered in the general register specified in section 122.

(6) Where a person injured in an accident dies after the accident is notified under this section, the employer shall send a notice of the death in writing, to the area occupational safety and health officer as soon as he is informed of the death.

(7) Where an accident to which this section applies occurs to an employee and the occupier of the workplace is not the employer

of the person injured or killed, the employer of that employee, shall, immediately report the accident to the occupier or, the Director and the area occupational safety and health officer.

(8) The provisions of this section shall extend and apply to the dangerous occurrences specified in the First Schedule.

(9) The Minister may, on the advice of the Council, by notice in the Gazette amend the First Schedule.

(10) A person who fails to notify an accident or a dangerous occurrence as required under this section commits an offence and shall on conviction be liable to a fine not exceeding two hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

**22.** (1) A medical practitioner attending a patient who he believes to be suffering from any disease specified in the Second Schedule, contracted in any workplace, shall within seven days of attending the patient unless such a notice has been previously sent, send to the Director, a notice stating the name and full postal address of the patient, the disease from which, in the opinion of the medical practitioner, the patient is suffering, and the name and address of the workplace in which the patient was last employed.

Notification of occupational diseases.

(2) A medical practitioner who fails to send a notice in as required by subsection (1), commits an offence and shall on conviction be liable to a fine not exceeding fifty thousand shillings.

(3) An occupier shall send a written notice of any disease, specified in the Second Schedule, occurring in a workplace to the Director and the provisions of section 21 with respect to the notification of accidents shall *mutatis mutandis* apply to any notification of diseases.

(4) The Minister may, by rules apply the provisions of this section to all workplaces or any class or description of workplace to any disease other not specified in the Second Schedule.

#### PART III—ADMINISTRATION

**23.** (1) There shall be a Director of Occupational Safety and Health Services who shall be responsible for the administration of this Act.

The Director.

(2) The Director shall be—

(a) an ex officio member of the Council but shall have no right to vote; and

(b) the secretary of the Council.

(3) The Director shall ensure adequate consultations on proposed occupational safety and health standards regulations, and codes of practice.

(4) The Director shall—

- (a) develop a five year strategic plan for improving occupational safety and health; and
- (b) ensure that the plan specified in paragraph(a) meets the existing and future needs of industry and the community.

(5) The Director may, after consultation with the technical advisory committee established under section 30, issue a certificate of approval to a competent person to carry out—

- (a) examination and testing of plants and equipments;
- (b) medical examination of employees;
- (c) medical surveillance on the health of persons employed;
- (d) safety and health audits of workplaces; or
- (e) any other function necessary under Act.

(6) A certificate of approval issued under this section shall be renewed annually.

(7) The Director may at any time revoke a certificate of approval issued under subsection (5).

(8) The Director—

- (a) shall promote education and training in occupational safety and health;
- (b) shall collect and disseminate information on occupational safety and health;
- (c) shall promote occupational safety and health in all workplaces and in the community to encourage a safety and health culture in workplaces;

(d) may conduct training for enterprises, self employed persons, individuals and occupational safety and health officers;

(e) may after consultation with the technical advisory committee, approve in writing training institutions providing occupational safety and health training.

(9) A notice or certificate issued by the Director under this section may be issued for a limited period and may be varied or revoked by the Director.

**24.** (1) The Director shall conduct directly or in collaboration with other persons or bodies, research, experiments and demonstrations relating to occupational safety and health, including studies of psychological factors involved, and relating to innovative methods, techniques and approaches of dealing with occupational safety and health problems.

Research and related activities.

(2) The Director shall develop specific plans for such research, demonstration, and experiments as are necessary to produce criteria, including criteria for identifying toxic substances, for the formulation of safety and health standards under this act; and the Director on the basis of such research, demonstration, and experiments, or any other information available to him, shall develop and publish the criteria necessary for the purposes of this Act.

(3) The Director shall develop criteria to deal with toxic material and harmful physical substances and agents which shall describe exposure levels that are safe for various periods of employment, including, but not limited to the exposure level, at which no employee will suffer impaired health, functional capacities or diminished life expectancy as a result of his work experience.

(4) The Director shall conduct special research, experiments, and demonstrations relating to occupational safety and health as are necessary to explore new problems including those created by new technology in occupational safety and health, which may require ameliorative action beyond that which is otherwise provided for in this Act and shall also conduct research into the motivational and behavioural factors relating to the field of occupational safety and health.

(5) In order to develop needed information regarding potentially toxic substances or harmful physical agents, the Director, may with the approval of the Minister, prescribe regulations requiring employers to measure, record, and make reports on the exposure of employees to substances or physical agents which may endanger the health or safety of employees and may by such regulations, establish such programmes of medical examinations and tests as may be necessary for determining the

incidence of occupational illnesses and the susceptibility of employees to such illness.

(6) The Director shall establish a safety and health institute to be known as the Occupational Safety and Health Institute to undertake research into all aspects of safety and health and to conduct safety and health skills training for occupational safety and health officers and other persons.

Collection, of  
occupation safety and  
health statistics.

**25.** In order to further the purposes of this Act, the Director shall develop and maintain an effective programme of collection, compilation and analysis of occupational safety and health statistics which shall cover work injuries and illnesses including all disabling, serious, or significant injuries and illnesses, whether or not involving loss of time from work, other than minor injuries requiring only first aid treatment and which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job.

Appointment of  
occupational safety  
and health officers.

**26.** (1) There shall be such senior deputy directors, deputy directors, assistant directors and occupational safety and health officers and such other officers as may be necessary, for the purposes of this Act.

(2) No person shall be appointed under subsection (1) unless that person is the holder of a degree in science, medicine, engineering, chemistry, physics, biochemistry, nursing, zoology, computer science, occupational safety and health or industrial hygiene;

(3) Notice of the appointment of an occupational safety and health officer shall be published in the Gazette.

(4) The Director shall issue to every officer appointed under this section a certificate of authorization, which shall be produced on demand to the occupier or any person in charge of a workplace, which the officer intends to enter pursuant to this Act.

Establishment of the  
National Council for  
Occupational Safety  
and Health.

**27.** (1) There shall be a National Council for Occupational Safety and Health which shall advise the Minister on—

- (a) the formulation and development of national occupational safety and health, policy framework;
- (b) legislative proposals on occupational safety and health, including ways and means to give effect to International Labour Organization Conventions, and other international conventions and instruments relating to occupational safety, health, compensation and rehabilitation services;

- (c) strategic means of promoting the best practices in occupational safety and health.
- (d) the establishment, maintenance and development of a safety and health preventative culture;
- (e) reviewing the provisions of this Act, rules and regulations, standards, industry codes of practice;
- (f) the statistical analysis of work related deaths and injuries; and
- (g) such other matters affecting occupational safety, health, as it considers desirable in the interest of improving the quality of working life in Kenya.

(2) Without limiting subsection (1), the Director may advise the Council on the formulation and publication of standards, specifications or other forms of guidance for the purpose of assisting employers, employees and other users to maintain appropriate standards of occupational health and safety.

(3) The Council shall, at the request of the Minister and may of its own motion, investigate and make recommendations to the Minister on any matter connected with the safety and health of persons at work.

(4) The Council may—

- (a) establish committees in respect of different industries for the purpose of assisting the Council to perform its functions in relation to industry codes of practice; and
- (b) establish such other committees as it deems necessary for the purpose of assisting the Council to perform its functions.

(5) A committee shall consist of such number of persons as may be appointed by the Council from among its members.

(6) The Council shall consider recommendations made to it by any one of its committees or any other person.

(7) The Council shall perform such other functions as the Minister may, from time to time assign to it.

**28.** (1) The Council shall consist of a chairman and the members specified in subsection (2) who shall be appointed by the Minister by notice in the Gazette.

Membership of the Council.

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- (2) The members of the Council shall be—
- (a) one representative from each of the following ministries—
- (i) health;
  - (ii) agriculture;
  - (iii) livestock development;
  - (iv) industry;
  - (v) water development;
  - (vi) local authorities; and
  - (vii) education;
- (b) one representative from each of the following organisations and Government departments—
- (i) the Government Chemist;
  - (ii) the Kenya Bureau of Standards;
  - (iii) the Central Bureau of Statistics;
  - (iv) the Commissioner of Insurance;
  - (v) the Association of Kenya Insurers;
  - (vi) the public universities;
  - (vii) the National Environmental Management Authority;
  - (viii) the National Council for Science and Technology;
  - (ix) the most representative employers organisation;
  - (x) the most representative workers' organisation;
  - (xi) the Kenya Occupational Safety and Health Association, and
- (c) three persons with relevant qualifications and experience in occupational safety and health who shall not be public officers.

(3) The chairman of the Council shall be a person who has demonstrated ability to manage occupational safety and health at the policy level or enterprise level.

(4) In appointing a person as a member the Minister may consider the person's practical experience, and competence, in the management of occupational safety and health or related field.

(5) The Council may co-opt any number of persons with expert knowledge and experience whose assistance or advice it may require, but a person so co-opted shall not vote in a meeting of the Council or be counted as a member thereof for purposes of forming a quorum.

(6) The provisions of the Third Schedule shall apply to the members of the Council.

(7) The Minister shall with the approval of Treasury determine the allowances of the members of the Council.

**29.** As soon as practical, but within three months after the end of each financial year, the Council shall prepare and give to the Minister a report on the Council's operations for the year. Annual Report.

**30.** (1) The Director may from time to time constitute a technical advisory committee. Technical advisory committee.

(2) A technical advisory committee shall consist of the Director as chairman and not less than five other members from relevant occupational safety and health disciplines.

**31.** (1) A technical advisory committee shall—

- (a) approve persons for purposes of this Act;
- (b) approve institutions or firms to carry out laboratory tests and analysis of substances and articles for use at workplaces;
- (c) approve training syllabi to be used by organizations, institutions, firms or consultants offering occupational safety and health courses;
- (d) ensure professional ethics of all approved persons and institutions;
- (e) formulate and publish standards and specifications or other forms of guidance for the purpose of assisting employers,

Functions of the technical advisory committee.

employees and other users to maintain adequate standards of occupational safety and health at the workplace;

- (f) promote education and training in occupational safety and health;
- (g) collect and disseminate information on occupational safety and health; and
- (h) carryout any other activity relating to occupational safety and health;

(2) The Minister shall, with approval of the Treasury determine the allowances for the members of the committee.

#### PART IV—ENFORCEMENT

Powers of an occupational safety and health officer.

**32.** (1) An occupational safety and health officer shall, for the purpose of the execution of this Act, have power to do all or any of the following things—

- (a) to enter, inspect and examine, by day or by night, a workplace, and every part thereof, when he has reasonable cause to believe that any person is employed therein, and to enter, inspect and examine, by day, any place which he has reasonable cause to believe to be a workplace and any part of any building of which a workplace forms part and in which he has reasonable cause to believe that explosive, highly inflammable or any other hazardous materials are stored or used:

Provided that—

- (i) an occupational safety and health officer shall, whenever it is practicable so to do and will not in his opinion defeat the object of his inspection, notify the occupier or some other person in authority at a workplace of his arrival at the workplace for the purpose of inspecting it;
  - (ii) when an occupational safety and health officer has inspected a workplace without having first given the notification referred to in paragraph (i) of this proviso, he shall, within a reasonable time after such inspection, inform the occupier and the Director in writing of the reason why no notification was given;
- (b) with regard to any place of work which he has power to enter,

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- to direct that those premises or any part of them or anything therein, shall be left undisturbed (whether generally or in particular respects) for so long as is reasonably necessary for the purposes of any examination or investigation;
- (c) to take such measurements and photographs and making such recordings as he may consider necessary for the purposes of any examinations or investigation under this Act;
  - (d) to develop and print photographs of scenes of occupational accidents;
  - (e) take and remove samples of any articles or substances found at any place of work which he has power to enter and of the atmosphere in or in the vicinity of such a place of work subject to the employer being notified of any sample so taken;
  - (f) to take with him a police officer if he has reasonable cause to apprehend any serious obstruction in the execution of his duty;
  - (g) to require the production of the registers, certificates, notices and documents kept in pursuance of this Act and to inspect, examine and copy any of them;
  - (h) to make such examination and inquiry as may be necessary to ascertain whether the provisions of this Act, and of the enactments for the time being in force relating to public health, are complied with, so far as respects a workplace and any persons employed in a workplace;
  - (i) to require any person whom he finds in a workplace to give such information as it is in his power to give as to who is the occupier of the workplace;
  - (j) to examine, either alone or in the presence of any other person, as he thinks fit, with respect to matters under this Act, every person whom he finds in a workplace, or whom he has reasonable cause to believe to be or to have been within the preceding six months employed in a workplace, and to require every such person to be so examined and to sign a declaration of the truth of the matters respecting which he is so examined; so, however, that no one shall be required under this provision to answer any question or to give any evidence tending to incriminate himself;
  - (k) in the case of an occupational safety and health officer

who is a medical practitioner, to carry out such medical examinations as may be necessary for the purposes of his duties under this Act; and

(l) to exercise such other powers as may be necessary for the purposes of this Act.

(2) The occupier of every workplace, and his agents and servants, shall furnish the means required by an occupational safety and health officer as necessary for an entry, inspection, examination or inquiry, or the taking of samples, or otherwise for the exercise of his powers, under this Act in relation to that workplace.

(3) An occupational safety and health officer shall in the case of any article found in any premises which he has power to enter, being an article or substance which appears to him to have caused or is likely to cause danger to safety or health, cause it to be dismantled or subjected to any process or test but not to damage or destroy it unless this is in the circumstances necessary.

(4) In the case of any article or substance specified in subsection (3) an occupational safety and health officer may take possession of it and detain it for so long as is necessary for any of the following purposes—

(a) to examine it and do to it any thing which he has power to do under this Act;

(b) to ensure that it is not tampered with before his examination of it is completed; and

(c) to ensure that it is available for evidence in any proceedings for an offence under this Act; and

(d) to summon in writing any person whom he has reasonable cause to believe to be able to give any information relevant to any inspection, examination or investigation, to attend at a time and place specified and to give such information or to produce any relevant document.

(5) No person shall, in relation to any investigation or inquiry under this Act—

(a) without reasonable justification fail to comply with a lawful summon, request or order issued or given by an occupational safety and health officer.

- (b) refuse or fail to answer to the best of his knowledge any question lawfully put to him by or with the concurrence of an occupational safety and health officer.

Provided that no person shall be obliged to answer any question whereby he may incriminate himself;

- (c) in any manner whatsoever advise, encourage incite order or persuade any person who has been directed summoned, requested or ordered to do something by an occupational safety and health officer not to comply with such direction, summons, request order or in any manner prevent him from doing so;
- (d) refuse or fail when required thereto by an occupational safety and health officer to furnish him with the means or to render him the necessary assistance for holding such inquiry;
- (e) refuse or fail, when required thereto by an occupational safety and health officer to attend an inquiry; or
- (f) intentionally insult the occupational safety and health officer or intentionally interrupt the proceedings thereof with a view to defeat the purpose of investigation, inspection or inquiries.

(6) If any person willfully delays an occupational safety and health officer in the exercise of any power under this section, or fails to comply with the requisition of an occupational safety and health officer in pursuance of this section or to produce any register, certificate, notice or document which he is required by or in pursuance of this Act to produce, or willfully withholds any information as to who is the occupier of any workplace, or conceals or prevents, or attempts to conceal or prevent, or attempts to conceal or prevent, a person from appearing before or being examined by an occupational safety and health officer, that person shall be deemed to obstruct an occupational safety and health officer in execution of his duties under this Act.

(7) Where an occupational safety and health officer is obstructed in the execution of his powers or duties under this Act, the person obstructing him commits an offence and shall on conviction be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding six months; or to both

(8) An occupier of a workplace where an occupational safety and health officer is so obstructed shall be deemed to have committed the offence specified in subsection (7).

Power of occupational safety and health officer to conduct proceedings.

**33.** (1) An occupational safety and health officer may, although he is not an advocate, prosecute, conduct or defend before a magistrate's court any charge, information, complaint or other proceeding arising under this Act, or in the discharge of his duty as occupational safety and health officer.

(2) It shall not be an objection to the competency of an occupational safety and health officer to give evidence as a witness in any prosecution for an offence under this Act that the prosecution is brought at his instances or conducted by him.

Power to take samples.

**34.** (1) An occupational safety and health officer may at any time, after informing the occupier or, if the occupier is not readily available, a foreman or other responsible person in the workplace, take for analysis sufficient samples of any substance used or intended to be used in a workplace, being a substance in respect of which he suspects a contravention of any rule made under this Part, or which he thinks may prove on analysis to be likely to cause bodily injury to the persons employed.

(2) The occupier, the manager or other responsible person may, at the time when a sample is taken under this section, and on providing the necessary appliances, require the occupational safety and health officer to divide the same into three parts, and to mark and seal or fasten up each part in such manner as its nature permits, and—

- (a) to deliver one part to the occupier, or the manager or other responsible person aforesaid;
- (b) to retain one part for future comparison;
- (c) to submit one part to the analyst, and

any analysis under this section shall, if so required, be carried out by the Government Chemist or a laboratory approved by the director.

(3) A certificate purporting to be a certificate by the Government Chemist or a laboratory approved by the Director as to the result of an analysis of a sample under this section shall in any proceedings under this Act, be admissible as evidence of the matters stated therein, but either party may require the person by whom the analysis was made to be called as a witness.

(4) It shall not be lawful for any person, except in so far as is necessary for the purposes of a prosecution for an offence under this Act, to publish or disclose to any person the results of an analysis

made under this section, and if any person acts in contravention of this subsection that commits an offence and shall on conviction be liable to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding twelve months, or to both.

**35.** (1) Where, in the case of any article or substance found by him in any premises which he has power to enter, an occupational safety and health officer has reasonable cause to believe that, in the circumstances in which he finds it, the article or substance is a cause of imminent danger or serious personal injury, he may seize it and cause it to be rendered harmless (whether by destruction or otherwise).

Power to deal with cause of imminent danger.

(2) Before any article or substance that forms part of a batch of similar articles or any substance is rendered harmless under this section the occupational safety and health officer shall, if it is practicable for him to do so, take a sample of the article or substance and give to a responsible person at the premises where he found it a portion of the sample marked in a manner sufficient to identify it.

(3) As soon as an article or substance has been seized and rendered harmless under this section, the occupational safety and health officer shall prepare and sign a written report giving particulars of the circumstances in which the article or substance was seized and dealt with by him, and shall—

(a) give a signed copy of the report to a responsible person at the premises where the article or substance was found by him; and

(b) unless the person is the owner of the article or substance, also serve a signed copy of the report to the owner.

**36.** If an occupational safety and health officer is of the opinion that a person—

Improvement notices.

(a) is contravening any of the provisions of this Act or rules made there under; or

(b) has contravened one or more of those provisions in circumstances that make it likely that the contravention will continue or be repeated,

he may serve on that person a notice (in this Part referred to as “an improvement notice”) stating that he is of that opinion, specifying the provision or provisions in respect of which he is of that opinion, giving particulars of the reasons why he is of that opinion and requiring that person to remedy the contravention or, as the case may be, the matters

occasioning it within such period ending not earlier than the period within which an appeal against the notice can be brought under section 38 as may be specified in the notice.

Prohibition notices.

**37.** (1) This section applies to any activities which are being or are about to be carried on by or under the control of any person, being activities to or in relation to which this Act or the rules made there under apply or will, if the activities are so carried on, apply.

(2) If as regards any activities to which this section applies an occupational safety and health officer is of the opinion that, as carried on or about to be carried on by or under the control of the person in question the activities involve or, as the case may be, will involve a risk of serious personal injury, the occupational safety and health officer may serve on that person a notice (in this Part referred to as “prohibition notice”).

(3) A prohibition notice shall—

- (a) state that the occupational safety and health officer is of the said opinion;
- (b) specify the matters which in his opinion give or as the case may be, will give rise to the said risk;
- (c) where in his opinion any of those matters involve or, as the case may be, will involve a contravention of any provision of this Act or the rules made there under, state that he is of that opinion, specify the provision or provisions in respect of which he is of that opinion, and the particulars of the reasons why he is of that opinion; and
- (d) direct that the activities to which the notice relates shall not be carried on by or under the control of the person on whom the notice is served unless the matters specified in the notice in pursuance of paragraph (b) and any associated contraventions of provisions so specified in pursuance of paragraph (c) have been remedied.

(4) A direction given under subsection (3) (d) shall take immediate effect if the occupational safety and health officer is of the opinion, and states it, that the risk of serious personal injury is or, as the case may be, will be imminent, and shall have effect to the end of a period specified in the notice in any other case.

(5) In order to enforce a prohibition imposed under this section an occupational safety and health officer may block, seal, bar, barricade, immobilise or fence off that part of the workplace, plant or machinery

to which the prohibition applies, and no person shall interfere with or remove such blocking sealing, bar, barricade, immobiliser or fence.

(6) An employer shall forthwith bring the contents of a prohibition notice issued under this section to the attention of the health and safety committee at the workplace, where it exists.

(7) An employee shall not lose any wages or benefits for work not done as a result of the imposition of a prohibition notice.

(8) Any person who having been served with a prohibition notice under this section—

(a) continues to carry on the activities to which the notice relates; or

(b) breaks or removes or defeats the blocking, seal, bar, barricade, immobiliser or fence specified in subsection (5),

commits an offence and shall on conviction be liable to a fine not exceeding five hundred thousand shillings or to imprisonment for a term not exceeding three months or to both and if the contravention in respect of which he is convicted is continued after the conviction, he shall be guilty of a further offence and liable in respect thereof to a fine not exceeding ten thousand shillings or to imprisonment for a term not exceeding seven days, or to both, for each day on which the offence is so continued.

**38.** (1) In this section “notice” means an improvement notice or a prohibition notice.

Appeal against improvement or prohibition notice.

(2) A person to whom an improvement or a prohibition notice is issued under section 36 or 37 shall comply with the notice notwithstanding that an appeal against its issuance has been lodged.

(3) A person who is aggrieved by a notice issued by an occupational safety and health officer under sections 36 or 37 may, within fourteen days from the date of such notice, appeal to the Director who may, after considering the appeal, by order in writing confirm, revoke or vary the notice.

(4) A person who is aggrieved by a decision of the Director made under subsection (3) may, within fourteen days from the date of the decision, appeal to an appeal committee appointed by the Minister under section 46.

(5) Where an improvement or a prohibition notice is issued by

the Director in exercise of the powers conferred under sections 36 or 37, the appeal shall be made to an appeal committee appointed by the Minister under section 46.

Provisions on prohibition notices and improvement notices.

**39.** (1) In this section “a notice” means an improvement notice or prohibition notice.

(2) A notice may but need not, include directions as to the measures to be taken to remedy any contravention or matters to which the notice relates, and any such directions may be framed to—

- (a) any extent by reference to any code of practice approved by the Director; and
- (b) afford the person on which the notice is served a choice between ways of remedying the contravention or matter.

(3) Where any of the provisions of this Act or the rules made there under apply to a building or any matter connected with a building, the notice shall not direct any measures to be taken to remedy the contravention of that provision which are more onerous than those necessary to requirements of any building rules to which the building or matter would be required to conform.

(4) Before an occupational safety and health officer serves a notice in connection with any premises used or about to be used as a workplace, requiring or likely to lead to the taking of measures affecting the means of escape in case of fire with which the premises are or ought to be provided, he shall consult the fire authority of the area in which the premises are located.

(5) Where an improvement notice or prohibition notice, which is to take immediate effect, has been served—

- (a) the notice may be withdrawn by an occupational safety and health officer at any time before the end of the period specified therein in pursuance of section 36 or section 37, as the case may be; and
- (b) the period so specified may be extended by an occupational safety and health officer at any time when an appeal against the notice is not pending.

Occupational safety and health officer not to disclose information or source of complaints.

**40.** (1) An occupational safety and health officer shall not disclose any information obtained by him in the course of his duties and the exercise of any of the powers conferred by section 32 (including in particular, any information with respect to any manufacturing process

or trade secret obtained by him in any premises entered by him by virtue of any such power) except—

- (a) for the purposes of his functions;
- (b) for the purposes of any legal proceedings or any investigation or inquiry authorized by Government; or
- (c) with the relevant consent, that is to say, in the case of information furnished in pursuance of a requirement imposed under section 32, the consent of the person who furnished it, and, in any other case the consent of a person having responsibilities in relation to the premises where the information was obtained.

(2) Subject to subsection (1), no occupational safety and health officer shall divulge to any person the source of any complaint bringing to his notice any defect or breach of any of the provisions of this Act, and shall give no information to any owner, or occupier that a visit or inspection of any workplace was made in consequence of the receipt of such complaint.

(3) An occupational safety and health officer who contravenes the provisions of subsection (1) and (2) commits an offence.

**41.** No matter or thing done by an occupational safety and health officer shall if the matter or thing is done bonafide for the executing of the functions, powers or duties under this Act, render the officer personally liable for any action, claim or demand whatsoever.

Indemnity of occupational safety and health officer.

**42.** (1) Every safety and health advisor shall be issued with an annual certificate of authorization by the Director upon payment of the prescribed fee.

Safety and health advisor.

(2) A safety and health advisor shall not disclose any information obtained by him in the course of his duties, in respect of any manufacturing, process or trade secrets obtained by him in any premises entered by him except for purposes of—

- (a) his functions under this Act; or
- (b) any legal proceedings, investigations or inquiry authorized under this Act.

(3) A safety and health advisor who makes a report which is false or deficient in any material particular, or fails to send to the Director a copy of the report as required, commits an offence and on conviction

shall be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding three months, or to both

(4) A safety and health advisor who contravenes subsection (2) commits an offence and shall on conviction be liable to a fine not exceeding one hundred thousand shillings.

#### PART V—REGISTRATION OF WORKPLACES

Register of workplaces.

**43.** The Director shall keep a register of workplaces in which he shall cause to be entered such particulars in relation to every workplace required to be registered under this Act as he may consider necessary.

Registration of workplaces.

**44.** (1) Before any person occupies or uses any premises as a workplace, he shall apply for the registration of the premises by sending to the Director a written notice containing the particulars set out in the Fourth Schedule.

(2) Upon receipt of the notice referred to in subsection (1), the Director shall take such steps as may be necessary to satisfy himself that the premises are suitable for use as a workplace of the nature stated in the notice, and upon being so satisfied, shall cause the premises to be registered and shall issue to the applicant, upon payment of a prescribed fee, a certificate of registration in the form set out in the Fifth Schedule;

(3) The Director shall carry out the duties imposed upon him by this section with all practicable speed.

Cap. 514.

(4) All workplaces which were registered under the Factories and Other Places of Work Act (now repealed) shall be deemed to have been registered under this Act.

(5) Any person who, without having been issued with a certificate of registration under subsection (2), occupies or uses any premises as a workplace commits an offence and shall, on conviction be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding three months or to both, and, if the contravention in respect to which he is convicted is continued after the conviction, he shall be guilty of a further offence and liable in respect thereof to a fine not exceeding ten thousand shillings or to imprisonment for a term not exceeding seven days, or to both, for each day on which the offence is continued.

(6) Where the Director refuses to issue a certificate of registration under this section he shall, state in writing, the grounds of such refusal.

(7) The occupier of a workplace registered under this Act shall

notify the Director in writing of any proposed change in the registered particulars of that workplace prior to effecting the change.

(8) The occupier of a workplace who fails to comply with the provisions of subsection (7) commits an offence and shall on conviction be liable to a fine not exceeding one hundred thousand shillings or imprisonment for a term not exceeding three months or to both.

(9) A person who is aggrieved by a decision of the Director made under this section may, within fourteen days from the date of the decision, appeal to an appeal committee appointed by the Minister under section 46.

(10) The Minister may, after consultation with the Council, make regulations to provide for—

- (a) workplaces to be excepted from registration under this Act;
- (b) the registration of premises where employees perform any work or where plant or machinery is used and the fee payable in respect of such registration;
- (c) the registration of plant and machinery and the fee payable in respect of such registration.

**45.** (1) The Minister may, after consultation with the Council, by notice in the Gazette, except some classes of workplaces from the requirements of section 44. Exceptions to registration.

(2) The Minister may only except a class of workplaces under this section if he is satisfied that there are adequate arrangements in place for the protection of the safety and health of the affected employees.

(3) An exception granted under subsection (1) shall be subject to review by the Director every five years or such shorter period as he may deem necessary in order to assess the general status of the safety and health in the classes of workplaces thereby excepted, with a view to upholding the exception or withdrawing it.

(4) After the Council adopts a report of the review referred to in subsection (3), the Minister may, on the advice of the Council uphold or withdraw the exception.

(5) An occupier whose workplace has been excepted shall display a copy of the notice of exception at his workplace.

(6) An occupier of a workplace not excepted under subsection

(1) shall renew the certificate of registration issued under section 44 annually or after such other period as the Minister may, in consultation with the Council, prescribe.

Appeals.

**46.** (1) The Minister shall appoint appeal committees for the purpose of considering any appeal made under sections 36, 37 and 44.

(2) An appeal committee shall consist of a chairman to be appointed by the Minister from among members of the Council and two other persons to be appointed by the Minister who, in his opinion, have experience and knowledge in matters relating to the subject matter of the appeal.

(3) A member of an appeal committee may be paid an allowance at such rate as the Minister may determine with the approval of the Treasury.

(4) An appeal committee may, after hearing an appeal, confirm, revoke or vary a decision made by the Director under sections 36, 37, 38(3), or 44 and the decision of the appeal committee shall be final.

(5) An appeal committee shall determine and communicate its decision to the person making the appeal within fourteen days of the determination.

#### PART VI—HEALTH-GENERAL PROVISIONS

Cleanliness.

**47.** (1) Every workplace shall be kept in a clean state, and free from effluvia arising from any drain, sanitary convenience or nuisance, and, without prejudice to the generality of subsection (1)—

- (a) accumulations of dirt and refuse shall be removed daily by a suitable method from the floors and benches of workrooms, and from the staircases and passages;
- (b) the floor of every workroom shall be cleaned at least once in every week by washing or, if it is effective and suitable, by sweeping or by any other method;
- (c) all inside walls and partitions, and all ceilings or tops of rooms, and all walls, sides and tops of passages and staircase, shall—
  - (i) where they have a smooth impervious surface, at least once in every period of twelve months, be washed with hot water and soap or cleaned by other suitable method;

- (ii) where they are kept painted with oil paint or varnished, be repainted or varnished at least once in every period of five years, or such other period as the director may deem necessary, and at least once in every period of twelve months be washed with hot water and soap or cleaned by other suitable method; and
- (iii) in other cases, be kept whitewashed or colour washed, and the whitewashing or colour washing shall be repeated at least once in every period of twelve months.

Provided that where it appears to the Minister that in any class or description of workplaces or part thereof any of the provisions of this section are not required for the purpose of keeping the workplace in a clean state, or are by reason of special circumstances inappropriate or inadequate for such purpose, he may, if he thinks fit, by order direct that those provisions shall not apply to any workplace, or part of a workplace, of that class or description, or shall apply as varied by the order.

(2) An occupier who contravenes the provisions of this section commits an offence.

**48.** (1) An occupier shall ensure that his workplace shall not, while work is carried on, be so overcrowded as to cause risk of injury to the health of the persons employed therein. Overcrowding.

(2) Without prejudice to the generality of subsection (1) a workplace shall be of sufficient size for work to be carried out with ease and shall further have the necessary free space and, having regard to the nature of the work, an adequate amount of air for each employee, the minimum permissible being ten cubic metres per person:

Provided that, in determining, for the purposes of the sub-section the amount of cubic space in any room, no space more than four point five metres from the floor shall be taken into account, and, where a room contains a gallery, the gallery shall be treated for the purposes of this subsection as if it were partitioned off from the remainder of the room and formed a separate room.

(3) Every workroom shall be not less than three metres in height, measured from the floor to the lowest point of the ceiling or, where there is no ceiling, to the lowest point of the roofing material:

Provided that, if the Director is satisfied that owing to the special conditions under which the work is carried on in any workroom the application of the provisions of this subsection to that workroom would be inappropriate or unnecessary, he may by certificate in writing except the work room from those provisions subject to any conditions specified

in the certificate.

(4) An occupier who contravenes the provisions of this section commits an offence.

Ventilation.

**49.** (1) An occupier shall ensure that effective and suitable provision is made for securing and maintaining, by the circulation of fresh air in each workroom, the adequate ventilation of the room.

(2) The Minister may by rules, prescribe a standard of adequate ventilation for workplaces or for any class or description of workplaces or part thereof and for any other places of work.

(3) An occupier who contravenes the provisions of this section commits an offence.

Lighting.

**50.** (1) An occupier shall ensure that effective provision is made for securing and maintaining sufficient and suitable lighting, whether natural or artificial, in every part of his workplace in which persons are working or passing.

(2) All glazed windows and skylights used for the lighting of workrooms shall, so far as practicable be kept clean on both the inner and outer surface and free from obstruction:

Provided that this subsection shall not affect the white-washing or shading of windows and skylights for the purpose of mitigating heat or glare.

(3) Nothing in subsections (2) and (3) or in any rules made there under, shall be considered as enabling direction to be prescribed or otherwise given as to whether any artificial lighting is to be produced by any particular source of light.

(4) An occupier who contravenes the provisions of this section commits an offence.

Drainage of floors.

**51.** Where any process is carried on which renders the floor liable to be wet to such an extent that the wet is capable of being removed by drainage, effective means shall be provided and maintained for draining off the wet.

Sanitary conveniences.

**52.** (1) Sufficient and suitable sanitary conveniences for the persons employed in the workplace shall be provided, maintained and kept clean, and effective provision shall be made for lighting the conveniences; and, where persons of both sexes are or are intended to be employed (except in the case of workplaces where the only persons

employed are members of the same family dwelling there), such conveniences shall afford proper separate accommodation for persons of each sex.

(2) The Minister may make rules for determining for workplaces or for any class or description of workplace what is sufficient and suitable provision for the purpose of this section.

**53.** The provisions of section 52 and of any rules made there under shall, in such areas as the Minister may by notice in the Gazette direct, be enforced by the local authority. Enforcement of section 52 by local authorities.

**54.** Where an occupational safety and health officer finds any act or default in relation to any drain, sanitary convenience, water supply, nuisance or other matter in a workplace which is liable to be dealt with by the local authority under this Part or under the law relating to public health, he shall give notice therefore in writing to the local authority. Duty of occupational safety and health officer as to sanitary defects remediable by local authority.

#### PART VII—MACHINERY SAFETY

**55.** All plant, machinery and equipment whether fixed or mobile for use either at the workplace or as a workplace, shall only be used for work which they are designed for and be operated by a competent person. Safe use of plant, machinery and equipment.

**56.** (1) Every flywheel directly connected to any prime mover and every moving part of any prime mover, except prime mover referred to in subsection (3), shall be securely fenced, whether the flywheel or prime mover is situated in an engine-house or not. Prime movers.

(2) The head and tailrace of every water wheel and of every water turbine shall be securely fenced.

(3) Every part of an electric generator, motor and rotary converter, and every flywheel directly connected thereto, shall be securely fenced.

**57.** (1) Every part of transmission machinery shall be securely fenced. Transmission machinery.

(2) Efficient devices or appliances shall be provided and maintained in every room or place where work is carried on by which the power can promptly be cut off from the transmission machinery in that room or place.

(3) Every machine intended to be driven by mechanical or any other type of power shall be provided with an efficient starting and stopping appliance, the control of which shall be in such a position as to be readily and conveniently operated by the person operating the

machine.

(4) No driving-belt when not in use shall be allowed to rest or ride upon a revolving shaft which forms part of the transmission machinery.

(5) Suitable striking gear or other efficient mechanical appliances shall be provided and maintained and used to move driving-belts to and from fast and loose pulleys which form part of the transmission machinery and any such gear or appliances shall be so constructed, placed and maintained as to prevent the driving-belt from creeping back on to the fast pulley.

(6) The Director may by certificate in writing grant, subject to any conditions specified in the certificate, exemption from compliance with any of the requirements of subsections (2), (3), (4) and (5) in any case where he is satisfied that compliance with the requirement is unnecessary or impracticable.

Other machinery.

**58.** (1) Every dangerous part of any machinery, other than prime movers and transmission machinery shall be securely fenced:

Provided that, in so far as the safety of a dangerous part of any machinery cannot by reason of the nature of the operation be secured by means of a fixed guard, the requirements of this subsection shall be deemed to have been complied with if a device is provided which automatically prevents the operator from coming into contact with the part.

(2) Any part of a stock-bar which projects beyond the head-stock of a lathe shall be securely fenced.

Hand held and portable power tools and equipments.

**59.** (1) Every employer shall—

- (a) be responsible for the safe condition of tools and equipment used by his employees, including tools and equipment which may be furnished by the employees;
- (b) ensure that no equipment or portable power tools shall be used in an environment that contains or is likely to contain flammable vapours or substances unless they are intrinsically safe for such environments.

(2) All power driven portable and hand held tools shall have their operating controls so located as to minimise the possibility of their accidental operation if such an accidental operation would constitute a hazard to the worker or other persons.

**60.** All fencing or other safeguards provided in pursuance of the provisions of this Part shall be of substantial construction, constantly maintained and kept in position while the parts required to be fenced or safeguarded are in motion or in use.

Construction and maintenance of fencing.

**61.** (1) Where any machine in a workplace is a machine intended to be driven by mechanical power—

Construction and disposal of new machinery.

- (a) every set-screw, bolt or key on any revolving shaft spindle, wheel or pinion shall be so sunk, encased or otherwise effectively guarded as to prevent danger; and
- (b) all spur and other toothed or friction gearing which does not require frequent adjustment while in motion shall be completely encased.

(2) An importer, manufacturer, designer or supplier of machinery, plant, and equipment shall avail information concerning the correct installation, use, maintenance and disposal of the machinery, plant and equipment and provide information on any likely hazards and means to prevent or control them.

(3) A person who sells or lets on hire, or as agent of the seller or hirer, causes or procures to be sold or let on hire, knowing it to be for use in a workplace in Kenya, any machine intended to be driven by mechanical power which does not comply with the requirements of this section commits an offence and shall on conviction be liable to a fine not exceeding two hundred thousand shillings.

**62.** (1) No traversing part of any self-acting machine and no material carried thereon shall, if the space over which it runs is a space over which any person is liable to pass, whether in the course of his employment or otherwise, be allowed on its outward or inward traverse to run within a distance of fifty centimetres from any fixed structure not being part of the machine.

Self acting machines.

(2) An occupier shall ensure that all practicable steps are taken to instruct the person in charge of the machine and otherwise to ensure that no person employed shall be in the space between any traversing part of a self-acting spinning mule and any fixed part of the machine towards which the traversing part moves on the inward run, except when the machine is stopped with the traversing part on the outward run.

**63.** (1) Every hoist or lift shall be of good mechanical construction, sound material and adequate strength, free from patent defect and be properly maintained.

Hoists and lifts.

(2) Every hoist or lift shall be thoroughly examined at least once in every period of six months or after any modifications or extensive repairs or within a shorter period, by a person approved for the purposes of this section by the Director by certificate in writing, and a report of the result of every such examination, in the prescribed form and containing the prescribed particulars, shall be signed by the person carrying out the examination and shall be entered in or attached to the general register within fourteen days of the examination.

(3) Where the examination under subsection (2) shows that the hoist or lift cannot continue to be used with safety unless certain repairs are carried out immediately or within a specified time, the person making the report, shall—

- (a) inform the area occupational safety and health officer within twenty-four hours of the completion of the examination who may then issue an improvement notice or a prohibition notice as appropriate; and
- (b) send a written notice of the examination in the prescribed form containing the prescribed particulars to the area occupational safety and health office within seven days of its occurrence.

(4) Every hoist way or lift way shall be efficiently protected by a substantial enclosure fitted with gates, being such an enclosure as to prevent, when the gates are shut, any person falling down the hoist way or liftway or coming into contact with any moving part of the hoist or lift.

(5) A gate referred to in subsection(4) shall be fitted with efficient interlocking or other devices to ensure that the gate cannot be opened except when the cage or platform is at the landing and that the cage or platform cannot be moved away from the landing until the gate is closed.

(6) Every hoist or lift and every enclosure shall be so constructed as to prevent any part of any person or any goods carried in the hoist or lift being trapped between any part of the hoist or lift and any fixed structure or between the counterbalance weight and any other moving part of the hoist of lift.

(7) There shall be marked conspicuously on every hoist or lift the maximum working load which it can safely carry and no load greater than that load shall be carried on any hoist or lift.

(8) The following additional requirements shall apply to hoists and lifts used for carrying persons, whether together with goods or

otherwise—

- (a) efficient automatic devices shall be provided and maintained to prevent the cage or platform overrunning;
- (b) every cage shall, on each side from which access is afforded to a landing, be fitted with a gate, and in connexion with every such gate efficient devices shall be provided to ensure that, when persons or goods are in the cage, the cage cannot be raised or lowered unless the gate is closed, and will come to rest when the gate is opened; and
- (c) where the platform or cage is suspended by rope or chain, there shall be at least two ropes or chains separately connected with the platform or cage, each rope or chain separately connected with the platform or cage, each rope or chain and its attachments being capable of carrying the whole weight of the platform or cage and its maximum working load, and efficient devices shall be provided and maintained which will support the platform or cage with its maximum working load in the event of a breakage of the ropes or chains or any of their attachments.

(9) Where a hoist or lift is not connected with mechanical power—

- (a) in subsection (2) the reference to six months shall be substituted by a reference to twelve months;
- (b) subsection (5) shall be substituted by the following subsection—
  - (5) Any gate referred to in subsection (4) shall be kept closed and fastened except when the cage or platform is at rest at the landing; and
- (c) subsection (8) shall not apply.

(10) For the purposes of this section, no lifting machine or appliance shall be deemed to be a hoist or lift unless it has a platform or cage the direction of movement of which is restricted by a guide or guides.

**64.** (1) The following provisions shall be complied with respect to every chain, rope or lifting tackle used for the purpose of raising or lowering persons, goods or materials—

Chains, ropes and lifting tackle.

- (a) no chain, rope or lifting tackle shall be used unless it is of

good construction, sound material, adequate strength and free from patent defect;

- (b) a table showing the safe working loads of every kind and size of chain, rope or lifting tackle in use, and, in the case of a multiple sling, the safe working load at different angles of the legs, shall be prominently displayed on the premises, so, however, that the provisions of this paragraph shall not apply in relation to any lifting tackle if the safe working load thereof, or in the case of a multiple sling the safe working load at different angles of the legs, is plainly marked upon it;
- (c) no chain, rope or lifting tackle shall be used for any load exceeding the safe working load thereof as shown by the table referred to in paragraph (b) or marked upon it;
- (d) all chains, ropes and lifting tackle in use shall be thoroughly examined at least once in every period of six months, or at such greater intervals as the Director may in any particular case permit, by a person approved for the purposes of this section by the Director by certificate in writing;
- (e) no chain, rope or lifting tackle, except a fibre rope or fibre rope sling, shall be used in any workplace for in that workplace unless it has been tested and thoroughly examined by a person approved by the Director for the purposes of this section, and a certificate of such a test and examination, specifying the safe working load and signed by the person carrying out the test and examination, has been obtained and is kept available for inspection:

Provided that the provisions of this paragraph shall not apply as respects any chain, rope or lifting tackle in respect of which there has been obtained, and is kept available for inspection, a certificate of test and thorough examination issued by the manufacturer of the chain, rope or lifting tackle;

- (f) every chain and lifting tackle, except a rope sling, shall, unless of a class or description exempted by the Director by notice published in the Gazette, be annealed at least once in every fourteen months, or, in the case of a chain or sling of half-inch bar or smaller, or chain used in connexion with molten metal or molten slag, in every six months, so, however, that a chain and lifting tackle not in regular use need be annealed only when necessary.

(2) In this section, “lifting tackle” means chain slings, rope slings, rings, hooks, shackles and swivels.

**65.** (1) All parts and working gear whether fixed or movable, including the anchoring and fixing appliances, of every lifting machine shall be of good construction, sound material, adequate strength and free from patent defect, and shall be properly maintained.

Cranes and other lifting machines.

(2) All parts and gear referred to in subsection (1) shall be thoroughly examined, at least once in every period of twelve months, or after any modifications or extensive repairs or within a shorter period, by a person approved for the purposes of this section by the Director by certificate in writing.

(3) No lifting machine shall be used in any workplace, for the first time in that workplace, unless it has been tested and all the parts and working gear of the machine specified in subsection (1) have been thoroughly examined, by a person approved by the Director for the purposes of this section and a certificate of the test and examination, specifying the safe working load or loads of the machine and signed by the person who carried out the test and examination, has been obtained and is kept available for inspection:

Provided that the provisions of this subsection shall not apply with respect to any lifting machine in respect of which there has been obtained, and is kept available for inspection, a certificate of test and thorough examination issued by the manufacturer of the machine.

(4) All rails on which a travelling crane moves and every track on which the carriage of a transporter or runway moves shall be of proper size and adequate strength, and have an even running surface; and any such rails or track shall be properly laid, adequately supported or suspended and properly maintained.

(5) There shall be plainly marked on every lifting machine the safe working load or loads thereof, except that in the case of a jib crane so constructed that the safe working load may be varied by the raising or lowering of the jib there shall be attached thereto either an automatic indicator of safe working loads or a table indicating the safe working loads at corresponding inclinations of the jib or corresponding radii of the load.

(6) No lifting machine shall, except for the purpose of a test, be loaded beyond the safe working load as marked or indicated under subsection (5).

(7) If any person is employed or is working on or near the wheel-

track of an overhead travelling crane in any place where he would be liable to be struck by the crane, effective measures shall be taken to ensure that the crane does not approach within six metres of that place.

(8) A lifting machine shall not be operated except by a person who is trained and possesses a certificate in writing to that effect from a recognised institution, to operate that machine, except that it shall be permissible for such machine to be operated by a person who is under the direct supervision of a qualified person for the purposes of training, and no person under the apparent age of eighteen years of age shall be employed to operate any lifting machine driven by mechanical power or to give signals to the operator of any such machine.

(9) In this section, “lifting machine” includes a crane, crab, winch, teagle, pulley block, gin wheel, transporter or runway used for raising or lowering of goods.

Register of chains, ropes and lifting tackle and lifting machines.

**66.** A register, containing the particulars set out in the Sixth Schedule, shall be kept in every workplace with respect to all chains, ropes or lifting tackle except fibre rope slings, to which section 64 applies, and with respect to all lifting machines to which section 65 applies.

Steam boilers.

**67.** (1) Every steam boiler and all its fittings and attachments shall be of good construction, sound material, adequate strength and free from patent defect, and shall be properly maintained.

(2) Every steam boiler, whether separate or one of a range shall—

(a) have attached to it—

(i) a suitable safety valve, separate from and incapable of being isolated by any stop-valve, which shall be so adjusted as to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure and shall be fixed directly to, or as close as practicable to, the boiler, and a suitable stop-valve connecting the boiler to the steam pipe;

(ii) a correct steam pressure gauge, connected to the steam space and easily visible by the boiler attendant, which shall indicate the pressure of steam in the boiler in kilograms per square centimetre and have marked upon it, in a distinctive colour, the maximum permissible working pressure;

(iii) at least one water gauge, of transparent material or other

type approved by the Director, to show the water level in the boiler, and, if the gauge is of the glass tubular type and the working pressure in the boiler normally exceeds two point eight kilograms per square centimetre, the gauge shall be provided with an efficient guard but not so as to obstruct the reading to the gauge;

(iv) where it is one of two or more boilers, a plate bearing a distinctive number which shall be easily visible;

(b) be provided with means for attaching a test pressure gauge; and

(c) be provided with a suitable fusible plug or an efficient low-water alarm device:

Provided that subparagraph (ii) of paragraph (a) shall not apply with respect to economizers, and subparagraphs (iii), (iv) and (v) of paragraph (a), and paragraphs (b) and (c), shall not apply with respect to economizers or superheaters.

(3) For the purposes of subsection (2), a lever-valve shall not be deemed a suitable safety valve unless the weight is secured on the lever in the correct position.

(4) Every steam boiler attendant shall be properly instructed on his duties.

(5) No person shall enter or be in any steam boiler which is one of a range of two or more steam boilers unless—

(a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range are disconnected from that part; or

(b) all valves or taps controlling such entry are closed and securely locked, and, where the boiler has a blow-off pipe in common with one or more other boiler or delivering into a common blow-off vessel or sump, the blow-off valve or tap on each such boiler is so constructed that it can only be opened by a key which cannot be removed until the valve or tap is closed and is the only key in use for that set of blow-off valves or taps.

(6) No work shall be permitted in any boiler-furnace or boiler-flue until it has been sufficiently cooled by ventilation or otherwise to make work safe for persons employed.

(7) The boiler room shall be kept clean and shall not be used as a resting place or storeroom or for any other purpose at any given time.

(8) Every steam boiler and all its fittings and attachments shall be thoroughly examined by an approved person, at least once in every period of twelve months, and also after any modifications or extensive repairs:

Provided that the person carrying out any such examination may specify in writing a period exceeding twelve months but not exceeding fifteen months within which the next examination is to be carried out.

(9) Any examination in accordance with the requirements of subsection (8) shall consist, in the first place, of an examination of the boiler when it is cold and the interior and exterior have been prepared in the prescribed manner, and secondly, except in the case of an economizer or super heater, of an examination when it is under normal steam pressure; the examination under steam pressure shall be made as soon as possible after the examination of the boiler when cold, and the person carrying out the examination shall see that the safety valve is so adjusted as to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure.

(10) The Seventh Schedule shall apply in respect of an examination of a boiler when it is cold.

(11) A report of the result of an examination under subsection (8) shall be made in the prescribed form and containing the prescribed particulars, including particulars of the maximum permissible working pressure, and shall be signed by the person who carried out the examination as soon as practicable and in any case within twenty-eight days of the completion of the examination and be entered in or attached to the general register.

(12) For the purposes of subsections (11), (13) and (14), the examination of a boiler when it is cold and its examination when it is under steam pressure shall be treated as separate examinations.

(13) No steam boiler which has previously been used shall be taken into use in any workplace or premises for the first time in that workplace or premises until it has been examined and reported on in accordance with subsections (8), (9) and (11).

(14) No new steam boiler shall be taken into use for the first time in any workplace unless there has been obtained in respect thereof—

- (a) the manufacturer's complete specifications which shall include full details of the composition and physical properties of all rivets, plates, sections, tubes, bars and electrodes used for pressure part;
- (b) dimensional drawings of the complete boiler showing the thickness of plates, details of riveting and the position and extent of all welds;
- (c) the manufacturer's certificate of test; and
- (d) a certificate specifying the maximum permissible working pressure of the boiler, stating the nature of the tests to which the boiler, attachments and fittings have been submitted, issued and signed by the person making the examination.

(15) The person carrying out an examination under this section shall within twenty four hours of the examination, report to the area occupational safety and health officer, any defect which would render the boiler imminently dangerous if not rectified immediately.

(16) The person making the report of an examination under this section shall, within seven days, after completion of the examination, send to the area occupational safety and health office, a copy of the written report in every case where the maximum permissible working pressure is reduced, or where the boiler cannot continue to be used with safety unless certain repairs are carried out immediately or within a specified time and the officer in charge of the office may, on the basis of the report, issue an improvement notice or prohibition notice as appropriate.

(17) If the person making the examination under this section fails to carry out a thorough examination as required by this section, makes a report which is false or deficient in any material particular, or fails to send to the Director a copy of any report as required, that person commits an offence shall a conviction be liable to a fine not exceeding two hundred thousand shillings, or to imprisonment for a term not exceeding six months, or to both.

(18) Where the report of any examination under this section specifies conditions for securing the safe working pressure of a steam boiler, the boiler shall not be used except in accordance with those conditions.

(19) In this section—

“approved person” means any person who is approved by the

Director, by certificate in writing, to carry out examinations of steam boilers in accordance with, and for the purposes of, this section and to issue the certificate referred to in subsection (11);

“maximum permissible working pressure”, in the case of a new steam boiler means, that specified in the certificate referred to in subsection (14) of this section, and, in the case of a steam boiler which has been examined in accordance with this section, that specified in the report of the last examination.

Steam receivers and steam containers.

**68.** (1) Every steam receiver and all its fittings shall be of good construction, sound material, adequate strength, and free from patent defect, and shall be properly maintained.

(2) Every steam receiver, not so constructed and maintained as to withstand with safety the maximum permissible working pressure of the boiler or the maximum pressure which can be obtained in the pipe connecting the receiver with any other source of supply, shall be fitted with—

- (a) a suitable reducing valve or other suitable automatic appliance to prevent the safe working pressure of the receiver being exceeded;
- (b) a suitable safety valve so adjusted as to permit the steam to escape as soon as the safe working pressure is exceeded, or a suitable appliance for cutting off automatically the supply of steam as soon as the safe working pressure is exceeded;
- (c) a correct steam pressure gauge, which shall indicate the pressure of steam in the receiver in kilograms per square centimetre;
- (d) a suitable stop valve;
- (e) except where only one steam receiver is in use, a plate bearing a distinctive number which shall be easily visible;

and the safety valve and pressure gauge shall be fitted either on the steam receiver or on the supply pipe between the receiver and the reducing valve or other appliance to prevent the safe working pressure being exceeded.

(3) For the purposes of paragraphs (a), (b), (c) and (d) of subsection (2), any set of receivers supplied with steam through a single pipe and forming part of a single machine may be treated as one receiver, and for the purpose paragraphs (a), (b) and (c) of subsection

(2), any other set of receivers supplied with steam through a single pipe may be treated as one receiver:

Provided that this subsection shall not apply to any such set of receivers unless the reducing valve or other appliance to prevent the safe working pressure being exceeded is fitted on the said single pipe.

(4) Every steam receiver and all its fittings shall be thoroughly examined by an approved person, so far as the construction of the receiver permits, at least once in every period of twenty-four months or after repairs.

(5) A report of the result of every examination referred to in subsection (4), shall be in the prescribed form containing the prescribed particulars, including particulars of the safe working pressure and shall be entered in or attached to the general register shall be signed by the person who carried out the examination.

(6) No steam receiver which has previously been used shall be taken into use in any workplace for the first time in that workplace until it has been examined and reported on in accordance with subsections (4) and (5).

(7) No new steam receiver shall be used in a workplace for the first time unless there has been obtained from the manufacturer of the receiver, or from a person approved by the Director, a certificate specifying the safe working pressure of the receiver stating the nature of the tests to which the receiver and fittings have been submitted, and the certificate is kept available for inspection, and the receiver is so marked as to enable it to be identified as the receiver to which the certificate relates.

(8) No person shall use, in any workplace, a steam receiver, or a steam container which does not comply with the standards set out in this section.

(9) Every steam container shall be so maintained as to secure that the outlet is at all times kept open and free from obstruction.

(10) In this section—

“approved person” means any person who is approved by the Director, by certificate in writing, to carry out examinations of steam receivers in accordance with, and for the purposes of, this section and to issue the certificate referred to in subsection (6);

“maximum permissible working pressure” has the same meaning

as in section 67;

“safe working pressure” means, in the case of a new steam receiver, that specified in the certificate referred to in subsection (6) and, in the case of a steam receiver which has been examined in accordance with the provisions of this section, that specified in the report of the last examination;

“steam container” means any vessel, other than a steam pipe or coil, constructed with a permanent outlet into the atmosphere or into a space where the pressure does not exceed atmospheric pressure, and through which steam is passed at atmospheric pressure, or at approximately that pressure, for the purpose of heating, boiling, drying, evaporating or other similar purpose;

“steam receiver” means any vessel or apparatus other than a steam boiler, a steam container, a steam pipe or coil, or a part of a prime mover used for containing steam under pressure greater than atmospheric pressure.

Air receivers.

**69.** (1) Every air receiver shall—

- (a) have marked upon it, so as to be plainly visible, the safe working pressure;
- (b) in the case of a receiver connected with an air compressing plant either be so constructed as to withstand with safety, the maximum pressure which can be obtained in the compressor, or be fitted with a suitable reducing valve or other suitable appliance to prevent the safe working pressure of the receiver being exceeded;
- (c) be fitted with a suitable safety valve so adjusted as to permit the air to escape as soon as the safe working pressure is exceeded;
- (d) be fitted with a correct pressure gauge indicating the pressure in the receiver in pounds per square inch;
- (e) be fitted with a suitable appliance for draining the receiver;
- (f) be provided with a suitable manhole, hand hole or other means which will allow the interior to be thoroughly cleaned; and
- (g) in a case where more than one receiver is in use in the workplace, bear a distinguishing mark which shall be easily

visible.

(2) For the purpose of the provisions of subsection (1) relating to safety valves and pressure gauges, any set of air receivers supplied with air through a single pipe may be treated as one receiver:

Provided that, in a case where a suitable reducing valve or other suitable appliance to prevent the safe working pressure being exceeded is required to be fitted, this subsection shall not apply unless the valve or appliance is fitted on the said single pipe.

(3) Every air receiver and its fittings shall be of sound construction and properly maintained.

(4) No person shall use in any workplace, an air receiver which does not comply with the standards set out in this section.

(5) Every air receiver shall be thoroughly cleaned and undergo a thorough examination by an approved person at least once in every period of twenty four months or after any extensive repairs:

Provided that in the case of a receiver of solid drawn construction—

- (a) the person making any such examination may specify in writing, a period exceeding twelve months but not exceeding forty-eight months within which the next examination is to be carried out; and
- (b) if it so constructed that the internal surface cannot be thoroughly examined, a suitable hydraulic test of the receiver shall be carried out in lieu of internal examination,

every such examination and test shall be carried out by an approved person, and a report of the result of every such examination and test, shall be in the prescribed form containing the prescribed particulars, including particulars of the safe working pressure, be signed by the person who carried out the examination or test and be entered in or attached to the general register.

(6) In this section—

“air receiver” means—

- (a) any vessel (other than a pipe or coil, or an accessory, fitting or part of a compressor) for containing compressed air and connected with an air compressing plant; or

- (b) any fixed vessel for containing compressed air or compressed exhaust gases and used for the purpose of starting an internal combustion engine;

“approved person” means any person who is approved by the Director, by certificate in writing for the purpose of carrying out examinations and tests of air receivers in accordance with, and for the purposes of this section.

Cylinders for compressed, liquefied and dissolved gases.

**70.** (1) Every cylinder for compressed, liquefied and dissolved gases, and its fittings, shall be—

- (a) so designed as to be suitable for the particular circumstances of their use; and
- (b) of sufficient strength to sustain the internal pressures to which they will normally be subjected.

(2) Every cylinder for compressed, liquefied and dissolved gases shall conform to a standard specification prescribed under the Standards Act or where a standard is not prescribed, a standard specification approved by the Director and the Kenya Bureau of Standards for purposes of this Act and shall be of good construction, sound material, adequate strength and free from patent defect.

(3) Every cylinder, when constructed or sold, shall be covered by the manufacturer’s test certificate showing compliance with the safety and health standards specifications prescribed under section 4, and the certificate shall be obtainable, during the whole life of the cylinder, from the owner of the cylinder.

(4) Every cylinder owner shall keep a cylinder maintenance register in which shall be noted, under the corresponding dates, all tests, internal and external examination, cleanings and repairs undertaken on the cylinder, and the register shall be available for inspection by an occupational safety and health officer at all times.

(5) It shall be the duty of a cylinder owner to ensure that all cylinders belonging to him are examined and tested and the results of such examinations and tests are entered in the cylinder maintenance register by a person approved by the Director by certificate in writing—

- (a) before being placed in service for the first time; or
- (b) before being placed in service after repairs other than changing the neck ring which carried the cap, re-tapping the neck or changing the foot-ring and;

(c) at intervals not exceeding two years in the case of cylinders for corrosive gases and five years in the case of cylinders for other gases.

(6) The test that a cylinder other than an acetylene cylinder shall undergo to comply with the provisions of subsection (5) shall comprise—

(a) a hydraulic pressure test which shall exceed the maximum permissible working pressure; and

(b) an internal and external examination in the accordance with the requirements of the standard specification referred to in subsection (2) of this section.

(7) The following particulars shall be clearly and boldly marked on every cylinder—

(a) owner's name;

(b) registered number as shown in maintenance register;

(c) clear indication of the gas to be charged;

(d) date of type of test undertaken;

(e) country and year of manufacture;

(f) permissible maximum charging pressure; and

(g) standard specification used.

(8) Every cylinder for compressed, liquefied and dissolved gases shall be clearly marked for the purpose of identification of their contents in a colour conforming to a standard specification of cylinder colour markings.

(9) Markings required under the provisions of subsection (7) shall not be—

(a) cut into the metal of the cylinder unless special reinforcement has been provided for that purpose; or

(b) placed on the cap.

(10) In addition to the requirements of subsection (7), every

cylinder for—

- (a) liquefied gases shall be clearly and boldly marked with the permissible maximum weight of the charge of gas for which the cylinder is designed;
- (b) the compressed gases shall be clearly and boldly marked with the permissible maximum weight of the charge of gas for which the cylinder is designed; and
- (c) the compressed gases shall be clearly and boldly marked with the cubic capacity.

(11) Before being charged for the purposes of subsection (10), every cylinder shall—

- (a) be carefully examined at the charging station to ensure that it complies with the provisions of this section; and
- (b) except in the case of acetylene, be completely emptied.

(12) Every cylinder for liquefied gases with a critical temperature exceeding the usual ambient temperature shall not be completely filled in order to prevent the generation of dangerous pressure when used at temperatures exceeding this critical temperature, and, cylinders for liquefied gases shall be weighted during charging.

Refrigeration plants.

**71.** (1) Every refrigeration plant capable of being entered by an employee shall—

- (a) have all control valves situated outside the cold storage room; and
- (b) have all doors of cold storage room capable of being opened easily and quickly from the inside and outside.

(2) Every refrigeration plant which has a positive displacement compressor shall be provided with—

- (a) an automatic pressure relief device for that compressor; and
- (b) a suitable pressure gauge to indicate the discharge pressure from such plant.

(3) The occupier of a workplace in which a refrigeration plant specified in subsection (1) is in use, shall cause an approved person to examine, test and certify at least once in every period of twelve months the entire plant together with all its components and auxiliary parts.

(4) A report of the examination shall be in the prescribed form containing the prescribed particulars, be signed by the person making the examination and shall, as soon as practicable and in any case within twenty-eight days of the completion of the examination, be entered in or attached to the general register.

(5) In this section—

“approved person” means any person who is approved by the Director, by certificate in writing for the purpose of carrying out examinations and tests of refrigeration plants in accordance with, and for the purposes of this section.

**72.** Any person who, for purposes of this Part, desires that an examination of any equipment or plant be carried out by a person approved for that purpose under this Part, and any person who desires to obtain the certificates referred to in sections 63, 64, 65, 67, 68, 69, 70 and 71 from any such approved person, may, on payment of the prescribed fee, request such an approved person to carry out the necessary tests and examination with a view to obtaining the certificate.

Examination and testing of plants.

#### PART VIII—SAFETY-GENERAL PROVISIONS

**73.** (1) Every fixed vessel, structure, sump or pit of which the edge is less than one metre above the adjoining ground or platform shall, if it contains any scalding, corrosive or poisonous liquid, either be securely covered or be securely fenced to at least that height to prevent any person from falling into the vessel, structure, sump or pit.

Vessels containing dangerous liquids.

(2) A plant referred to in subsection (1) shall have a warning notice, indicating the nature of the danger, in a form readily understood by the persons in the workplace and shall be marked on or attached to the plant or, if this is not practicable, be posted in a conspicuous location near the plant.

**74.** (1) All goods, articles and substances stored in a workplace shall be stored or stacked—

Storage.

- (a) in such manner as will ensure their stability and prevent any fall or collapse of the stack;
- (b) in such manner as not to interfere with the adequate distribution of natural or artificial light, the natural ventilation systems, the proper operation of machines or other equipment, the unobstructed use of passageways, gangways or traffic lanes, and the efficient functioning of sprinkler

systems, the unobstructed access to other fire extinguishing equipments within the workplace; and

(c) on firm foundations not liable to overload any floor.

(2) No goods, articles or substances shall be stored or stacked against a wall or partition unless the wall or partition is of sufficient strength to withstand any pressure caused thereby.

Ladders.

**75.** (1) Every ladder to be issued in workplace shall be of good construction, sound material adequate strength and suitable for the purpose for which it is used and shall be properly maintained.

(2) No ladder shall be used unless—

(a) it is securely fixed in a position to prevent it from slipping or falling, except that when this is impracticable, a person shall be stationed at the base of the ladder to prevent it from slipping or falling;

(b) it stands on a firm and level footing except in the case of suspended ladder;

(c) it is secured where necessary to prevent undue swaying or sagging;

(d) it is equally and properly supported on each stile or side;

(e) in the absence of adequate handhold, it extends at least one metre above the place of landing or the highest rung to be reached by the feet of the person using the ladder, or if this is impracticable, to the greatest height; and

(f) there is sufficient space at each rung to provide adequate foothold.

(3) Subsection (2) shall not apply to any folding stepladder, provided that it has a level and firm footing and is used in the fully open position with any spreaders locked.

Ergonomics at the workplace.

**76.** (1) Machinery, equipment, personal protective equipment, appliances and hand tools used in all workplaces shall comply with the prescribed safety and health standards and be appropriately installed, maintained and safe guarded.

(2) Every employer shall take necessary steps to ensure that workstations, equipment and work tasks are adapted to fit the employee

and the employee's ability including protection against mental strain.

(3) Every manufacturer, importer and supplier or an agent of a manufacturer, importer and supplier of the machinery and equipment referred to in paragraph (1) shall ensure that the equipment complies with the safety and health standards prescribed under this Act and shall provide adequate and appropriate information including hazard warning signs.

(4) An employer shall not require or permit any of his employees to engage in the manual handling or transportation of a load which by reason of its weight is likely to cause the employee to suffer bodily injury.

**77.** (1) All floors, steps, stairs, passages and gangways in a workplace shall be of sound construction and be properly maintained. Safe means of access and safe place of employment.

(2) All openings in floors shall be securely fenced, except in so far as the nature of the work renders such fencing impracticable.

(3) There shall, so far as is practicable, be provided and maintained safe means of access to every place at which any person, has at any time, to work.

(4) Necessary precautions including warning signs, shall be taken to prevent injury to employees and other persons at a workplace from mobile plants falling objects and objects ejected from machines and work processes.

(5) For every staircase in a building or affording a means of exit from a building, a substantial hand-rail shall be provided and maintained, which, if the staircase has an open side, shall be on that side, and, in the case of a staircase having two open sides, such a handrail shall be provided and maintained on both sides; and any open side of a staircase shall also be guarded by the provision and maintenance of a lower rail or other effective means.

(6) Sufficient clear and unobstructed space shall be maintained at every machine while in motion to enable the work to be carried on without unnecessary risk.

(7) Where any person is to work at a place from where he is liable to fall a distance of more than three metres, then, unless the place is one which affords secure foothold and, where necessary, secure handhold, means shall be provided, so far as is reasonably practicable, by fencing or otherwise for ensuring his safety.

(8) Every teagle opening or similar doorway used for hoisting or

lowering goods or materials, whether by mechanical power or otherwise, shall be securely fenced, and shall be provided with a secure handhold on each side of the opening or doorway; the fencing shall be properly maintained and shall, except when the hoisting or lowering of goods or materials is being carried on at the opening or doorway, be kept in position.

(9) While any person is within a workplace for the purpose of employment or meals, the doors of the workplace, and of any room therein in which the person is, and any doors which afford a means of exit for persons employed in the workplace from any building or from any enclosure in which the workplace is situated, shall not be locked or fastened in such manner that they cannot be easily and immediately opened from the inside.

Fire prevention.

**78.** (1) All stocks of highly inflammable substances shall be kept either in a fire-resisting store or in a safe place outside any occupied building:

Provided that no such store shall be so situated as to endanger the means of escape from the workplace or from any part thereof in the event of a fire occurring in the store.

(2) Where highly flammable liquids are to be conveyed within a workplace they shall, where it is practicable so to do, be conveyed through a totally enclosed system incorporating pipe-lines and pumps or similar appliances but where conveyance of highly flammable liquids within a workplace through such a totally enclosed system is not practicable, they shall be conveyed in vessels which are so designed and constructed as to avoid so far as practicable, the risk of spilling.

(3) Where in any process or operation any highly flammable liquid is liable to be spilled or to leak, all reasonably practicable steps shall be taken to ensure that any highly flammable liquid, which is spilt, or leaks shall be contained or immediately drained off to a suitable container or to a safe place, or otherwise treated to make it safe.

(4) No means likely to ignite vapours from highly flammable liquids shall be present where a dangerous concentration of vapours from flammable liquids may reasonably be expected to be present.

(5) No person shall smoke, light or carry matches, lighters or other flame producing articles, or smoking materials, in any place in which explosive, highly flammable or highly combustible substances, are manufactured, used, handled or stored and the occupier shall take all practicable steps to ensure compliance with the foregoing provisions of this subsection, including the display at or as near as possible to every

place in which this subsection applies, a clear and bold notice indicating that smoking is prohibited in that place.

**79.** (1) Where work has to be done inside any chamber, tank, vat, pit or other confined space, in which dangerous fumes are liable to be present—

Precautions in places where dangerous fumes likely.

- (a) the confined space shall be provided with adequate means of egress; and
- (b) no person shall enter the confined space for any purposes unless the following requirements are complied with—
  - (i) all practicable steps shall be taken to remove any fumes which may be present and to prevent any ingress of fumes and, unless it has been ascertained by a suitable test that the space is free from dangerous fumes, the person entering shall wear a belt to which there is securely attached a rope of which the free end is held by a person outside; or
  - (ii) the person entering shall wear a suitable breathing apparatus; and
- (c) suitable breathing apparatus a suitable reviving apparatus and suitable belts and ropes shall be provided and maintained so as to be readily accessible;
- (d) a sufficient number of the persons employed shall be trained and practiced in the use of such apparatus and in the method of restoring respiration; and
- (e) no person shall enter a confined space for any purpose unless authorized in writing by the occupier.

(2) No person shall perform work in a confined space unless he is sufficiently trained and informed on hazards involved in confined spaces.

**80.** (1) Where, in connection with any grinding, sieving or other process giving rise to dust, there may escape into any workroom, dust of such a character and to such an extent as to be liable to explode on ignition, all practicable steps shall be taken to prevent such an explosion by enclosure of the plant used in the process, and by removal or prevention of accumulation of the dust, and by exclusion or effective enclosure of possible sources of ignition.

Precautions with respect to explosive or inflammable dust or gas.

(2) Where there is present in any plant used in any process referred to in subsection (1), dust of such a character and to such an extent as to

be liable to explode on ignition, then, unless the plant is so constructed as to withstand the pressure likely to be produced by any such explosion, all practicable steps shall be taken to restrict the spread and effects of such an explosion by the provision, in connexion with the plant, of chokes, baffles and vents, or other equally effective appliances.

(3) Where any part of a plant contains any explosive or highly flammable liquid, gas or vapour under pressure greater than atmospheric pressure, that part shall not be opened, except in accordance with the following provisions—

- (a) before the fastening of any joint of any pipe connected with the part of the plant or the fastening of the cover of any opening into the part is loosened, any flow of the liquid, gas or vapour into the part or into any such pipe shall be effectively stopped by a stop valve or otherwise; and
- (b) before any such fastening is removed, all practicable steps shall be taken to reduce the pressure of the liquid, gas or vapour in the pipe or part of the plant to atmospheric pressure; and if any such fastening has been loosened or removed, no explosive or flammable liquid, gas or vapour shall be allowed to enter the pipe or part of the plant until the fastening has been secured or, as the case may be, securely replaced.

(4) No plant, tank or vessel which contains or has contained any explosive or inflammable substance shall be subjected to any welding, brazing or soldering operation or to any cutting operation which involves the application of heat, until all practicable steps have been taken to remove the substance and any fumes arising there from, or to render them non-explosive or non-inflammable; and, if any plant, tank or vessel has been subjected to any such operation, no explosive or inflammable substance shall be allowed to enter the plant, tank or vessel until the metal has cooled sufficiently to prevent any risk of igniting the substance.

(5) The Director may, by certificate in writing and subject to any condition specified in the certificate, exempt any part of a plant from compliance with any of the requirements of subsection (3) in any case where he is satisfied that compliance with the requirement is unnecessary or impracticable.

**81.** (1) In every workplace or workroom there shall be—

- (a) provided and maintained, and conspicuously displayed and free from any obstruction so as to be readily accessible, means for extinguishing fire, which shall be adequate and

suitable having regard to the circumstances of each case; and

(b) present, persons trained in the correct use of such means of extinguishing fire during all working hours.

(2) Every workplace shall be provided with adequate means of escape, in case of fire, for the persons employed therein, having regard to the circumstances of each case.

(3) All the means of escape referred to in subsection (2) shall be properly maintained and kept free from obstruction.

(4) The contents of any room in which persons are employed shall be so arranged that there is a free passageway for all persons working in the room to a means of escape in case of fire.

(5) All doors affording a means of exit from the workplace for the persons employed therein shall, except in the case of sliding doors, be constructed to open outwards.

(6) While any person is within a workplace for the purpose of employment or meals, the doors of the workplace, and of any room therein in which the person is, and any doors which afford a means of exit for persons employed in the workplace from any building or from any enclosure in which the workplace is situated, shall not be locked or fastened in such manner that they cannot be easily and immediately opened from the inside.

(7) Every window, door or other exit affording means of escape in case of fire or giving access thereto, other than the means of exit in ordinary use, shall be distinctively and conspicuously marked by a notice printed in red letters of an adequate size.

(8) There shall be marked on the floor of every workroom gangways to facilitate proper arrangement of the contents of the workroom with a view to keeping all fire extinguisher points and fire exits free from obstruction and for ensuring proper housekeeping.

(9) Every occupier of a workplace shall take effective steps to ensure that all the persons employed therein are familiar with the means of escape in case of fire, and with the routine to be followed in case of fire.

**82.** (1) Every occupier of a workplace shall design evacuation procedures to be used during any emergency and have the procedures tested at regular intervals.

Evacuation  
procedures.

(2) Every occupier shall take immediate steps to stop any operation where there is an imminent and serious danger to safety and health and to evacuate persons employed as appropriate.

(3) Every occupier shall be required to provide where necessary, measures to deal with emergencies and accidents including adequate first aid arrangements.

(4) Every occupier shall take effective steps to ensure that all persons employed are familiar with the means of escape in case of fire, and with the routine to be followed in case of fire or other emergency.

#### PART IX—CHEMICAL SAFETY

The handling, transportation and disposal of chemicals and other hazardous substances.

**83.** (1) The Director shall, after consulting the Council, establish safety and health requirements based on risk assessments, technical standards and medical opinion, for the safe handling and transportation of chemicals and other hazardous substances.

(2) An employer shall not require or permit his employee to engage in the manual handling or transportation of a load which by reason of its nature is likely to cause the employee to suffer bodily injury.

(3) Any person supplying, distributing, conveying or holding in chemicals or other toxic substances shall ensure that they are packaged, conveyed, handled and distributed in a safe manner so as not to cause any ill effect to any person or the immediate environment.

(4) At every workplace where chemicals or other toxic substances are manipulated, the employer shall develop a suitable system for the safe collection, recycling and disposal of chemical wastes, obsolete chemicals and empty containers of chemicals to avoid the risks to safety, health of employees and to the environment.

Material safety data sheets.

**84.** (1) Every manufacturer, importer, supplier or distributor of chemicals shall make available to employers, material safety data sheets for chemicals and other hazardous substances, containing detailed essential information regarding their identity, supplier, classification of hazards, safety precautions and emergency procedures.

(2) A supplier of hazardous chemicals shall ensure that revised labels and chemical safety data sheets are prepared and provided to an employer whenever new and relevant safety and health information becomes available.

(3) Every employer shall ensure the availability at the workplace of material safety data sheets for all chemicals and other hazardous

substances in use at the premises of the employer, containing detailed essential information regarding the identity, suppliers' classification of hazards, safety precautions and emergency procedures.

**85.** (1) Every supplier of hazardous substances, whether as manufacturer, importer or distributor of hazardous substances shall ensure that containers filled with hazardous substances, are— Labelling and marking.

- (a) plainly painted, marked or labelled in a distinctive and uniform manner, with a legible, durable label indicating the hazard, and which is easily understood by persons employed; and
- (b) accompanied with instructions for the safe handling of the contents and
- (c) the measures to be taken in case of spillage or accidental exposure to persons employed.

(2) For purposes of this section, labelling in accordance with the United Nations Labelling system shall be adequate.

(3) Every supplier of chemical substances which have not been classified in accordance with subsection (1) shall identify the chemicals they supply and assess the properties of those chemicals on the basis of a search of available information in order to determine whether they are hazardous chemicals.

(4) Every employer shall ensure that all chemicals used at a workplace are labelled or marked and that chemical safety data sheets have been provided and are made available to employees and their representatives.

(5) It shall be the duty of an employer who has received chemicals for which chemical safety data sheets have not been provided or which have not been labelled or marked as required, to obtain the relevant information from the supplier or from other reasonably available sources.

(6) An employer who uses chemicals referred to in subsection (5) without the said information commits an offence.

(7) Every employer shall ensure that only chemicals, which are classified in accordance with section 86 or identified and assessed to determine whether they are hazardous on the basis of a search of information available, and labelled or marked in accordance with subsection 86 (1) (b) are used, and that any necessary precautions are

taken when they are used.

(8) Every employer shall maintain a record of hazardous chemicals used at the workplace, cross-referenced to the appropriate chemical safety data sheets, which record shall be accessible to all employees concerned and their representatives.

Classification of hazardous chemicals and substances.

**86.** (1) Every supplier of chemicals whether as a manufacturer, importer or distributor shall ensure that all chemicals are—

- (a) classified according to their characteristics, properties such as toxicity, chemical, physical, corrosive and irritant; allergenic, sensitising, carcinogenic teratogenic and mutagenic, effects as well as their effect on the reproductive systems;
- (b) labelled in a way so as to easily understood by employees and other users, and so as to provide essential information regarding their classifications, the hazards they present and the safety precautions to be observed; and
- (c) marked so as to indicate their identity.

Corrosive substances.

**87.** Where corrosive substances are used and there is danger of an employee being splashed thereby, the employer shall provide for use by an employee in case of an emergency—

- (a) adequate and readily accessible means for drenching with water or any other appropriate substance; and
- (b) sufficient and suitable means of flushing the eyes, whole body or any other exposed part of the body,

conveniently situated and marked, the location of which is made known to all employees.

Exposure limits to hazardous substances.

**88.** The Minister may, after consultation with the Council, establish or adopt exposure limits on hazardous substances in the workplace so as to protect persons employed.

Control of air pollution, noise and vibration.

**89.** (1) In every workplace in which, in connexion with any process carried on, there is given off any dust or fume or other impurity of such a character and to such extent as to be likely to be injurious or offensive to the persons employed, or any substantial quantity of dust of any kind, all practicable measures shall be taken to protect the persons employed against inhalation of the dust or fume or other impurity and to prevent its accumulating in any workroom, and in particular, where the nature of the process makes it practicable, exhaust appliances shall

be provided and maintained, as near as possible to the point of origin of the dust or fume or other impurity, so as to prevent it entering the air of any workroom and the dust, fumes or impurity shall not be allowed to enter into the atmosphere without undergoing appropriate treatment to prevent air pollution or other ill-effect to life and property.

(2) No stationary internal combustion engine shall be used unless provision is made for conducting the exhaust gases from the engine into the open air and the exhaust gases shall not be allowed to enter the atmosphere without undergoing appropriate treatment so as to prevent air pollution, or other ill effect to life and property.

(3) In every workplace where the level of sound energy or vibration emitted can result in hearing impairment or be harmful to health or otherwise dangerous, all practicable measures shall be taken by the employer to ensure the elimination or control of such sound energy for purposes of protecting any person who may be exposed.

(4) In every workplace where any vibration, which is transmitted to the human body through solid structures, is harmful to health or otherwise dangerous, all practicable control, preventive and protective measures shall be taken by the employer to secure the safety and health of any such person who may be exposed to the vibration.

**90.** Where work involves exposure to air pollution, noise or vibration or any other adverse working conditions, a medical practitioner may recommend redeployment if he is of the opinion that the employee cannot continue working in that environment.

Redeployment on medical advice.

#### PART X—WELFARE-GENERAL PROVISIONS

**91.** (1) Every occupier shall provide and maintain an adequate supply of wholesome drinking water at suitable points conveniently accessible to all persons employed.

Supply of drinking water.

(2) A supply of drinking water which is not laid on shall be contained in suitable vessels, and shall be renewed at least daily, and all practicable steps shall be taken to preserve the water and vessels from contamination, and a drinking water supply whether laid on or not shall, in such cases as an occupational safety and health officer may direct, be clearly indicated as the occupational safety and health officer may require.

**92.** (1) Every occupier shall provide and maintain for the use of persons employed, adequate and suitable facilities for washing, which shall be conveniently accessible and shall be kept in a clean and orderly condition.

Washing facilities.

(2) The Director may, by certificate in writing, except from any of the requirements of subsection (1) any workplace where, by reason of the difficulty of obtaining an adequate supply of water or the fact that accommodation is restricted and adequate and suitable washing facilities are otherwise conveniently available, or such other special circumstances as may be specified in the certificate, the application of the requirement would in his opinion be unreasonable.

(3) The Minister may by rules prescribe, either generally or with respect to any class or description of workplace or with respect to the persons employed in any process, standard adequate and suitable washing facilities.

Accommodation for clothing.

**93.** Every occupier shall provide and maintain for the use of a person employed, adequate and suitable accommodation for clothing not worn during working hours.

Facilities for sitting.

**94.** Every occupier shall provide and maintain, for the use of a person employed whose work is done standing, suitable facilities for sitting, sufficient to enable the person employed to take advantage of any opportunities for resting which may occur in the course of his employment.

First-aid.

**95.** Every occupier shall provide and maintain so as to be readily accessible, a first-aid box or cupboard of the prescribed standard.

#### PART XI—HEALTH, SAFETY AND WELFARE—SPECIAL PROVISIONS

Permit to work.

**96.** (1) An employer shall issue a permit to work to any employee, likely to be exposed to hazardous work processes or hazardous working environment, including such work processes as the maintenance and repair of boilers, dock work, confined spaces, and the maintenance of machinery and equipment, electrical energy installations, indicating the necessary precautions to be taken.

(2) In this section “permit to work” means a written notice, which sets out the work to be done, the hazards involved and the precautions to be taken before the work commences in order to secure the safety and health of the employee.

Work processes which may harm persons below eighteen years.

**97.** Employer shall not allow a person below the apparent age of eighteen years to be employed at any workplace or work process, or perform work, which by its nature or the circumstances, in which it is carried out, is likely to harm the person’s safety or health.

**98.** No person under going apprenticeship or indentured learnership shall be allowed to attend to any machinery, equipment, tools, plant or process unless adequate supervision and protection against hazardous work conditions and environment is provided and maintained.

Supervision of apprentices and indentured learners.

**99.** (1) No person shall be employed at any machine or in any process, being a machine or process liable to cause ill health or bodily injury, unless he has been fully instructed as to the dangers likely to arise in connection therewith and the precautions to be observed, and—

Training and supervision of inexperienced workers.

(a) has received sufficient training in work at the machine or in the process; or

(b) is under adequate supervision by a person who has a thorough knowledge and experience of the machine or process.

(2) The training referred to in subsection (1) shall be carried out on—

(a) recruitment;

(b) transfer or change of job;

(c) the introduction of new work equipment or materials or change in equipment or materials; and

(d) introduction of new technology;

(3) The training shall be—

(a) adapted to take into account new changed risks, and

(b) repeated periodically.

(4) Every occupier shall ensure that an employee from other undertakings or establishments including contractors engaged in work at the occupier's workplace receive appropriate instructions regarding safety and health risks including emergency procedures at the workplace during their activities at the workplace and action to be taken in case of an emergency.

(5) The training referred to in sub section (4) shall not be at the expense of the employee and shall take place during working hours.

(6) Any person who fails to comply with any of the provisions of this section commits an offence and shall on conviction be liable to a

fine not exceeding two hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

Meals in certain dangerous trades.

**100.** No person shall be permitted to partake of food or drink where a poisonous or otherwise injurious substance is used so as to give rise to any dust or fume.

Protective clothing and appliances.

**101.** (1) Every employer shall provide and maintain for the use of employees in any workplace where employees are employed in any process involving exposure to wet or to any injurious or offensive substance, adequate, effective and suitable protective clothing and appliances, including, where necessary, suitable gloves, footwear, goggles and head coverings.

(2) The Director shall register safety consultants to assess the suitability and effectiveness of protective clothes and appliances.

Protection of eyes in certain processes.

**102.** (1) Every employer shall provide suitable goggles or effective screens to protect the eyes of person employed engaged in any of the processes specified in the Eighth Schedule.

(2) Every employer shall ensure that where in any workplace electric arc welding is carried on, effective provision is made, by screening or otherwise, to prevent employees, other than employees engaged in the welding process, being exposed to the electric arc flash.

Medical surveillance.

**103.** (1) Where the Minister is satisfied that—

- (a) cases of illness have occurred which he has reason to believe may be due to the nature of the process or other conditions of work;
- (b) by reason of changes in any process or in the substances used in any process or, by reason of the introduction of any new process or new substance for use in a process, there may be risk of injury to the health of a worker engaged in the process;
- (c) there may be risk of injury to the health of workers from any substance or material brought to the industries to be used or handled therein or from any change in the conditions in the industries,

he may make regulations requiring such reasonable arrangements as may be specified in the regulations to be made for the medical surveillance and medical examination, not including medical treatment of a preventive character, of the persons or any class of persons employed.

(2) Regulations made under this section may require the medical surveillance to be carried out by persons registered by the Director, and may prescribe the qualifications and other conditions which are to be satisfied in order to be registered for the purpose of this section.

(3) Where the Minister is satisfied that any work involves a risk to the health of employees, he may make rules requiring—

- (a) medical examination of the employees before they are employed, during their employment, and after the termination of their employment; and
- (b) regular or individual examinations or surveys of health conditions from the point of view of industrial medicine and industrial hygiene.

(4) The costs of the examinations referred to in subsection (3) shall be paid by the employer.

(5) An employer shall ensure that the examination specified in this section shall take place without loss of earnings for the employees and if possible within normal working hours during their employment.

(6) An employee and former employee of the employer under this section shall be under an obligation to undergo examination in accordance with the regulations.

(7) A person who contravenes the provisions of this section or any regulation made there under commits an offence and shall, on conviction, be liable to a fine not exceeding one hundred thousand shillings or to imprisonment for a term not exceeding three months or to both.

#### PART XII—SPECIAL APPLICATIONS

**104.** (1) Where a part of a building is let off as a separate workplace, the provisions of this Act shall apply to that part of the building used for the purposes of the workplace.

Premises where part of building is separate workplace.

**105.** (1) The provisions of this Act shall apply to any premises (not being premises forming part of a workplace) in which a steam boiler is used, as if the premises were a workplace and as if the person having the actual use or occupation of the premises were the occupier of a workplace.

Premises in which steam boilers are used.

(2) If at any time a steam boiler is to be used in any premises, not being premises forming part of a workplace, the occupier shall, within one month after the date upon which the boiler is first used, send to

the Director a written notice containing the particulars set out in the Ninth Schedule.

Premises in which hoists or lifts are used.

**106.** (1) The provisions of this Act shall apply to any premises (not being premises forming part of a workplace,) in which a hoist or a lift is used, as if the premises were a workplace and as if the person having the actual use or occupation of the premises were the occupier of a workplace.

(2) If at any time a hoist or a lift is to be used in any premises not being premises forming part of a workplace, the occupier shall, within one month after the date upon which the hoist or lift is first used, send to the Director a written notice of the address at which the hoist or lift is used.

Platforms erected over water.

**107.** (1) Every occupier or owner of a vessel or platform erected over water or in water shall ensure that adequate measures have been taken to protect the safety and health of persons employed on any vessel or platform and shall at all times comply with the provisions of this Act.

(2) The provisions of subsection (1) shall apply to fishing vessels, training and diving operations and other works carried in or on water, including works of engineering construction and similar operations.

#### PART XIII—OFFENCES PENALTIES AND LEGAL PROCEEDINGS

Offences.

**108.** (1) In the event of any contravention in connexion with or in relation to a workplace of the provisions of this Act, the occupier, or if the contravention is one in respect of which the owner is by or under this Act made responsible, the owner of the workplace shall, subject to this Act be guilty of an offence.

(2) In the event of a contravention by an employee of the provisions of this Act with respect to duties of employees or of a contravention by any person of any rule or order made under this Act, which expressly imposes any duty upon him, that employee shall be guilty of an offence and the occupier or owner, as the case may be, shall not be guilty of an offence by reason only of the contravention of the said provisions of this Act, or the contravention of the provision imposing the said duty, as the case may be, unless it is proved that he failed to take all reasonable steps to prevent the contravention; but this subsection shall not be taken as affecting any liability of the occupier or owner in respect of the same matter by virtue of some provision other than the provisions or provision aforesaid.

(3) If the occupier of a workplace avails himself of any special exception allowed by or under this Act and fails to comply with any

of the conditions attached to the exception, he shall be deemed to have contravened the provisions of this Act.

(4) If any persons are employed in a workplace otherwise than in accordance with the provisions of this Act, there shall be deemed to be a separate contravention in respect of each person so employed.

(5) Where an offence under this Act is committed by a company, co-operative society or other body of persons and is proved to have been committed with the consent or connivance of, or to have been facilitated by any neglect on the part of, any director, chairman, manager, secretary or other officer of the company, co-operative society or other body of persons, he, as well as the company, co-operative society or other body of persons, shall be deemed to have committed the offence and shall be liable to be proceeded against and punished accordingly.

**109.** (1) Any person who commits an offence under this Act for which no express penalty is provided shall on conviction be liable to a fine not exceeding three hundred thousand shillings or to imprisonment for a term not exceeding three months or to both.

General penalty.

(2) Where the contravention in respect of which a person is convicted is continued after the conviction, shall that person subject to the provisions of section 110, be guilty of a further offence and liable in respect thereof to a fine not exceeding ten thousand shillings for each day on which the contravention is so continued.

**110.** (1) Where the occupier or owner of workplace is convicted of an offence under this Act, the court may, in addition to or instead of imposing any penalty, order him, within the time specified in the order, to take such steps as may be specified to remedy the matters in respect of which the contravention occurred, and may, on application, extend the time so specified.

Court may order cause of contravention to be remedied.

(2) Where an order is made under subsection (1), the occupier or owner shall not be liable under this Act in respect of the continuation of the contravention during the time allowed by the court, but if, after the expiration of that time as originally specified or extended by subsequent order, the order is not complied with, the occupier or owner, as the case may be, shall be liable to a fine not exceeding ten thousand shillings for each day on which the non-compliance continues.

**111.** If any person is killed, or dies, suffers any bodily injury, in consequence of the occupier or owner of a workplace having contravened any provision of this Act, the occupier or owner of the workplace shall, without prejudice to any other penalty, be liable to a fine not exceeding one million shillings or, to imprisonment for a term

Penalty in case of death or injury.

not exceeding twelve months; and the whole or any part of the fine may be applied for the benefit of the injured person or his family or otherwise as the Minister may determine:

Provided that—

- (i) in the case of injury to health, the occupier or owner shall not be liable to a penalty under this section unless the injury was caused directly by the contravention; and
- (ii) the occupier or owner shall not be liable to a penalty under this section if a charge against him under this Act in respect of the act or default by which the death or injury was caused has been heard and dismissed before the death or injury occurred.

Forgery, false  
declaration, etc.

**112.** A person who—

- (a) forges or counterfeits any certificate required by, under or for the purposes of this Act;
- (b) gives or signs any certificate knowing it to be false in any material particular;
- (c) knowingly utters or makes use of any forged, counterfeited or false certificate;
- (d) knowingly utters or makes use of, as applying to any person, any certificate which does not so apply;
- (e) personates any person named in any certificate;
- (f) falsely pretends to be an occupational safety and health officer;
- (g) willfully connives at any counterfeiting, giving, signing, uttering, making use, personating or pretending as aforesaid;
- (h) wilfully makes a false entry in any register, notice, certificate or document required by, under or for the purposes of this Act to be kept, served or sent;
- (i) wilfully makes or signs a false declaration required by, under or for the purposes of this Act;
- (j) knowingly makes use of any such false entry or declaration,

commits an offence and shall on conviction be liable to a fine not exceeding two hundred thousand shillings or to imprisonment for a term not exceeding six months or to both.

**113.** Where an act or default for which an occupier or owner of a workplace is liable under this Act is in fact the act or default of an agent, servant, worker or other person, that agent, servant, worker or other person shall be deemed to have committed the offence and shall be liable to the like penalty as if he were the occupier or owner, as the case may be.

Penalty on persons committing offence for which occupier is liable.

**114.** (1) Where the occupier or owner of a workplace is charged with an offence under this Act, he shall be entitled, upon a charge duly made by him and on giving to the prosecution not less than three days' notice in writing of his intention, to have any other person whom he charges as the actual offender (whether or not that person is his agent or servant) brought before the court at the time appointed for hearing the charge; and if, after the commission of the offence has been proved, the occupier or owner of the workplace proves to the satisfaction of the court—

Exemption of occupier or owner on conviction of actual offender.

- (a) that he has used all due diligence to enforce the execution of this Act and of any relevant order or rule made hereunder;
- (b) that the said other person committed the offence in question without his knowledge, connivance or wilful default,

that other person shall be convicted of the offence and the occupier or owner shall not be guilty of the offence, and the person so convicted shall, in the discretion of the court, also be liable to pay any costs incidental to the proceedings.

(2) The prosecution shall have the right in any case to cross-examine the occupier or owner if he gives evidence and any witnesses called by him in support of his charge, and to call rebutting evidence.

(3) When it is made to appear to the satisfaction of an occupational safety and health officer at the time of discovering an offence—

- (a) that the occupier or owner, as the case may be of the workplace has used all due diligence to enforce the execution of this Act;
- (b) the person who committed the offence; and
- (c) that it has been committed without the knowledge, connivance or wilful default of the occupier or owner and

in contravention of his orders,

the occupational safety and health officer shall proceed against the person whom he believes to be the actual offender without first proceeding against the occupier or owner of the workplace.

Proceedings against persons other than occupiers or owners.

**115.** Where, under this Act, any person is substituted for the occupier or owner of a workplace with respect to any provisions of this Act, any order, summons, notice or proceeding which, for the purpose of any of those provisions, is, by or under this Act, required or authorized to be served on or taken in relation to the occupier or owner is hereby required or authorized, as the case may be, to be served on or taken in relation to that person.

Prosecution of offences.

**116.** (1) All offences under this Act shall be prosecuted, and all fines under this Act shall be recovered in a magistrates court.

(2) In any proceedings under this Act, it shall be sufficient in the charge or information to allege that the workplace is a workplace within the meaning of this Act and to state the name of the ostensible occupier of the workplace or, where the occupier is a firm, the title of the firm; and the burden of proving that the premises are not a workplace, or that the occupier specified in the charge or information is not the occupier of the workplace, shall lie upon the person alleging such fact.

(3) Where any offence is committed under this Act by reason of a failure to carry out an examination, make a report or do any other thing at or within a time specified by this Act, the offence shall be deemed to continue until the examination is carried out or the report made, or the other thing done, as the case may be.

Special provisions as to evidence.

**117.** (1) If a person is found in a workplace at any time at which work is going on or the machinery is in motion, except during the intervals for meals or rest, he shall, until the contrary is proved, be deemed for the purposes of this Act to have been then employed in the workplace:

Provided that this subsection shall not apply to a workplace in which the workers are members of the same family dwelling there.

(2) Where any entry is required by this Act to be made in the general register or in any other register or record, the entry made by the occupier of a workplace or on his behalf shall, as against him, be admissible as evidence of the facts therein stated, and the fact that any entry so required with respect to the observance of any provision of this Act has not been made shall be admissible as evidence that that provision has not been observed.

**118.** (1) Any document, including any summons or order, required or authorized to be served under this Act may be served— Service of documents.

- (a) on any person, by delivering it to him, or by leaving it at, or sending it by registered post to, his residence or place of business;
- (b) on any firm, by delivering it to any partner of the firm, or by leaving it at, or sending it by registered post to, the office of the firm;
- (c) on the owner or occupier of a workplace, including any such owner or occupier being a company to which the Companies Act applies or a co-operative society to which the Companies Act applies or a co-operative society to which the Co-operative Societies Act applies, in any such manner as aforesaid, or by delivering it, or a true copy thereof, to the manager, foreman or other responsible person at the workplace. Cap. 486.  
No. 12 of 1997.

(2) A document referred to in subsection (1) may be addressed, for the purpose of the service thereof on the occupier of a workplace, to “the occupier” at the proper postal address of the workplace, without further name or description.

(3) The provisions of subsections (1) and (2) shall apply, with the necessary modifications, to documents required or authorized under this Act to be sent to any person, firm, owner or occupier, and to the sending, addressing and delivery of such documents.

**119.** If by reason of an agreement between the owner and the occupier of premises, the whole or any part of which has been let as a workplace, the owner or occupier is prevented from carrying out any structural or other alterations in the premises which are necessary to enable him to comply with the provisions of this Act or in order to conform with any standard or requirement imposed by or under this Act, the owner or occupier may apply to a judge in chambers for the terms of the agreement to be set aside or modified, and the judge, after hearing the parties and any witnesses whom they may desire to call, may make such an order setting aside or modifying the terms of the agreement as he considers just and equitable in the circumstances of the case. Power to modify agreements.

**120.** Where in any premises the whole or any part of which has been let as a workplace, any structural or other alterations are required in order to comply with the provisions of this Act, or in order to conform with any standard or requirement imposed by or under this Act, and the Power to apportion expenses.

owner or occupier, as the case may be, alleges that the whole or part of the expenses of the alterations ought to be borne by the occupier or owner, the owner or occupier may apply to a judge in chambers for the expenses of the alterations to be apportioned between them; and the judge, after hearing the parties and any witnesses who they may desire to call, may make such an order concerning the expenses or their apportionment as he considers just and equitable in the circumstances of the case, regard being had to the terms of any contract between the parties, or, in the alternative, determine the lease.

#### PART XIV—MISCELLANEOUS PROVISIONS

Posting of abstract  
of Act, rules and  
notices.

**121.** (1) There shall be kept posted in a prominent position in every workplace—

- (a) the prescribed abstract of this Act;
- (b) a notice of the address of the Director and of the area occupational safety and health officer;
- (c) printed copies of any rules made under any provision of this Act which are for the time being in force in the workplace, or the prescribed abstract of such rules;
- (d) notices stating the danger or ill health that may be caused and precautionary measures to be observed in areas where persons are exposed to injurious or offensive substances; and
- (e) any other notice and document required by this Act to be posted in the workplace.

(2) The documents referred to in subsection (1) shall be in English and in such other vernacular languages as an occupational safety and health officer may direct, and if a form has been prescribed for any document, it shall be posted in that form.

(3) The occupier of a workplace who contravenes the provisions of this section commits an offence.

General register.

**122.** (1) There shall be kept in every workplace a register, in the prescribed form, called the general register, and there shall be entered in or attached to that register—

- (a) the certificate of registration of the workplace;
- (b) every other certificate issued in respect of the workplace by

the Director under this Act;

- (c) the prescribed particulars as to the washing, whitewashing, colourwashing, painting or varnishing of the workplace;
- (d) the prescribed particulars as to every accident and case of occupational disease occurring in the workplace of which notice is required to be sent to a occupational safety and health officer under the provisions of any law for the time being in force;
- (e) all reports and particulars required by any provision of this Act to be entered in or kept with the general register; and
- (f) such other matters as may be prescribed.

(2) The occupier of a workplace shall send to an occupational safety and health officer such extracts from the general register as the occupational safety and health officer may from time to time require for the purpose of the execution of his duties under this Act.

(3) The occupier of a workplace who contravenes the provisions of this section commits an offence.

**123.** (1) The general register and every other register or record kept in pursuance of this Act shall be preserved and shall be kept available for inspection by any occupational safety and health officer for at least three years, or such other period as may be prescribed for any class or description of register or record, after the date of the last entry in the register or record.

Preservation of registers and records.

(2) The Minister may, after consultation with the Council, make regulations prescribing—

- (a) the records to be kept; and
- (b) the returns to be rendered by employers and the person or persons to whom such returns shall be rendered.

**124.** (1) The occupier of every workplace, to which any of the provisions of this Act apply, shall, if so required, by an order published in the Gazette, send to the Director, at such intervals and on or before such days as may be specified in the order, a correct return showing, with respect to such day or days, or such period, as may be specified in the order, the number of persons employed in the workplace and giving such particulars as to such other matters as the order may require.

Return of persons employed.

(2) The Director may, for the purpose of facilitating the rendering of returns by occupiers under this section, arrange for the consolidation of those returns with any other relevant returns required from occupiers under any other law for the time being in force.

Approval of plans of workplace premises.

**125.** (1) No building shall be erected or converted for use as a workplace and no structural alteration and no extension shall be made to any existing workplace except in accordance with plans showing details of the proposed construction, conversion, alteration or extension, approved by the Director.

(2) Upon receipt of a written application supported by such particulars as may be prescribed for the approval of any plan described in subsection (1), the Director shall—

- (a) if he is satisfied that the plans provide for suitable premises for use of a workplace of the type proposed, issue a certificate of approval for such plans; or
- (b) if he is not satisfied, refuse to issue a certificate of approval and shall state in writing to the applicant the reasons for such refusal.

Occupational Safety and Health Fund.  
No. 5 of 2004.

**126.** (1) Notwithstanding section 26 of the Government Financial Management Act, Parliament shall appropriate moneys necessary for the establishment of a fund to be known as the Occupational Safety and Health Fund.

(2) The purpose of the fund shall be to—

- (a) secure the development and coordination of a sound and effective occupational safety and health system;
- (b) implement an effective system for the prevention of occupational accidents and diseases, ill health and damage to property at workplaces;
- (c) carry out research on occupational safety and health, including research on factors leading to occupational accidents and diseases;
- (d) develop and disseminate information materials, such as safety posters and pamphlets, newsletters and guidance notes on occupational safety and health including the holding of safety exhibitions, and awareness creation opportunities among employers employees and the general public; and

(e) promote occupational safety and health through the holding of annual safety award events for outstanding performance in safety and health among the enterprises and persons employed.

(3) There shall be paid into the Fund in respect of every workplace registered under this Act, a levy charged at the prescribed rates known as the occupational health and safety levy.

(4) The Minister may make an occupational health and safety levy order for purposes of giving effect to proposals submitted by the Council and approved by the Minister, and the order may provide for the amendment of a previous occupational health and safety levy order.

(5) The Minister may, on the advice of the Council and in consultation with the Treasury, make rules governing the efficient management and administration of the Occupational Safety and Health Fund.

(6) The Director shall, in consultation with the Council, administer the Occupational Safety and Health Fund.

**127.** (1) The Minister may, in consultation with the Council, make regulations under this Act to— Safety and health  
Regulations.

(a) prohibit exposure to hazard; or

(b) prescribe ways to prevent or minimise exposure to hazard.

(2) The Minister may, after consultation with the Council, make regulations—

(a) which are necessary or expedient in the interest of the safety and health of persons at work, or the safety and health of persons who use plant or machinery, or the protection of persons other than persons at work against risks to safety and health arising from or connected with the activities of persons at work, including regulations to provide for—

(i) the planning, layout, construction, use, alteration, repair, maintenance or demolition of buildings;

(ii) the control, the storage and use of explosives or highly flammable or otherwise dangerous substances,

(iii) the design, manufacture, construction, installation, operation, use, handling, alteration, repair, maintenance

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or conveyance of plant, machinery or health and safety equipment;

- (iv) the training, safety equipment or facilities to be provided by employers, the persons to whom and the circumstances in which they are to be provided and the application thereof;
- (v) the safety and health measures to be taken by employers or users;
- (vi) the occupational hygiene measures to be taken by employers or users;
- (vii) any matter regarding the biological monitoring or medical surveillance of employees;
- (viii) the production, processing, use, handling, storage or transport of, and the exposure of employees and other persons to, hazardous articles, substances or organisms or potentially hazardous articles, substances or organisms, including specific limits, thresholds or indices of or for such exposure;
- (ix) the performance of work in hazardous or potentially hazardous conditions or circumstances;
- (x) the measures to be taken to reduce the risk of fire breaking out in any workplace or of any such fire or smoke therefrom, spreading in any workplace;
- (xi) standard safety signs;
- (xii) the ergonomic requirements for various work situations and appliances.
- (xiii) the emergency equipment and medicine to be made available by employers, the places where such equipment and medicine are to be held, the requirements with which such equipment and medicine shall comply, the inspection of such equipment and medicine, the application of first-aid and the qualifications which persons applying first-aid shall possess;
- (xiv) the compilation by employers of safety and health directives in respect of a workplace, the matters to be dealt with in such directives and the manner in which such

directives shall be brought to the attention of employees and other persons at a workplace;

(xv) the registration of persons performing hazardous work or using or handling plant or machinery, the qualifications which the persons shall possess and the fees payable to the Director in respect of such registration;

(xvi) the accreditation, functions, duties and activities of approved inspection authorities;

(xvii) the consultations between an employer and employees on matters of health and safety;

(xviii) the provision of information by an employer or user to employees or the public on any matter to which this Act relates;

(xix) the conditions under which any employer is prohibited from permitting any person to partake of food or to smoke on or in any premises where a specified activity is carried out;

(xx) the conditions under which the manufacture of explosives and activities incidental thereto may take place;

(xxi) the fees payable under this Act.

(b) to provide for the preventive and protective measures for major hazard installations with view to protect employees and the public against the risk of major incidents;

(c) to establish committees for the purposes of this Act; and

(d) to provide for any other matter necessary or desirable for the effective carrying out of the provisions of this Act.

(4) Where the Minister is satisfied that any manufacture, machinery, plant, equipment, appliance, process or description of manual labour used in a workplace is of such a nature as to cause risk of bodily injury, or be offensive, to the workers or any class of workers, the Minister may, subject to the provisions of this Act, make such rules as are practicable to meet the necessity of the case.

(5) The rules made under subsection (4) may, without prejudice to the generality of the powers conferred by of this section—

- (a) prohibit the employment of, or modify or limit the hours of employment of, all persons or any class of persons in connexion with any manufacture, machinery, plant, equipment, appliance, process or description of manual labour;
- (b) prohibit, limit or control the use of any material or process; or
- (c) apply to provisions relating to—
  - (i) arrangements for preparing, heating, and taking of meals;
  - (ii) ambulance and first-aid arrangements;
  - (iii) rest rooms;
  - (iv) arrangement for the supervision of workers; and
  - (v) lifting of excessive weights.

(6) Any rules or regulations made under this Act may be made for a limited period and may be made subject to such conditions as the Minister deems fit, and may contain such supplemental and consequential provisions necessary for giving effect to the rules or order.

Power to direct formal investigation of accidents and cases of disease.

**128.** (1) The Minister may direct a formal investigation to be held into any accident occurring or case of disease contracted or suspected to have been contracted in a workplace, premises, place or location and of its causes and circumstances and the provisions of this section shall have effect with respect to such investigation.

(2) The Minister may appoint a tribunal of competent persons to carry out the investigation, and may appoint any person possessing legal or special knowledge to act as assessor to the investigation.

(3) The tribunal appointed under subsection (2) shall carry out the investigation in such manner and under such conditions as it may deem most effective for ascertaining the causes and circumstances of the accident or case of diseases, and for enabling the making of the report required by this section.

(4) The tribunal shall for the purpose of the investigation, have all the powers of a magistrate's court when trying information for offences under this Act, and all the powers of an occupational safety and health officer under this Act, and, in addition, power—

- (a) to enter and inspect any place or building the entry or inspection of which appears to the tribunal requisite for the purposes of the investigation;
- (b) by summons signed by the chairman to the tribunal, to require the attendance of all such persons as the tribunal deems fit and to require answers or returns to such inquiries as it thinks fit to make;
- (c) to require the production of all books, papers and documents which it considers important for the purpose of the investigation; and
- (d) to administer oaths and require any person examined to make and sign a declaration of the truth of the statements made by him in his examination.

(5) Persons attending as witnesses before the tribunal shall be paid such expenses as would be paid to witnesses attending before a magistrate's court and in the case of a dispute as to the amount to be allowed, the dispute shall be referred to the registrar or a deputy registrar of the High Court who, on request signed by the tribunal, shall ascertain and certify the proper amount of the expenses.

(6) The tribunal shall make a report to the Minister stating the causes and circumstances of the accident or the occurrence of a disease and add any observations, which the tribunal deems fit to make.

(7) Any person who, without reasonable excuse, proof whereof shall lie on him, either fails, after having had the expenses, if any to which he is entitled tendered to him, to comply with any summons, order or requisition of the tribunal, or prevents or impedes the tribunal in the execution of its duty, commits an offence and shall on conviction be liable to a fine not exceeding fifty thousand shillings, and in the case of a failure to comply with a requisition for making any return or producing any documents, if the failure in respect of which he was convicted is continued after the conviction, he shall (subject to the provisions of section 115 be guilty of a further offence and liable to a fine not exceeding one thousand shillings for every day on which the failure is continued.

(8) The Minister may cause the report of the tribunal to be made public at such time and in such manner as the Minister deems fit.

**129.** (1) Subject to the provisions of subsection (2), the Factories and Other Places of Work Act is repealed.

Repeal and savings.  
Cap. 514.

(2) Notwithstanding the provisions of subsection(1)—

- (a) anything done under the provisions of the Factories and Other Places of Work Act or the Minister under the provisions of the Factories and Other Places of Work Act before the commencement of this Act shall be deemed to have been done under the provisions of this Act;
- (b) any subsidiary legislation issued before the commencement of this Act shall, as long as it is not inconsistent with this Act remain in force until repealed or revoked by subsidiary legislation under the provisions of this Act and shall, for all purposes be deemed to have been made under this Act.

(3) In the event of any conflict or inconsistency between the provisions of this Act and that of any other written law relating to occupational safety and health, the provisions of this Act shall prevail and the conflicting or inconsistent provisions of such other written law shall, to the extent of the conflict or inconsistency, be construed as superseded.

#### **FIRST SCHEDULE**

(s. 21)

#### **DANGEROUS OCCURRENCES**

1. Bursting of a revolving vessel, wheel, grindstone or grinding heel moved by mechanical power.
2. Collapse or a failure of a crane, derrick, winch, hoist or other appliance used in raising or lowering persons or goods, or any part thereof (except the breakage of chain or rope-slings), or the overturning of crane.
3. Explosion or fire causing damage to the structure of the room or place in which workers are employed or to any machine or plant contained therein, and resulting in the complete suspension of ordinary work in such room or place or stoppage of machinery or plant for not less than five hours, where such explosion or fire is due to the ignition of dust, gas or vapor.
4. Electrical short circuit or failure of electrical machinery plant or apparatus, attended by explosion or fire are causing structural damage is thereto and involving its stoppage or disuse for not less than five hours.
5. Explosion or fire affecting any room in which persons are employed

and causing complete suspension of ordinary work therein for not less than twenty-four hours.

6. Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
7. The explosion of any steam boiler, failure of fire tubes of steam tubes or furnace collapse or fusible plug.
8. Accidental or otherwise, escape or leakage of dangerous or toxic gases, fumes, liquid or substances injurious to health.

## SECOND SCHEDULE

(s. 22)

### PRESCRIBED OCCUPATIONAL DISEASES

Description of disease or injury	Nature of occupation
Poison by:	Any occupation involving
1. Lead or a compound of lead	The use or handling of or, exposure to the fumes, dust or vapour of, lead or a compound of lead, or substance containing lead.
2. Manganese or a compound of manganese	The use or handling of, or exposure to the fumes, dust or the vapour of manganese or a compound, or a substance containing manganese.
3. Phosphorus or phosphine or poisoning due to the anti-cholinesterase action of organic phosphorus compounds.	The use or handling of, or exposure to the fumes, dust or vapour of, phosphorus or a substance containing for phosphorus.
4. Arsenic or compound of arsenic	The use of, handling of, or exposure to the fumes, dust or vapour of, arsenic, or a substance containing arsenic.
5. Mercury or a compound of mercury	The use or handling of, or exposure to the fumes, dust or vapour of, mercury or a compound of mercury or substance containing mercury.

6. Carbon bisulphide	The use or handling of, or exposure to the fumes, dust or vapour of, carbon bisulphide, or substance training cub on bisulphide
7. Benzene or a homologue of benzene	The use or handling of, or exposure to the fumes of, or vapour containing benzene or any of its homologues.
8. A nitro- or amino- or chloro-derivative of benzene or a homologue of benzene or poisoning by nitro-chloro-benzene.	The use or handling of, or exposure to the fumes of, or vapour containing a nitro- or amino- or chloro-derivative benzene or nitrochlorobenzene.
9. Dinitrophenol or a homologue or by substituted dinitrophenols or by the salts of such substances	The use or handling of, or exposure to the fumes of, or vapour containing dinitrophenol or a homologue or substituted dinitrophenols or the salts of such substances.
10. Tetrachloroethane	The use or handling of, or exposure to the fumes of, or vapour containing, tetrachloroethane.
11. Tri-cresylphosphate	The use or handling of, or exposure to the fumes of, or vapour containing tricresylphosphate.
12. Tri-phenylphosphate	The use or handling of, or exposure to the fumes of, or vapour containing triphenylphosphate.
13. Diethylene dioxide (dioxan )	The use or handling of, or exposure to the fumes of, or vapour containing diethylene dioxide (dioxan).
14. Methyl bromide	The use or handling of, or exposure to the fumes of, or vapour containing methylbromide.
15. Chlorinated naphthalene	The use or handling of, or exposure to the fumes of, or vapour containing chlorinated naphthalene.
16. Nickel carbonyl	Exposure to nickel carbonyl gas.
17. Nitrous fumes	The use or handling of nitric acid or exposure to nitrous fumes.
18. <i>Gonioma Kamassi</i> (African Boxwood)	The manipulation gonioma Kamassi or any process in or incidental to the manufacture of articles there from.

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| 19. Anthrax   | The handling of wool, hair, bristles, hides or skins or other animal products or residues, or contact with animals infected with anthrax   |
| 20. Glanders  | Contact with equine animals or their carcasses   |
| 21.(a) Infection by leptospira icterohaemorrhagiae;   | Work in places which are, or are liable to be, infected by rats  |
| (b) infection by leptospira canilola  | Work at dog kennels or the care or handling of dogs  |
| 22. (a) Dystrophy of the cornea (including a ulceration of the corneal surface)   | The use of, handling of, or exposure to arsenic, tar, white, bitumen, mineral oil (including kerosene), soot or any compound product (including quinone or hydroquinone), or residue of any of these substances. |
| (b) localized new growth of the skin, papillomatus or keratotic   |  |
| (c) Squamous-celled carcinoma of the skin due in any case to arsenic, tar, pitch, bitumen, mineral oil (including kerosene), soot or any compound product (including quinone or hydro-quinone or residue of any of these substances). |  |
| 23. Inflammation, ulceration or malignant disease of the skin or subcutaneous tissues or of the bones or blood dyscrasia, or cataract due to electromagnetic radiations (other than radiant heat), or ionizing particles.             | Exposure to electromagnetic radiations other than radiant heat or to ionizing particles.   |
| 24. Heat cataract   | Frequent or prolonged exposure to rays from molten or red-hot materials.   |
| 25. Decompression sickness  | Subjection to compressed or rarefied air.  |
| 26. Cramps of the hand or fore arm due to repetitive movements.   | Prolonged periods of handwriting, typing or other repetitive movements of the fingers or arm.  |
| 27. Subcutaneous cellulitis of the hand (beat hand ) Manual labour causing severe or prolonged friction or pressure on the hand.  |  |

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| 28. Bursitis or subcutaneous cellulitis arising at or about the knee due to severe or prolonged external friction or pressure at or about the knee (beat knee)     | Manual labour causing severe external friction or pressure at or about the knee.  |
| 29. Bursitis or subcutaneous cellulitis arising at or about the elbow due to severe or prolonged external friction or pressure at or about the elbow (beat elbow). | Manual labour or frequent or repeated movement of the hands or wrist.   |
| 30. Traumatic inflammation of the tendon of the hand or forearm or the associated tendon sheaths.  | Manual labour, or frequent or repeated movement of the hand or wrist.   |
| 31. Poisoning by beryllium or a compound of beryllium  | The use or handling of, or exposure to the fumes, dust or vapor of beryllium or compound beryllium, a substance containing beryllium. |

32. Primary neoplasm of the epithelial lining of the urinary bladder.
- (a) Working the building in which any of the following substances is produced for commercial purposes:
- (i) Alpha-naphthylamine or beta-naphthylamine
  - (ii) Diphenyl substituted by at least one nitro- or primary amino- group or by at least one nitro- of a primary amino-group.
  - (iii) Any of the substances mentioned in subparagraph (ii) the father of ring substituted by halogeno, methyl or methoxy groups, but not by other groups.
  - (iv) The salts of any of the substances mentioned In subparagraphs (i) to (iii)
  - (v) Auramine or magnet
- (b) The use or handling of any of the substances mentioned in sub- paragraphs (i) to (iv) of paragraph (a), or work in a process in which any such substance is used or handled or the liberated.
- The maintenance or cleaning of any plant or machinery used in any such process as is mentioned in paragraph (b), or the cleaning of clothing used in any such building as is mentioned in paragraph (a) if such clothing is cleaned within the works of which the building forms part or in the laundry maintained and used solely in connection with such works.
33. Poisoning by cadmium Exposure to cadmium fumes
34. Inflammation or ulceration of the mucous membranes of the upper respiratory passages or mouth produced by dust, liquid or vapour. Exposure to dust, liquid or vapour.

35. Non- infective dermatitis of external origin (including chrome ulceration of the skin but excluding dermatitis due to ionising particles or electromagnetic radiations other than radiant heat) Exposure to dust, liquid, or vapour or any other external agent capable of irritating the skin (including friction or heat but excluding ionizing particles or electromagnetic radiations other than radiant heat)
36. pulmonary disease due to the inhalation of the dust of mouldy hay of the mouldy vegetable produce and characterized by symptoms and signs attributable to a reaction in the peripheral part of the broncho-pulmonary system, and give rise to a defect in the does exchange (farmer's lung) Exposure to the dust of mouldy hay or other mouldy vegetable produce by reason of employment—
- (a) in agriculture, horticulture or forestry;
  - (b) loading or unloading or handling in storage such hay or other vegetable matter; or handling bagasse.
37. Primary malignant neoplasm of the mesothelium (diffuse mesothelioma) of the plaura or of the peritoneum
- (a) the working or handling of asbestos or any admixture of asbestos;
  - (b) The manufacture or repair of asbestosis tiles or other articles containing or composed of asbestos;
  - (c) The cleaning of any machinery or plant used in any of the foregoing operations and of any chambers, fixtures and appliances for the collection of asbestos dust;
- Substantial exposure to the dust arising from any of the foregoing operations.
38. Adeno-carcinoma of the nasal cavity or associated air sinuses. Attendance for work in or about a building where wooden furniture is manufactured.
39. Pneumoconiosis (including silicosis and asbestosis), byssinosis. the mining, quarrying and dressing of sandstone, slate and granite; any occupation involving exposure to asbestos dust; iron and steel foundry work; steel dressing; work in the pottery industry; the manufacture of refractory products such as silica bricks; any dusty process which results in pneumoconiosis.
40. Various carcinoma. Exposure to various chemicals or substances which are known to be carcinogenic.

**THIRD SCHEDULE** (Section 27)**PROVISIONS AS TO THE CONDUCT OF BUSINESS AND  
AFFAIRS OF THE COUNCIL**

1. (1) A member of the Council, other than an *ex officio* member shall, subject to the provisions of this Schedule, hold office for a period not exceeding three years, on such terms as may be specified in the instrument of appointment, but shall be eligible for re-appointment for one further term of three years. Tenure of office.

(2) The members of the Council shall be appointed at different times so that the respective expiry dates of their terms of office fall at different times.

2. A member of the Council, other than an *ex officio* member, may— Vacation of office.

(a) at any time resign from office by notice in writing to the Minister;

(b) be removed from office by the Minister if the member—

(i) has been absent from three consecutive meetings of the Council without the permission of the chairman;

(ii) is adjudged bankrupt or enters into a composition scheme or arrangement with his creditors;

(iii) is convicted of an offence involving dishonesty or fraud;

(iv) is convicted of a criminal offence and sentenced to imprisonment for a term exceeding six months or to a fine exceeding ten thousand shillings;

(v) is incapacitated by prolonged physical or mental illness or is deemed otherwise unfit to discharge his duties as a member of the Council; or

(vii) fails to comply with the provisions of this Act relating to the safety and health of workers at an enterprise where he holds interest as owner or occupier.

3. (1) The Council shall meet not less than four times in every financial year and not more than four months shall elapse between the date of one meeting and the date of the next meeting. Meetings.

(2) Notwithstanding the provisions of subparagraph (1), the Chairman or any three other members of the Council may call a special meeting at any time where it is deemed expedient for the transaction of the business of the Council, by giving not less than seven days' written notice to the members.

(3) The members of the Council shall, at the first meeting of the Council, elect from amongst their number, a vice-chairman.

(4) Unless three quarters of the total members of the Council otherwise agree, at least fourteen days' written notice of every meeting of the Council shall be given to every member of the Council.

(5) The quorum for the conduct of the business of the Council shall be eleven members excluding the Director.

(6) The Chairman shall preside at every meeting of the Council at which he is present but, in his absence, the vice-chairman shall preside and, in his absence, the members present shall elect one of their numbers who shall, with respect to that meeting and the business transacted thereat, have all the powers of the Chairman.

(7) Unless a unanimous decision is reached, a decision on any matter before the Council shall be by a majority of votes of the members present and, in the case of an equality of votes, the chairman or the person presiding shall have a casting vote.

(8) Subject to subparagraph (5), no proceedings of the Council shall be invalid by reason only of a vacancy among the members thereof.

(9) A resolution in writing or such resolutions consisting of several documents in like form, each signed by the members of the Council, shall be as valid and effectual as if it had been passed at a meeting of the Council duly convened and held.

(10) Subject to the provisions of this Schedule, the Council may determine its own procedures and the procedure for any committee of the Council and for the attendance of any other persons at its meetings and may make standing orders, *inter alia*, in respect of the procedure for meetings and other business of the Council;

4. (1) If a member is directly or indirectly interested in any contract, proposed contract or other matter before the Council and is present at a meeting of the Council at which the contract, proposed contract or other matter is the subject of consideration, that member shall, at the meeting and as soon as practicable after the commencement thereof, disclose the fact and shall not take part in the consideration or

discussion of, or vote on, any questions with respect to the contract or other matter, or be counted in the quorum of the meeting during the consideration of the matter:

Provided that, if the majority of the members present are of the opinion that the experience or expertise of such member is vital to the deliberations of the meeting, the Council may permit the member to participate in the deliberations subject to such restrictions as it may impose but such member shall not have the right to vote on the matter in question.

(2) A disclosure of interest made under this paragraph shall be recorded in the minutes of the meeting at which it is made.

5. The Council shall cause minutes of all resolutions and proceedings of meetings of the Council to be entered in books kept for that purpose. Minutes.

#### **FOURTH SCHEDULE** (s. 43 and 44)

##### **PARTICULARS TO BE SUBMITTED BY OCCUPIER, OR INTENDING OCCUPIER OF A WORKPLACE**

1. The name of the workplace.
2. Address and location of the workplace.
3. Name of the occupier or intending occupier of the workplace.
4. The name and address of the owner of the premises or building.
5. The address to which communications relating to the workplace may be sent.
6. Nature of the work carried on, or proposed to be carried on, in the workplace.
7. The name of the manager of the workplace for the purposes of this Act.
8. The list of chemical substances used or intended to be used in the workplace, the chemical and trade name including chemical safety data sheet for each chemical substance.
9. Whether mechanical power is used or intended to be used and, if so, its nature.

10. Whether power presses are in use or intended to be used and if so, the following particulars in respect of each power press—
  - (a) type, description and distinctive number;
  - (b) country and year of manufacture;
11. Whether passenger or goods lifts are used or intended to be used and, if so, the following particulars in respect of each such lift—
  - (a) type, description and distinctive number;
  - (b) country and year of manufacture;
  - (c) date of the last thorough examination and name of the person by whom the examination was made;
  - (d) maximum permissible working load.
12. Whether steam boilers are used or intended to be used and, if so, the following particulars in respect of each such boiler—
  - (a) type, description and distinctive number;
  - (b) country and year of manufacture;
  - (c) date of the last thorough examination and name of the person by whom the examination was made;
  - (d) maximum permissible working pressure in pounds per square inch.
13. (a) Total number of persons employed, or intended to be employed, in the workplace.
  - (b) Where persons are employed, or intended to be employed, in shifts, the maximum number employed, or intended to be employed, at any one time.

**FIFTH SCHEDULE**

(s. 44)

## CERTIFICATE OF REGISTRATION OF A WORKPLACE

No. of Certificate .....

Date of issue .....

I hereby certify that the workplace named below has been duly registered in pursuance of section ..... of the Occupational Safety and Health Act.

Name of occupier .....

Address and location of workplace .....

Nature of work .....

.....  
Director, Occupational Safety and  
Health Services.

**SIXTH SCHEDULE**

(s. 66)

REGISTER OF CHAINS, ROPES LIFTING TACKLE  
AND LIFTING MACHINES

1. Name of the occupier of the workplace.
2. Address and location of the workplace.
3. Distinguishing number of mark and description sufficient to identify the chain, rope lifting tackle or lifting machine.
4. Date when the chain, rope lifting tackle, or lifting machine, was first taken into use in the workplace.
5. Date of each examination made under section 64 (1) (d) or section 65 (2), as the case may be, and the name of the person who carried out the examination.
6. Particulars of any defect found at any examination and affecting the safe working load, and of the steps taken to remedy the defect.

7. Date and number of the certificate relating to any test and examination carried out under section 64 (1) (e) or section 65 (3), as the case may be, together with the name and address of the person who issued the certificate.
8. In the case of chains and lifting tackle (except rope slings), dates of annealing or other heat treatment.

### SEVENTH SCHEDULE (s. 67 (10))

#### THE MANNER OF PREPARING A STEAM BOILER FOR EXAMINATION WHEN IT IS COLD

1. In addition to the steps required to be taken under paragraph (2) of this Schedule, the preparation of the interior and exterior of a boiler (including, where fitted, and economizer and super heater) for examination when cold under section 67 shall consist of all or any of one or more of the following steps—

- (a) the opening out, cleaning and descaling of the boiler, including the removal of doors from mudholes, manholes and handholes;
- (b) the removal of firebars;
- (c) in the case of shells type boilers, the dismantling of firebridges (if made of brick) and all furnace protective brickwork; and
- (d) the opening out for cleaning and inspection of fittings including the pressure parts of automatic controls; and
- (e) in the case of water tube boilers, the removal of drum internal fittings, and if the person making the examination may require other preparations to be made.

2. All brickwork, baffles and coverings shall be removed for the purpose of the thorough examination to the extent required by the person carrying out the examination but in any case these parts shall be removed to the extent necessary to expose headers, seams and shells of drums at least—

- (a) once in every six years in the case of a steam boiler situated in the open or exposed to the weather of damp; and
- (b) once in every ten years in the case of every other steam boiler.

**EIGHTH SCHEDULE**

(s. 102)

**PROCESSES REQUIRING PROVISION OF SUITABLE  
GOGGLES OR EFFECTIVE SCREENS**

1. Dry grinding of metals, or articles of metal, applied by hand to a revolving wheel or disc driven by mechanical power.

2. Turning (external or internal) of non-ferrous metals, or of cast iron, or of articles of such metals or such iron, where the work is done dry, other than precision turning where the use of goggles or a screen would seriously interfere with the work, or turning by means of hand tools.

3. Welding or cutting of metals by means of an electrical oxyacetylene or similar process.

4. The following processes when carried on by means of hand tools or other portable tools—

- (a) fettling of metal castings involving the remove of metal;
- (b) cutting out or cutting off (not including drilling or punching back) of cold rivets or bolts from boilers or other plant or from ships;
- (c) chipping or scaling of boilers or ships' plates;
- (d) breaking or dressing of stone, concrete or slag.

**NINTH SCHEDULE**

(s. 105)

**PARTICULARS TO BE SUBMITTED BY OCCUPIER OF  
PREMISES (OTHER THAN A WORKPLACE) IN WHICH A  
STEAM BOILER IS USE**

1. Name of the occupier of the premises.
2. Address and location of the premises.
3. Nature of the work carried on in the premises.
4. The following particulars in respect of each steam boiler in use—
  - (a) type, description and distinctive number;

- (b) country and year of manufacture;
- (c) date of the last thorough examination and name of the person by who the examination was made;
- (d) maximum permissible working pressure in pounds per square inch.

**SUBSIDIARY LEGISLATION****Rules under sections 26 and 55****THE FACTORIES (WOODWORKING MACHINERY) RULES**

L.N. 431/1959.

## PART I—PRELIMINARY

1. These Rules may be cited as the Factories (Woodworking Machinery) Rules. Citation.

2. In these Rules— Interpretation.

“circular saw” means a circular saw working in a bench (including a rack bench) for the purpose of ripping, deep cutting or cross cutting, but does not include a swing saw or other saw which is moved towards the wood;

“gauge” means the Imperial Standard Wire Gauge;

“pendulum saw” means a swing saw which is suspended from a pivot above a table, bench or other support on which wood is placed and which is operated by being pulled across such table, bench or other support;

“plain band saw” means a band saw, other than a band mill or band re-saw, the cutting portion of which runs in a vertical direction;

“planing machine” includes a machine for overhand planing, thicknessing, moulding, matching or tenoning or any two or more of these operations, but does not include a vertical spindle moulding machine;

“woodworking machine” means a circular saw, pendulum saw, plain band saw, band mill, band re-saw, planing machine, vertical spindle moulding machine, routing machine or chain mortising machine operating on wood.

3. (1) These Rules shall apply to all factories in which any woodworking machine is used. Application.

(2) If the chief inspector is satisfied in respect of any factory that, owing to the special conditions of the work or otherwise, any of the requirements of these Rules can be suspended or relaxed without danger to the persons employed therein, he may by certificate in writing (which he may at his discretion revoke) authorize such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

4. It shall be the duty of the occupier of every factory to which these Rules apply to observe Part II of these Rules; and it shall be the duty of all persons employed in every such factory to observe Part III of these Rules. Duties.

[Subsidiary]

## PART II—DUTIES OF OCCUPIERS

Floors. 5. The floor surrounding every woodworking machine shall be maintained in a good and level condition and, as far as practicable, free from chips or other loose material and shall not be allowed to become slippery.

Circular saws. 6. Every circular saw shall be fenced as follows—

(a) the part of the saw below the bench table shall be protected by two plates of metal or other suitable material, one on each side of the saw; such plates shall not be more than six inches apart and shall extend from the axis of the saw outwards to a distance of not less than two inches beyond the teeth of the saw; metal plates, if not beaded, shall be of a thickness at least equal to 14 gauge, or, if beaded, be of a thickness at least equal to 20 gauge;

(b) behind and in a direct line with the saw there shall be a riving knife, which shall be at its greatest thickness not less than the thickness of the saw blade and less than the width of the saw kerf, and which shall have a smooth surface, shall be strong, rigid and easily adjustable, and shall also conform to the following requirements—

(i) the edge of the knife nearer the saw shall form an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench;

(ii) the knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time, and at the level of the bench table the distance between the front edge of the knife and teeth of the saw shall not exceed half an inch;

(iii) for a saw of a diameter of less than twenty-four inches, the knife shall extend upwards from the bench table to within one inch of the top of the saw, and for a saw of a diameter of twenty-four inches or more shall extend upwards from the bench table to a height of at least nine inches;

(c) the top of the saw shall be covered by a strong and easily adjustable guard, with a flange at the side of the saw farthest from the fence; the guard shall be kept so adjusted that the said flange shall extend below the roots of the teeth of the saw; and the guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw.

Push-sticks for use at circular saws. 7. A suitable push-stick shall be kept available for use at the bench of every circular saw which is fed by hand, to enable the work to be carried on without unnecessary risk.

Pendulum saws. 8. The following provisions shall apply to every pendulum saw—

(a) the top half of the saw shall be completely and securely covered by sheet metal or other suitable material;

[Subsidiary]

- (b) the work table, bench or support shall be of rigid construction and shall incorporate a suitable back rail against which the stock may be rested during sawing;
- (c) there shall be provided and maintained an efficient device which automatically returns the saw to the back position when released at any point of its travel; such device shall not depend for its proper functioning on any fibre rope; the saw shall not be deemed to be in the back position until the front edge of the saw is at least one inch behind the front edge of the back rail;
- (d) when the saw is in the back position it shall be enclosed or otherwise securely guarded as far as practicable;
- (e) limit chains or other effective devices shall be provided and maintained to prevent the front edge of the saw from travelling beyond the front edge of the work table, bench or support.

9. Every plain band saw shall be guarded as follows—

Plain band saws.

- (a) both sides of the bottom pulley shall be completely encased by sheet metal or other suitable material;
- (b) the front of the top pulley shall be covered with sheet metal or other suitable material;
- (c) all portions of the blade shall be enclosed or otherwise securely guarded, except the portion of the blade between the table and the top guide.

10. (1) The blade of every band mill or band re-saw shall be enclosed or otherwise securely guarded as far as practicable.

Band mills and band re-saws.

(2) In the case of a band mill or band re-saw the cutting portion of which runs in a vertical direction—

- (a) both sides of the bottom pulley shall be completely encased by sheet metal or other suitable material; and
- (b) the front of the top pulley shall be covered with sheet metal or other suitable material.

(3) In the case of a band mill or band re-saw the cutting portion of which runs in a horizontal direction, the front of both pulleys shall be covered with sheet metal or other suitable material.

11. Every planing machine which is not mechanically fed and is intended to be used for overhand planing shall be fitted with a cylindrical cutter block.

Cutter blocks of overhand planing machines.

**[Subsidiary]**

“Bridge” guards for overhand planing machines.

12. Every planing machine intended to be used for overhand planing shall be provided with a “bridge” guard capable of covering the full length and breadth of the cutting slot in the bench and so constructed as to be easily adjusted in both a vertical and a horizontal direction.

Planing machines used for thickening, moulding, matching or tenoning.

13. Every planing machine intended to be used for thickening, moulding, matching or tenoning shall be provided with guards which shall enclose—

(a) the cutters; and

(b) the feed rollers,

as far as practicable.

Vertical spindle moulding machines and routing machines.

14. The cutter of every vertical spindle moulding machine and of every routing machine shall, whenever practicable, be provided with the most efficient guard having regard to the nature of the work which is being performed.

Jigs and holders for use at vertical spindle moulding machines and routing machines.

15. For such work as cannot be performed with an efficient guard for the cutter, the wood being worked at a vertical spindle moulding machine or routing machine shall, if practicable, be held in a jig or holder of such construction as to reduce, as far as possible, the risk of accident to the worker.

“Spikes” for use at vertical spindle moulding machines and routing machines.

16. A suitable “spike” or push-stick shall be kept available for use at the bench of every vertical spindle moulding machine and of every routing machine.

Chain mortising machines.

17. The chain of every chain mortising machine shall be provided with a guard which shall enclose the cutters as far as practicable.

Maintenance and adjustment of guards.

18. The guards and other appliances required by these Rules shall be maintained in an efficient state and shall be constantly kept in position while the machinery is in motion, except when, owing to the nature of the work being done, the use of the guards or appliances is rendered impracticable; the guards shall be so adjusted as to enable the work to be carried on without unnecessary risk.

Certain rules not to apply when other safeguards provided.

19. Rules 6, 8, 9, 10, 12 and 13 of these Rules shall not apply to any woodworking machine in respect of which it can be shown that other safeguards are provided and maintained which render the machine equally safe as it would be if guarded in the manner prescribed by these Rules.

### PART III—DUTIES OF PERSONS EMPLOYED

Duties of persons employed.

20. Every person employed on a woodworking machine shall—

(a) use and maintain in proper adjustment the guards provided in accordance with these Rules; and

[Subsidiary]

(b) use the “spikes” or push-sticks and holders provided in compliance with rules 7, 15 and 16 of these Rules,

except when, owing to the nature of the work being done, the use of the guards or appliances is rendered impracticable.

#### PART IV—DISPOSAL OF WOODWORKING MACHINERY

21. The provisions of subsection (2) of section 26 of the Act (which prohibits the sale or letting on hire of certain machines which do not comply with the provisions of that section) shall extend to any machine, being a circular saw, plain band saw, planing machine or chain mortising machine, that does not comply with the requirements of rule 6, rule 9, rule 11, rule 12, rule 13 or rule 17, as the case may be, of these Rules:

Disposal of  
woodworking  
machinery.

Provided that this rule shall not apply in the case of any circular saw, plain band saw or planing machine in respect of which it can be shown that other safeguards are provided which render it equally safe as it would be if provided with the guards and other appliances required by these Rules.

#### Order under sections 30 (2), 37 (8) and (9), 38 (5) and 39 (4)

##### THE FACTORIES (EXAMINATION OF PLANT) ORDER

G.N. 958/1951.

1. This Order may be cited as the Factories (Examination of Plant) Order.

##### PART I—PREPARATION OF STEAM BOILERS FOR EXAMINATION

2. Any person who desires that an examination of a steam boiler should be carried out for the purposes of section 37 of the Act shall provide such facilities for the examination of the interior and exterior of the boiler and for hammer testing, drilling, lifting, hydraulic testing, steam trial or other means of testing as may be required by the authorized boiler inspector carrying out the examination, and, without prejudice to the generality of the foregoing, shall cause—

- (a) the steam boiler to be thoroughly opened up and all flues and other parts to be thoroughly cleaned and scaled;
- (b) all doors of man-holes, mud-holes and hand-holes to be taken off;
- (c) brickwork, composition covering, fire-bars, fire-bridges, tubes and stays to be removed to the extent required by the authorized boiler inspector;
- (d) all junction valves, feed valves and safety valves to be taken apart and cleaned.

[Subsidiary]

## PART II—REPORTS OF RESULTS OF EXAMINATIONS

3. The report of the result of every examination of a hoist or lift, steam boiler, steam receiver or air receiver shall be in the form of, and contain the particulars specified in, forms printed and published by the Government Printer, and bearing the following respective numbers:—

(a) for hoists or lifts .. .. .	L.D. Form 210
(b) for steam boilers when cold .. .. .	L.D. Form 211
(c) for economizers when cold .. .. .	L.D. Form 212
(d) for superheaters when cold .. .. .	L.D. Form 213
(e) for steam boilers under normal steam pressure .. .. .	L.D. Form 214
(f) for steam tube ovens or steam tube hotplates .. .. .	L.D. Form 215
(g) for steam receivers .. .. .	L.D. Form 216
(h) for air receivers .. .. .	L.D. Form 217
(i) for steam receivers or air receivers under normal pressure .. .. .	L.D. Form 218

**Exceptions under section 30 (10)**

L.N. 280/1956,  
L.N. 12/1958,  
L.N. 325/1964.

The class or description of hoist or hoistway specified in the first column hereunder are excepted from the requirements of section 30 of the Act specified in the second column hereunder, subject however to the conditions and limitations set opposite thereto in the third column hereunder; and in these exceptions “hoist” and “hoistway” include “lift” and “liftway” respectively.

<i>Class or description of hoist or hoistway</i>	<i>Requirements of section 30 which shall not apply</i>	<i>Conditions or limitations</i>
1. Hoistways of pavement hoists, that is to say, hoists in the case of which the top landing is the surface of a street or public place, or of a yard or other open space where persons are required to pass.	Subsection (3), in so far as it requires the hoistway to be protected by an enclosure and gate at or above the top landing. Subsection (4), except in the case of a hoist with more than one landing other than the top landing.	The hoistway shall be securely covered or securely fenced at the top landing except when and where access is required for persons, goods or materials. Every gate shall be kept closed and fastened except when the cage or platform is at the landing.
2. Hoistways of hoists of movable type which are used for the stacking, loading or unloading of goods or materials but not for carrying persons and which do not pass through any floor.	Subsections (3) and (4).	—

[Subsidiary]

<i>Class or description of hoist or hoistway</i>	<i>Requirements of section 30 which shall not apply</i>	<i>Conditions or limitations</i>
<p>3. Hoistways of hoists not of movable type which are used for the stacking, loading or unloading of goods or materials, and which do not pass through any floor, and in the case of which the height of travel of the cage or platform exceeds five feet.</p>	<p>Subsections (3) and (4).</p>	<p>The hoistway shall, so far as is reasonably practicable, be protected at ground or floor level by an enclosure not less than 7 ft. in height and fitted with a gate or gates in connexion with which subsection (4) shall apply; and if the hoist is used for carrying persons it shall be provided with a cage.</p>
<p>4. Hoistways of hoists not of movable type which do not pass through any floor, and in the case of which the height of travel of the platform does not exceed five feet.</p>	<p>Subsections (3) and (4).</p>	<p>A gate or gates or other fittings shall be provided to prevent any person being endangered by the underside of the platform.</p>
<p>5. Hoistways of hoists used solely for lifting material directly into a machine.</p>	<p>Subsections (3) and (4).</p>	<p>—</p>
<p>6. Hoistways of hoists which are not used for carrying persons and into or from which goods or materials are not loaded or unloaded except at a height of not less than 2 ft. 9. in above the level of the floor or ground where the loading or unloading is performed.</p>	<p>Subsection (4).</p>	<p>This exception shall not apply to any gate unless there is a fixed enclosure not less than 2 ft. 9 in. in height below the bottom of the gate and reaching down to the level of the floor or ground; and every gate to which this exception does apply (i) shall be fitted with an efficient device to secure that the cage or platform cannot be raised or lowered unless the gate is closed, and will come to rest when the gate is opened, or, (ii) where it is not reasonably practicable to fit such a device, shall be kept closed and fastened except when the cage or platform is at rest at the gate.</p>
<p>7. Hoists which are not connected with mechanical power and which are not used for carrying persons, and the enclosures of the hoist-ways of such hoists.</p>	<p>Subsection (5).</p>	<p>—</p>

## [Subsidiary]

<i>Class or description of hoist or hoistway</i>	<i>Requirements of section 30 which shall not apply</i>	<i>Conditions or limitations</i>
8. Hoists mainly used for raising materials for charging lime-kilns.	Subsection (3), in so far as it requires a gate at the bottom landing; subsection (4); subsection (5); and paragraph (b) of subsection (7).	—
9. Hoists or lifts used in premises in or adjacent to and belonging to a quarry or mine, being premises in which the only process carried on is a process ancillary to the getting, dressing or preparation for sale of minerals.	All.	—
10. Hoists or lifts used solely in connexion with a building operation as defined in section 6 of the Ordinance.	All.	—
11. Hoists or lifts used solely in in connection with a work of engineering construction as defined in section 6 of the Act.	All.	—
12. Hoists used for transferring vehicles from one floor or level to another in the working of a semi-automatic car parking system operated without attendants on the parking floors or levels.	Subsections (3) and (4), except at those floors or levels where there is access for the purpose of leaving or collecting vehicles.  Subsection (5), except in so far as it relates to the counter-balance weight. Subsection (7) (b).	(1) No person shall operate or travel on the hoist unless he has been so authorized by the occupier by certificate attached to the general register.  (2) When the hoist is in motion no person shall be in such a position that he is in danger of being trapped between any part of the hoist and any fixed structure.

[Subsidiary]

**Exceptions under section 31 (1) (f)**

L.N. 281/1956.

The following classes of chain and lifting tackle are exempted from the requirements of section 31 (1) (f) as to annealing:—

1. Chains made of malleable cast iron.
2. Plate link chains.
3. Chains, rings, hooks, shackles and swivels made of steel or any non-ferrous metal.
4. Pitched chains working on sprocket or pocketed wheels.
5. Rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines.
6. Hooks and swivels having screw-threaded parts or ball bearings or other case-hardened parts.
7. Socket shackles secured to wire ropes by white metal capping.
8. Bordeaux connections.
9. Any chain or lifting tackle which has been subjected to the heat treatment known as “normalizing” instead of annealing.

## [Subsidiary]

L.N. 273/1956,

L.N. 274/1956,

L.N. 275/1956,

L.N. 223/1964,

L.N. 130/1969.

**Exceptions under section 40**

The types of steam boiler specified in the first column hereunder are excepted from the requirements of section 37 of the Act specified in the second column hereunder, subject however to the conditions and limitations set opposite thereto in the third column hereunder.

<i>Types of steam boiler</i>	<i>Requirements of section 37 which shall not apply</i>	<i>Conditions or limitations</i>
1. Electrode steam boilers.	Subsection 2 (c).	—
2. Externally fired steam boilers.	Subsection 2 (c).	—
3. Steam boilers in which steam is generated solely by means of steam or hot water under pressure passing through a pipe or coil contained in the boiler.	Subsection 2 (c).	—
4. Domestic pressure cookers designed for operation at a steam pressure not exceeding 20 pounds per square inch, and having a total internal volume not exceeding 5 imperial gallons, and (where used in a factory) complying in all respects with British Standard No. 1746 of 1951.	All.	
5. Autoclaves. 6. Dental vulcanizers. 7. Vulcanizers used for the repair of rubber tyres, except a vulcanizer connected with any other plant or capable of containing a whole tyre. 8. Steam calenders in which steam is generated by means of an immersion heater.	Subsection (2) (a) (iv).	Steam or water contained in any such boiler shall not be drawn off, nor permitted to escape while the boiler is being heated, except such steam as may escape from a safety valve, fusible plug or bursting disc, as the case may be: Provided that the use of any test cock or valve fitted at or above the normal water level for the purpose of ascertaining or adjusting the height of the water shall be deemed not to contravene this condition.
9. Autoclaves and steam calenders in which steam is generated by means of an immersion heater.	Subsection (2) (c).	—
10. Dental vulcanizers.	Subsection (2) (a) (i) and so much of subsection (8) as applies to a safety valve.	(1) Each such steam boiler shall be fitted with two suitable pressure relieving appliances to prevent the boiler being worked at a pressure greater than the maximum permissible working pressure.

[Subsidiary]

<i>Types of steam boiler</i>	<i>Requirements of section 37 which shall not apply</i>	<i>Conditions or limitations</i>
<p>11. The waste heat steam boiler operating in conjunction with the distillation unit charge heater installed at the refinery of Messrs. East African Oil Refineries Ltd., Changanwe, Mombasa.</p> <p>12. Steam tube ovens and steam tube hotplates used for the baking or heating of food.</p>	<p>Subsection (7) to the extent that it requires the steam boiler to be examined by an authorized boiler inspector at least once in every period of fourteen months.</p> <p>Subsections (2), (8).</p>	<p>(2) The appliances provided in pursuance of condition (1) shall be properly maintained, and be renewed once at least in every alternate period of 14 months.</p> <p>The steam boiler shall be examined by an authorised boiler inspector at least once in every period of twenty-six months.</p> <p>(1) In the case of an oven—</p> <p>(a) a thermometer for the purpose of indicating the temperature of the oven shall be fitted in a suitable position where it is easily visible, and shall be properly maintained; and an oven having more than one furnace or more than one baking chamber shall be fitted with at least one thermometer as aforesaid in respect of each furnace or of each baking chamber;</p> <p>(b) the ordinary maximum working temperature of the oven shall be marked in a distinctive colour on each thermometer;</p> <p>(c) the oven shall not be worked at a higher temperature than the ordinary maximum working temperature unless a certificate has been obtained from the makers, and is kept available for inspection, certifying that the oven can safely be used at a higher temperature than the ordinary maximum working temperature and specifying the conditions, including the maximum permissible working temperature, subject to which it may be so used, and unless all such</p>

[Subsidiary]

<i>Types of steam boiler</i>	<i>Requirements of section 37 which shall not apply</i>	<i>Conditions or limitations</i>
		<p>(2) In the case of a hotplate—</p> <p>(a) a correct steam pressure gauge, easily visible and properly maintained, shall be fitted to at least one of the tubes and shall be provided with an arrangement for recording the highest pressure generated in that tube at any time; and the maximum permissible working pressure shall be marked in a distinctive colour on each pressure gauge;</p> <p>(b) the hotplate shall not be worked at a higher pressure than the maximum permissible working pressure.</p> <p>(3) The brickwork surrounding the tubes in the furnace, whether of an oven or hotplate, shall be properly maintained so as to prevent excessive exposure of tubes to the fire or flame.</p> <p>(4) Accumulations of dust, soot or other deposit shall be removed by brushing or other effective means from the flues and tubes of each oven or hotplate; and in the case of an oven or hotplate fired with solid fuel such removal shall be carried out at intervals of not longer than three months.</p> <p>(5) Every tube fitted to an oven or hotplate after the 1st March, 1952, shall, before sealing up, have been properly tested by hydraulic pressure, and such a certificate may relate to tests of more than one tube, and a certificate of such test, specifying the test pressure applied and signed by the person making or supervising such test, shall be kept attached to the general register.</p> <p>(6) Instructions for working the oven or hotplate, supplied by the maker of the oven or hotplate, shall be affixed on a placard prominently displayed near the working place at the oven or hotplate:</p>

[Subsidiary]

<i>Types of steam boiler</i>	<i>Requirements of section 37 which shall not apply</i>	<i>Conditions or limitations</i>
13. Steam boilers known as "Vacomatic Boiling Pans" manufactured by James Stott & Co. (Engineers) Ltd., Vernon Works, Rayton, Near Oldham, England, being either externally fired or internally heated by electric immersion heaters.	Subsection (2) (a) (i).  Subsection (2) (a) (iv) and (2) (c).	Provided that, where it is not reasonably practicable to obtain such instructions from the actual maker of the oven or hotplate, it shall be sufficient to obtain them from a competent person engaged in the business of making steam tube ovens or steam tube hotplates, as the case may be.  Each pan shall have attached to it a bursting disc which shall be so designed as to prevent the pan being worked at a greater pressure than the maximum permissible working pressure and such bursting disc shall be renewed at intervals not exceeding 5 years.  The manufacturer's instructions for working the pan shall be affixed to a placard and prominently displayed near the working place at the pan.

The types of steam receiver specified in the first column hereunder are excepted from the requirements of section 38 of the Act specified in the second column hereunder, subject however to the conditions and limitations set opposite thereto in the third column hereunder.

L.N. 276/1956,  
L.N. 277/1956,  
L.N. 87/1964.

## PART A

<i>Types of steam receiver</i>	<i>Requirements of section 38 which shall not apply</i>	<i>Conditions and limitations</i>
1. Steam traps, steam separators or dryers, steam strainers, steam de-superheaters and oil separators.	A l l e x c e p t subsection (1).	If not so constructed as to withstand with safety the maximum pressure that can be obtained therein, shall be fitted with a suitable safety valve so adjusted as to permit the steam to escape as soon as the pressure which such receiver can withstand with safety is exceeded. Such safety valve may be fitted in the pipe connecting such receiver with the source of supply.

## [Subsidiary]

<i>Types of steam receiver</i>	<i>Requirements of section 38 which shall not apply</i>	<i>Conditions and limitations</i>
<p>2. Steam receivers of the type specified in this paragraph and used in the following industries: laundries; job dyeing; dry cleaning; and manufacture, repair, cleaning or renovating of wearing apparel—</p> <p>(a) steam-heated heads and beds of garment-pressing machines, but not including any such machine having a roll or cylinder, nor any in which the pressing operation is effected by means of a hand-operated screw;</p> <p>(b) steam-heated portable hand irons.</p> <p>3. Steam receivers of the following types—</p> <p>(a) steam-heated tools and dies, heads, moulds, beds or platens of presses, and steam-heated dies of machines used for extruding material in a plastic state, but not including such steam receivers in which the steam passages are drilled nor any presses in which the pressing operation is effected by means of a hand-operated screw;</p> <p>(b) any air heater used in conjunction with a fan; radiators (including “columnar” radiators) and tubular driers with headers.</p>	<p>All.</p>	<p>(1) (a) Every steam receiver connected to any source of steam supply by a pipe in which the maximum steam pressure which can be obtained does not exceed—</p> <p>(i) the maximum pressure specified by the maker which such receiver is constructed and maintained to withstand with safety; or</p> <p>(ii) if the maximum pressure is not so specified by the maker, the maximum pressure specified by an authorized boiler inspector after he has obtained such particulars of the construction of the receiver as may be necessary and made such examination of the receiver as is reasonably practicable,</p> <p>shall comply with conditions (2) and (3).</p> <p>(b) If the steam pressure which can be obtained in the pipe connecting a steam receiver with any source of steam supply exceeds the specified maximum pressure for the receiver ascertained in accordance with the foregoing paragraph (a), such receiver shall comply with conditions (2), (3) and (4).</p> <p>(c) The specification of the maximum pressure of every steam receiver in accordance with the foregoing paragraph (a) shall bear the signature, address and number and date of the certificate of authorization of the authorised boiler inspector so specifying, and be entered into or attached to the general register.</p> <p>(2) Every part of every steam receiver shall be of good construction, sound material and adequate strength, and free from patent defect.</p> <p>(3) Every steam receiver and its fittings shall be properly maintained.</p> <p>(4) Every such steam receiver to which this condition applies shall be fitted with—</p> <p>(a) a suitable reducing valve or other suitable automatic appliance to prevent the specified maximum pressure being exceeded; and</p>

[Subsidiary]

<i>Types of steam receiver</i>	<i>Requirements of section 38 which shall not apply</i>	<i>Conditions and limitations</i>
		<p>(b) a suitable safety valve so adjusted as to permit the steam to escape as soon as the specified maximum pressure is exceeded, or a suitable appliance for cutting off automatically the supply of steam as soon as the specified maximum pressure is exceeded; and</p> <p>(c) a correct steam pressure gauge, which must indicate the pressure of steam in the receiver in pounds per square inch; and</p> <p>(d) a suitable stop valve.</p> <p>(5) Except where only one steam receiver is in use, each steam receiver shall bear a distinctive number.</p> <p>(6) The safety valve and pressure gauge shall be fitted either on the steam receiver or on the supply pipe between the receiver and the reducing valve or other appliance to prevent the specified maximum pressure being exceeded.</p> <p>(7) Any set of receivers supplied with steam from a single pipe and forming part of a single machine may, for the purposes of the foregoing requirements, be treated as one receiver, and any other set of receivers supplied with steam through a single pipe may be treated as one receiver except that each receiver shall be fitted with a suitable stop valve: Provided that the reducing valve or other appliance to prevent the specified maximum pressure being exceeded shall be fitted on the said single pipe.</p> <p>(8) The aforesaid fittings shall be thoroughly examined by an authorized boiler inspector at least once in every period of twenty-six months and a report of the result of every such examination, containing the particulars specified in the Appendix hereunder, shall be signed by the authorized boiler inspector and thereafter entered in or attached to the general register. The report may deal with a group of similar receivers supplied with steam from the same source.</p>

[Subsidiary]

APPENDIX

Particulars of Result of Examination of Fittings of Steam Receivers of the types specified in Part A of the Exceptions from the Requirements of section 38 of the Factories Act.

- (1) Name of occupier.
- (2) Address of factory.
- (3) Receivers—
  - (a) Description of receiver or group of similar receivers supplied with steam from the same source (state the distinctive numbers of the receivers in each group).
  - (b) Maximum pressure of steam at source of supply.
  - (c) Maximum pressure which the receiver(s) is/are constructed to withstand with safety (as specified in accordance with condition (1) of the Conditions and Limitations), and by whom specified.
- (4) Fittings—
  - (a) Are all the required fittings provided, properly maintained and in good condition?
  - (b) Repairs (if any) and period within which they should be executed.
  - (c) Date of examination when cold.
  - (d) Date of examination when under normal pressure.
- (5) Name, address and number and date of the Certificate of Authorization of the authorized boiler inspector making examination.

PART B

<i>Types of steam receiver</i>	<i>Requirements of section 38 which shall not apply</i>	<i>Conditions or limitations</i>
<ol style="list-style-type: none"> <li>1. Steam receivers used in the following industries, namely, laundries, job dyeing, dry cleaning, and manufacture, repair, cleaning or renovating of wearing apparel, and being any steam-heated "form" or "shape" for finishing an individual garment or part of a garment, eg. sleeve, collar, cuff, neckband, glove or hosiery.</li> <li>2. Steam receivers of the following types in which the steam passages are drilled—                      steam-heated tools and dies, heads, moulds, beds, and platens of presses, and steam-heated dies of machines used for extruding material in a plastic state.</li> </ol>	<p>All.</p>	<ol style="list-style-type: none"> <li>1. Every part of every steam receiver shall be of good construction, sound material, adequate strength, and free from patent defect.</li> <li>2. Every steam receiver and its fittings shall be properly maintained.</li> </ol>

L.N. 278/1956,  
L.N. 279/1956.

The types of air receiver specified in the first column hereunder are excepted from the requirements of section 39 of the Act specified in the second column hereunder, subject however to the conditions and limitations set opposite thereto in the third column hereunder.

<i>Types of air receiver</i>	<i>Requirements of section 39 which shall not apply</i>	<i>Conditions or limitations</i>
<ol style="list-style-type: none"> <li>1. The type of air receiver known as the air pressure tank used in conjunction with a fire sprinkler installation.</li> <li>2. Air receivers surrounded by a coiled cooling pipe and wholly or mainly immersed in a tank containing water which are used in conjunction with Monotype Casting Machines.</li> </ol>	<p>All.</p> <p>Subsection (4).</p>	<p style="text-align: center;">—</p> <p>The maximum working pressure of the air receiver shall not exceed 20 lb. per square inch, and the capacity shall not exceed 3 cubic feet.</p>

[Subsidiary]

G.N. 974/1951,  
L.N. 666/1963.

**Order under section 50**

**THE FACTORIES (FIRST-AID) ORDER**

1. This Order may be cited as the Factories (First-Aid) Order.
2. The first-aid boxes or cupboards required by section 50 (1) of the Act to be provided and maintained in factories shall comply with the following standards—
  - (a) for factories in which the number of persons employed does not exceed ten, each first-aid box or cupboard shall contain at least—
    - (i) a copy of the first-aid leaflet (L.D. 250/1) issued by the Labour Department;
    - (ii) a sufficient number (not less than six) of small sterilized unmedicated dressings for injured fingers;
    - (iii) a sufficient number (not less than three) of medium-sized sterilized unmedicated dressings for injured hands or feet;
    - (iv) a sufficient number (not less than three) of large sterilized unmedicated dressings for other injured parts;
    - (v) a sufficient number (not less than twelve) of adhesive wound dressings of a suitable type and of assorted sizes;
    - (vi) a sufficient number (not less than two) of triangular bandages of unbleached calico, the longest side of which measures not less than fifty-one inches and each of the other sides not less than thirty-six inches;
    - (vii) a sufficient supply of adhesive plaster;
    - (viii) a sufficient supply of absorbent sterilized cotton wool, in half-ounce packets;
    - (ix) a sufficient supply of Factory Eye Drops, B.P.C.;
    - (x) a sufficient number (not less than two) of sterilized eye-pads in separate sealed packets;
    - (xi) a tourniquet;
    - (xii) a supply of safety pins;
  - (b) for factories in which the number of persons employed exceeds ten but does not exceed fifty, each first-aid box or cupboard shall contain at least—

[Subsidiary]

- (i) a copy of the first-aid leaflet (L.D. 350/1) issued by the Labour Department;
  - (ii) a sufficient number (not less than twelve) of small sterilized unmedicated dressings for injured fingers;
  - (iii) a sufficient number (not less than six) of medium-sized sterilized unmedicated dressings for injured hands or feet;
  - (iv) a sufficient number (not less than six) of large sterilized unmedicated dressings for other injured parts;
  - (v) a sufficient number (not less than twenty-four) of adhesive wound dressings of a suitable type and assorted sizes;
  - (vi) a sufficient number (not less than four) of triangular bandages of unbleached calico, the longest side of which measures not less than fifty-one inches and each of the other sides not less than thirty-six inches;
  - (vii) a sufficient supply of adhesive plaster;
  - (viii) a sufficient supply of absorbent sterilized cotton wool, in half-ounce packets;
  - (ix) a sufficient supply of Factory Eye Drops, B.P.C.;
  - (x) a sufficient number (not less than four) of sterilized eye-pads in separate sealed packets;
  - (xi) a tourniquet;
  - (xii) a supply of safety pins;
- (c) for factories employing more than fifty persons, each first-aid box or cupboard shall contain at least—
- (i) a copy of the first-aid leaflet (L.D. 250/1) issued by the Labour Department;
  - (ii) a sufficient number (not less than twenty-four) of small sterilized unmedicated dressings for injured fingers;
  - (iii) a sufficient number (not less than twelve) of medium-sized sterilized unmedicated dressings for injured hands or feet;
  - (iv) a sufficient number (not less than twelve) of large sterilized unmedicated dressings for other injured parts;
  - (v) a sufficient number (not less than thirty-six) of adhesive wound dressings of a suitable type and assorted sizes;

## [Subsidiary]

- (vi) a sufficient number (not less than eight) of triangular bandages of unbleached calico, the longest side of which measures not less than fifty-one inches and each of the other sides not less than thirty-six inches;
- (vii) a sufficient supply of adhesive plaster;
- (viii) a sufficient supply of absorbent sterilized cotton wool, in half-ounce packets;
- (ix) a sufficient supply of Factory Eye Drops, B.P.C.;
- (x) a sufficient number (not less than eight) of sterilized eye-pads in separate sealed packets;
- (xi) a tourniquet;
- (xii) a supply of safety pins;
- (d) all materials for drugs and dressings contained in first-aid boxes or cupboards shall be those designated in, and of a grade or quality not lower than the standards specified by, the British Pharmaceutical Codex including any supplement thereto;
- (e) each first-aid box or cupboard shall be plainly marked "FIRST-AID".

**Rules under section 55**

L.N. 231/1957,  
L.N. 87/1964.

**THE FACTORIES (CELLULOSE SOLUTIONS) RULES**

## PART I—PRELIMINARY

- Citation. 1. These Rules may be cited as the Factories (Cellulose Solutions) Rules.
- Interpretation. 2. In these Rules—

“cellulose cabinet” means a cabinet, booth or similar structure within which cellulose solutions or inflammable liquids are manipulated or used;

“cellulose solution” means any solution in inflammable liquid of cellulose nitrate, cellulose acetate or other cellulose compound, or of celluloid, or any other substance containing cellulose nitrate, cellulose acetate or other cellulose compound, with or without the admixture of other substances;

“cellulose space” means a room or part of a room within which cellulose solutions or inflammable liquids are manipulated or used otherwise than in a cellulose cabinet;

“cellulose store” means any room, chamber or similar structure in which cellulose solutions or inflammable liquids are stored;

“fire-resisting material” means—

- (a) properly constructed brickwork, stone or concrete-block work of not less than four and one-half inches in thickness; or
- (b) concrete of not less than three inches in thickness; or
- (c) iron or steel of not less than 16 Imperial Standard Wire Gauge in thickness; or
- (d) glass of not less than one-quarter of an inch in thickness in the centre of which wire mesh is embedded; or
- (e) for doors only, oak or teak or other wood of similar hardness of not less than one and three-quarter inches in finished thickness; or
- (f) except for cellulose stores, wood completely and securely covered on both sides with compressed asbestos of not less than three-sixteenths of an inch in thickness; or

any other material approved in writing by the chief inspector;

“inflammable liquid” means any liquid or mixture of liquids used or intended for use in connexion with cellulose solutions which has a flash point of less than one hundred degrees Fahrenheit Abel closed test at an atmospheric pressure of 14.7 pounds per square inch;

“storage tank” means a tank used for storing cellulose solutions or inflammable liquids.

3. (1) These Rules shall, subject to the exceptions hereinafter provided, apply to all factories in which cellulose solutions are used or stored. Application.

(2) Nothing in these Rules shall apply to the painting of any building, or to any process in the manufacture of artificial silk, or of explosives within the meaning of the Explosives Act. Cap. 115.

(3) Rules 6, 7 and 9 of these Rules shall not apply to any cellulose space in which cellulose solutions or inflammable liquids are not manipulated or used for more than 15 minutes on any one day.

(4) If the chief inspector is satisfied in respect of any factory or any class of process that, owing to the special conditions or special methods of work or otherwise, any of the requirements of these Rules can be suspended or relaxed without danger to the persons employed therein, or that the application of these Rules or any part thereof is for any reason impracticable, he may by certificate in writing, (which he may at his discretion revoke) authorize such suspension

## [Subsidiary]

or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

## Duties.

4. It shall be the duty of the occupier of any factory to which these Rules apply to observe Part II of these Rules; and it shall be the duty of every person employed in such a factory to observe Part III of these Rules.

## PART II—DUTIES OF OCCUPIERS

## Notice of use or storage of cellulose solutions.

5. The occupier shall not use or store cellulose solutions in any factory in which he did not use or store such solutions before the commencement of these Rules, unless and until he has given to the chief inspector fourteen clear days' notice in writing of his intention to do so, or such shorter notice as the chief inspector may agree to accept.

## Construction of cellulose cabinets, cellulose spaces and ventilating ducts.

6. (1) Every cellulose cabinet shall be completely closed except in so far as openings are necessary for the purposes of the work or for the operation of the ventilating apparatus required by rule 7 of these Rules.

(2) Every cellulose space shall be separated by enclosure from every other part of the building or room except in so far as openings are necessary for the purposes of the work or for the operation of the ventilating apparatus required by rule 7 of these Rules.

(3) Every cellulose cabinet, and all walls, partitions, doors, windows, floors, tops and ceilings enclosing or forming part of the enclosure of any cellulose space, shall be constructed of fire-resisting material:

Provided that the provisions of this paragraph shall not apply to any tops or ceilings of single-storey buildings or of top floor rooms, or any outside walls, doors or windows, other than any of the aforesaid parts of a building in respect of which the Minister specially directs that the said provisions shall apply.

(4) All ducts, trunks or casings used in connexion with the means of ventilation required by rule 7 of these Rules shall be constructed of fire-resisting material:

Provided that such ducts, trunks or casings made of iron or steel may be of a thickness less than 16 Imperial Standard Wire Gauge.

## Ventilation.

7. (1) Every cellulose cabinet or cellulose space shall be adequately ventilated by mechanical means so as to remove as completely as possible from the building any vapours of cellulose solutions or inflammable liquids, and to prevent their escape into any occupied room or work place; such ventilation shall be kept in full operation for a period of at least five minutes after the cessation of any process in the manipulation or use of cellulose solutions or inflammable liquids.

(2) Where cellulose solutions are applied by spraying apparatus, arrangements shall, as far as practicable, be made so as to render it unnecessary for the person operating the spray to be in a position between the ventilating

[Subsidiary]

outlet and the article being sprayed.

8. (1) No fire, flame, open light or other agency likely to ignite cellulose solutions or inflammable liquids or the vapours thereof shall be allowed within twenty feet of any cellulose cabinet, cellulose space, cellulose store or storage tank unless effectively separated therefrom by means of intervening fire-resisting material.

Precautions against ignition of cellulose solutions, inflammable liquids and solid residues.

(2) All heating and electrical apparatus (including lamp fittings and resistances) liable to attain a temperature of 180° Fahrenheit shall be so situated or so protected as to prevent the deposition thereon of any solid residues resulting from the manipulation or use of cellulose solutions.

9. Adequate means of escape in case of fire, including a sufficient number of safe exits not fewer than two in number, shall be provided and maintained for every room in which a cellulose cabinet is situated and for every cellulose space, and such exits shall be so constructed as to open outwards.

Means of escape in case of fire.

10. Cotton waste, cleaning rags or similar material liable to spontaneous combustion shall, after use, be deposited without delay in metal containers with covers; all such containers shall be emptied at the end of the day's work and their contents disposed of in a safe manner.

Disposal of waste materials.

11. (1) Effective steps shall be taken to remove any solid residues resulting from the manipulation or use of cellulose solutions from all cellulose cabinets and cellulose spaces, and also from all ducts, trunks, casings or fans used in connexion therewith, and such residues shall be disposed of in a safe manner.

Removal of solid residues.

(2) No such removal shall be effected by scraping with iron or steel implements.

12. All stocks of cellulose solutions or inflammable liquids shall be kept in—

Storage of cellulose solutions and inflammable liquids.

(a) fixed storage tanks of safe construction and in safe positions, each such tank being separately and effectively earthed; or

(b) metal drums, cans or similar vessels situated in cellulose stores, which shall either be constructed of fire-resisting material or be in safe positions not less than thirty feet from any occupied building and to which no unauthorized person shall be allowed to have access.

13. (1) The quantity of cellulose solutions or inflammable liquids in any workroom shall be kept as small as practicable having regard to the work carried on, and shall not, in any case, exceed the estimated requirements for one day's work; such cellulose solutions or inflammable liquids shall, when not in actual use, be kept in a metal cupboard or other receptacle at least as safe.

Cellulose solutions and inflammable liquids in workrooms.

(2) All drums, cans or similar vessels containing cellulose solutions or inflammable liquids shall be kept securely closed when the contents are not in

**[Subsidiary]**

actual use, and shall, after the contents have been expended, be removed without delay to a store constructed or situated in accordance with rule 12 of these Rules, or to some other place, outside the building, at least as safe.

## PART III—DUTIES OF PERSONS EMPLOYED

Prohibition of smoking, open lights, etc.

14. (1) No person shall smoke in any room in which a cellulose cabinet is situated, or in any cellulose space, or in any cellulose store, or within twenty feet of any cellulose store or storage tank unless he is effectively separated from the cellulose store or tank by fire resisting material.

(2) All persons employed shall observe the requirements of paragraph (1) of rule 8 of these Rules.

Disposal of waste materials.

15. Any person using cotton waste, cleaning rags or similar material shall comply with the requirements of rule 10 of these Rules.

General.

16. Every person who is engaged in the manipulation or use of cellulose solutions or inflammable liquids shall make full and proper use of the ventilating and other appliances provided for the purposes of these Rules, shall report forthwith to the occupier, manager or other responsible person any defect in the same, and shall observe such directions as may be given to him with a view to carrying out these Rules.

**THE FACTORIES (DOCKS) RULES**

## ARRANGEMENT OF RULES

## PART I — PRELIMINARY

*Rule*

- 1—Citation.
- 2—Application.
- 3—Interpretation.
- 4—Classification of ships.
- 5—Exemptions.
- 6—Duties.

## PART II—FACILITIES ON SHORE

- 7—Means of approach over dock, wharf or quay.
- 8—Lighting.
- 9—Means of rescue from drowning.
- 10—First-aid boxes and cupboards.
- 11—Stretchers.
- 12—Provision of ambulance.
- 13—Ambulance rooms.
- 14—Notices as to first-aid appliances.
- 15—Sanitary conveniences and washing facilities.
- 16—Drinking water.

## PART III—GENERAL PROVISIONS AS TO SAFETY ON BOARD SHIP

- 17—Means of access from ship to shore and shore to ship.
- 18—Means of access from ship to ship.
- 19—Means of access to holds, etc.
- 20—Lifting gear for hatch beams.
- 21—Marking of hatch coverings and hatch beams.
- 22—Maintenance of hatch beams and hatch coverings.
- 23—Provision of hand grips, etc., on hatch coverings.
- 24—Working space around hatches.
- 25—Lighting of ships.

## PART IV—LIFTING MACHINERY, PLANT AND EQUIPMENT

- 26—Lifting machinery.
- 27—Lifting tackle.
- 28—Ropes.
- 29—Competent persons.
- 30—Register of lifting machinery and lifting tackle.
- 31—Marking of safe working loads on pulley blocks.
- 32—Marking of safe working loads on slings.
- 33—Marking of safe working loads on cranes and derricks.
- 34—Fencing of machinery and plant.

[Subsidiary]

*Rule*

- 35—Special provisions regarding conveyors.
- 36—Stability of lifting appliances.
- 37—Cranes and winches—prevention of accidental descent of load.
- 38—Access to and fencing of crane platforms.
- 39—Steam cranes and winches.
- 40—Precautions with respect to the use of chains and ropes.
- 41—Pallets and cargo trays.

PART V—PROVISIONS AS TO SHIPS OF CLASSES 2 AND 3

- 42—Keeping of registers, etc., by Class 2 ships.
- 43—Requirements on first visits of Class 3 ships.

PART VI—GENERAL PRECAUTIONS IN CONDUCTING THE PROCESSES

- 44—Disposition of goods on wharf or quay.
- 45—Use of deck-stages, hand trucks, etc.
- 46—Fencing or covering of hatches.
- 47—Securing of hatch beams.
- 48—Work at intermediate decks.
- 49—Work on skeleton decks.
- 50—Stacking of cargo.
- 51—Means of escape from holds, etc.
- 52—Restrictions on use of hooks.
- 53—Use of signallers.
- 54—Overloading of machinery, and use of coupled derricks.
- 55—Drivers of cranes or winches, and signallers.
- 56—Ventilation.
- 57—Precautions where dangerous fumes liable to be present.
- 58—Protection against dust.
- 59—Provision of protective clothing.
- 60—Transport to or from ship by water.

PART VII—GENERAL DUTIES AS TO USE AND MAINTENANCE OF SAFETY  
APPLIANCES, ETC.

- 61—Prohibition of removal or interference with safety appliances.
- 62—Prohibition of removal of fencing.
- 63—Use of means of access.
- 64—Prohibition as to going on beams.
- 65—Prohibition as to riding on conveyors.

PART VIII—SPECIAL DUTIES

- 66—Duty of master as to hold which has been fumigated.
- 67—Duty of employer as to use of machinery.
- 68—Duty of employers as to means of access and lighting.
- 69—Prescribed register.

**THE FACTORIES (DOCKS) RULES**

[Subsidiary]

L.N. 306/1962.

## PART I—PRELIMINARY

1. These Rules may be cited as the Factories (Docks) Rules. Citation.
2. Save as hereinafter provided, these Rules shall apply to the process of loading, unloading, moving and handling goods in, on or at any dock, wharf or quay in any port or harbour specified in the First Schedule to these Rules, and to the processes of loading and unloading of any ship in any such port or harbour. Application.
3. In these Rules, except where the context otherwise requires— Interpretation.
- the expression “coupled derricks” has the same meaning as “married gear” and “Union Purchase”;
- “the Docks Regulations” means the Docks Regulations 1934 made under the Factory and Workshop Act 1901 of the United Kingdom, as from time to time amended; S.R. & O. 1934, No. 279.
- “hatch” means an opening in a deck used for the purpose of the processes or for trimming, or for ventilation;
- “hatchway” means the whole space within the square of the hatches, from the top deck to the bottom of the hold;
- “lifting machinery” means masts and mast stays, cranes, winches, hoists, derrick booms, derrick and mast bands, goose necks and eye bolts and all other permanent attachments to the derricks, masts and decks, used in hoisting or lowering in connexion with the processes;
- “person employed” means a person employed in the processes;
- “processes” means the processes mentioned in rule 2 of these Rules, or any of them;
- “pulley block” means pulley, block, gin and similar gear, other than a crane block especially constructed for use with a crane to which it is permanently attached;
- “plant” includes any gangway, ladder, cargo stage, deck stage, hatch covering or hatch beam;
- “ship” includes every description of vessel used in navigation not propelled by oars;
- “vessel” includes any ship or boat, or any other description of vessel used in navigation.

Classification of

4. For the purposes of these Rules, ships shall be divided into three

[Subsidiary]  
ships.

classes as follows—

Class 1. Ships registered in Kenya including such ships plying on Lake Victoria;

Class 2. Ships on board of which the lifting machinery and plant complies with—

(a) the Docks Regulations; or

(b) in the case of ships registered in a country other than the United Kingdom or Kenya, regulations made by the Government of that country if they are, in the opinion of the chief inspector, substantially equivalent to these Rules; or

(c) in the case of ships registered in a country in which no regulations in the matter have been made by the Government thereof, regulations made by any corporation or association for the survey of ships recognized for that purpose by the Government of that country if they are, in the opinion of the chief inspector, substantially equivalent in their requirements to these Rules; and

Class 3. All other ships.

Exemptions.

5. (1) Nothing in rule 19 (2) and (3) and nothing in Part IV of these Rules shall apply to machinery and plant carried on board—

(a) a ship of Class 2; or

(b) a ship of Class 3 visiting a Kenya port for the first and second time after the commencement of these Rules:

Provided that this exemption shall not apply on the occasion of the second visit if the period between the aforesaid visits exceeds six weeks.

(2) Nothing in Parts III to VIII inclusive of these Rules shall apply to the unloading of fish from a ship employed in the catching of fish.

(3) Nothing in rules 17, 18, 19, 20, 21, 23, 24, 46 (1) and 64 of these Rules shall apply to a barge or lighter.

(4) Nothing in these Rules shall apply to the loading or unloading of naval ships when such loading or unloading is undertaken solely by members of the armed forces.

Duties.

6. (1) It shall be the duty of the person having the general management and control of a dock, wharf, or quay to comply with Part II of these Rules:

Provided that—

[Subsidiary]

- (i) if any other person has the exclusive right to occupation of any part of the dock, wharf or quay, and has the general management and control of such part, the duty in respect of that part shall devolve upon that other person; and
- (ii) it shall be the duty of the employer of the persons employed to comply with rule 16 of these Rules in so far as they apply to persons employed on board a ship not lying at a wharf or quay.

(2) It shall be the duty of the owner, master, or officer in charge of a ship to comply with Part III of these Rules.

(3) In the case of machinery or plant which is—

- (a) carried on board a ship of Class 1; or
- (b) not carried on board a ship,

being machinery or plant used in the processes, it shall be the duty of the owner thereof to comply with Part IV of these Rules, and in the case of machinery or plant carried on board a ship of Class 3, it shall also be the duty of the master of such ship to comply with that Part:

Provided that it shall be the duty of the person who by himself, his agents, or workmen carries on the processes to comply with rule 36 (3) of these Rules so far as they relate to the stability of any mobile crane used by him and under his control.

(4) It shall be the duty of the master or officer in charge of a ship to comply with Part V of these Rules.

(5) It shall be the duty of every person who by himself, his agents or workmen carries on the processes, and of all agents, workmen and persons employed by him in the processes, to comply with Part VI of these Rules:

Provided that, where the processes are carried on by a stevedore or other person other than the owner of the ship, it shall be the duty of the owner, master or officer in charge of the ship to comply with rule 46 of these Rules, so far as it concerns—

- (i) any hatch not taken over by the said stevedore or other person for the purpose of the processes;
- (ii) any hatch which, after having been taken over by the said stevedore or other person for the purpose of the processes, being a hatch at which the processes have been completed or completed for the time being, has been left by the said stevedore fenced or covered as required by rule 46 of these Rules, or has been taken into use by or on behalf of the owner of the ship; and
- (iii) the covering of any hatch fitted with a mechanically operated

[Subsidiary]

cover the control of which is solely within the responsibility of the owner, master or officer in charge of the ship.

(6) It shall be the duty of all persons, whether owners, occupiers or persons employed, to comply with Part VII of these Rules.

(7) Part VIII of these Rules shall be complied with by the persons on whom the duty is placed in that Part.

#### PART II—FACILITIES ON SHORE

Means of approach over dock, wharf or quay.

7. Every regular approach over a dock, wharf or quay which persons employed have to use for going to or from a working place at which the processes are carried on and every such working place on shore shall be maintained with due regard to the safety of the persons employed; and in particular—

(a) the following parts shall, as far as is practicable having regard to the traffic and working, be securely fenced so that the height of the fence shall in no place be less than three feet, and the fencing shall be maintained in good condition ready for use—

(i) all breaks, dangerous comers, and other dangerous parts or edges of a dock, wharf or quay; and

(ii) both sides of such footways over bridges, caissons and dock gates as are in general use by persons employed, and each side of the entrance at each end of such footway for a sufficient distance which need not exceed five yards; and

(iii) the edges of all ditches, pits, dangerous openings and excavations, but not if secure covering is provided and maintained;

(b) the edge or coping of every dock, wharf or quay shall be properly maintained.

Lighting.

8. All places on shore at which persons employed are employed, and any dangerous parts of the regular road or way over a dock, wharf or quay forming the approach to any such place from the nearest highway, shall be efficiently lighted.

Means of rescue from drowning.

9. Provision for the rescue from drowning of persons employed shall be made and maintained, and shall include—

(a) a sufficient number of lifebuoys kept in readiness on the dock, wharf or quay and spaced not more than two hundred feet apart; each such lifebuoy shall be adequately protected from exposure to the weather; and

(b) effective means at or near the surface of the water, at reasonable intervals, for enabling a person immersed to support himself, which shall be reasonably adequate having regard to all the circumstances; and

[Subsidiary]

- (c) suitable vertical ladders extending from the water to the edge or coping of the dock, wharf or quay and spaced not more than one hundred and fifty feet apart (or at such greater intervals as the chief inspector may by certificate in writing approve) to enable a person to escape from the water.

10. (1) A sufficient number of first-aid boxes or cupboards of the standard set out in the Fourth Schedule to these Rules shall be provided at every working place and, if more than one is provided, at reasonable distances from each other. First-aid boxes and cupboards.

(2) Nothing except appliances or requisites for first-aid shall be kept in a first-aid box or cupboard.

(3) A first-aid box or cupboard shall be kept stocked and in good order and shall be placed under the charge of a responsible person, who shall always be readily available during working hours; and such person shall, except at docks, wharves or quays at which the total number of persons employed at any time does not exceed fifty, be a person proficient in first-aid.

11. There shall be provided and maintained at every dock, wharf or quay, and so as to be readily accessible, a sufficient number of stretchers so constructed as to enable an injured person to be raised from a hold and further transported in a safe manner. Stretchers.

12. There shall be provided for use at every dock, wharf, or quay at which the total number of persons employed at any time exceeds fifty a suitably constructed ambulance carriage, maintained in good condition, for the purpose of the removal of serious cases of accident or sickness and, if such cases have to be removed by water, a suitably equipped boat propelled by mechanical power, unless arrangements have been made for obtaining such a carriage or boat when required from a hospital or other place situated not more than three miles (or at such greater distance as the chief inspector may by certificate in writing approve) from the dock, wharf or quay and in telephonic communication therewith. Provision of ambulance.

13. (1) A suitable ambulance room shall be provided and maintained at every dock, wharf or quay at which the total number of persons employed at any time exceeds two hundred, which shall be placed under the charge of a person trained in first aid, who shall always be readily available during working hours. Ambulance rooms.

(2) The chief inspector may by certificate in writing exempt such a dock, wharf or quay from the requirements of rule 10 of these Rules relating to first-aid boxes and cupboards to such extent and subject to such conditions as he may specify in the certificate.

14. Notices shall be exhibited in prominent positions at every dock, wharf or quay stating— Notices as to first-aid appliances.

- (a) the position of each first-aid box and the place where the person in charge thereof can be found;

## [Subsidiary]

- (b) the position of each stretcher; and
- (c) the position of the ambulance carriage and boat or, where such is not provided, the position of the nearest telephone and the name and telephone number of the hospital or other place from which such carriage or boat may be obtained.

Sanitary conveniences and washing facilities.

15. There shall be provided, maintained and kept clean at every dock, wharf or quay so as to be readily accessible to the persons employed—

- (a) a sufficient number of suitable sanitary conveniences in respect of which effective provision shall, if practicable, be made to provide adequate lighting; and
- (b) adequate and suitable washing facilities.

Drinking water.

16. An adequate supply of wholesome drinking water shall be provided and maintained at suitable points conveniently accessible to all persons employed; and a drinking water supply shall, in such cases as an inspector may direct, be clearly indicated by a notice in English and in such other languages as the inspector may require.

PART III—GENERAL PROVISIONS AS TO SAFETY ON BOARD SHIP

Means of access from ship to shore and shore to ship.

17. If a ship is lying at a wharf or quay for the purpose of loading or unloading, there shall be safe means of access for the use of persons employed at such times as they have to pass from the ship to the shore or from the shore to the ship as follows—

- (a) where reasonably practicable, the ship's accommodation ladder or a gangway or a similar construction not less than twenty-two inches wide, properly secured, and fenced throughout on each side to a clear height of two feet nine inches by means of upper and lower rails, taut ropes or chains or by other equally safe means;
- (b) in other cases, a ladder of sound material and adequate length which shall be properly secured to prevent slipping:

Provided that—

- (i) nothing in this rule shall apply to cargo stages or cargo gangways if other proper means of access is provided in conformity with these Rules; and
- (ii) as regards any ship not exceeding 200 tons net registered tonnage, this rule shall not apply if and while the conditions are such that it is possible without undue risk to pass to and from the ship without the aid of any special appliances.

Means of access from ship to ship.

18. (1) If a ship is alongside any other ship, and persons employed have to pass from one to the other, safe means of access shall be provided for their

[Subsidiary]

use, unless the conditions are such that it is possible to pass from one to the other without undue risk without the aid of any special appliance.

(2) If one of such ships is a ship of relatively low freeboard, the means of access shall be provided by the ship which has the higher freeboard.

19. (1) If the depth from the level of the deck to the bottom of the hold exceeds five feet, there shall be maintained safe means of access from the deck to the hold in which work is being carried on.

Means of access to holds, etc.

(2) Save as hereinafter provided, such access shall be afforded by ladder, and by ladder cleats or cups on the coamings, and shall not be deemed to be safe—

- (a) unless the ladders between the lower decks are in the same line as the ladder from the top deck, if that is practicable having regard to the position of the lower hatch or hatches;
- (b) unless the ladders provide a foothold of a depth including any space behind the ladder of not less than  $4\frac{1}{2}$  inches for a width of 10 inches and a firm handhold;
- (c) unless the cleats or cups provided on coamings—
  - (i) provide a foothold of a depth including any space behind the cleats or cups of not less than  $4\frac{1}{2}$  inches for a width of 10 inches and a firm handhold;
  - (ii) are so constructed as to prevent a man's foot slipping off the side;
  - (iii) are placed vertically one above the other and in the same line as the ladders to which they give access;
- (d) unless the cargo is stowed sufficiently far from the ladder to leave at each rung of the ladder foothold of a depth including any space behind the ladder of not less than  $4\frac{1}{2}$  inches for a width of 10 inches and a firm handhold;
- (e) unless there is room to pass between a winch or other obstruction and the coamings at the place where the ladder leaves the deck;
- (f) if the ladder is recessed under the deck more than is reasonably necessary to keep the ladder clear of the hatchway:

Provided that such access may be afforded—

- (i) where the provision of a ladder on a bulkhead or in a trunk hatchway can be shown to be reasonably impracticable, by cleats or cups complying with the requirements of subparagraph (c) of this paragraph;

## [Subsidiary]

- (ii) by ladders or steps, separate from any hatchway or sloping from deck to deck, if such ladders or steps comply with the requirements of subparagraphs (b), (d) and (e) of this paragraph.

(3) Shaft tunnels shall be equipped with adequate handhold and foothold on each side.

(4) In the preceding paragraphs, in the case of any ship of Class 1 which is newly registered in Kenya after the commencement of these Rules, 6 inches shall be substituted for 4½ inches and 12 inches for 10 inches:

Provided that this requirement shall not come into force until such time as the chief inspector, by notice in the Gazette, so directs.

Lifting gear for hatch beams.

20. All hatch beams used for hatch covering shall have suitable gear for lifting them on and off without it being necessary for any person to go upon them to adjust such gear.

Marking of hatch coverings and hatch beams.

21. (1) All hatch coverings shall be kept plainly marked to indicate the deck and hatch to which they belong and their position therein:

Provided that this rule shall not apply in cases where all the hatch coverings of a ship are interchangeable or, in respect of marking of position, where all hatch coverings of a hatch are interchangeable.

(2) This rule shall apply to hatch beams as it applies to hatch coverings.

Maintenance of hatch beams and hatch coverings.

22. All hatch beams used for hatch coverings and all hatch coverings shall be maintained in good condition.

Provision of hand grips, etc., on hatch coverings.

23. All hatch coverings shall be provided with suitable means for lifting them on and off as follows—

(a) adequate hand grip; or

(b) if the size, weight or construction of the hatch coverings is such as to render them incapable of being lifted into and out of position by two men, such means shall consist of adequate provision for the attachment of a sling.

Working space around hatches.

24. Where the working space around a hatch is less than three feet wide, such provision shall be made as will enable persons employed to remove and replace in safety all hatch beams used for hatch covering and all hatch coverings.

Lighting of ships.

25. When the processes are being carried on—

(a) the places in the hold and on the deck where work is being carried on;

(b) the means of access provided in pursuance of rules 17 and 18 of

[Subsidiary]

these Rules; and

- (c) all parts of the ship to which persons employed may be required to proceed in the course of their employment,

shall be efficiently lighted, due regard being had to the safety of the ship and cargo, of all persons employed and of the navigation of other vessels.

PART IV—LIFTING MACHINERY, PLANT AND EQUIPMENT

26. (1) All lifting machinery shall have been tested and examined by a competent person in the manner set out in the Second Schedule to these Rules before being taken into use. Lifting machinery.

(2) All masts and mast stays, and all derricks and permanent attachment, including bridle chains, to the derrick, mast and deck, used in hoisting or lowering, shall be inspected by a competent person once in every twelve months and be thoroughly examined by a competent person once at least in every four years.

(3) All other lifting machinery shall be thoroughly examined by a competent person once at least every twelve months.

(4) For the purposes of this rule, thorough examination means a visual examination, supplemented if necessary by other means such as a hammer test, carried out as carefully as the conditions permit, in order to arrive at a reliable conclusion as to the safety of the parts examined; and, if necessary for the purpose, parts of the machines and gear must be dismantled.

27. (1) No chain, ring, hook, shackle, swivel or pulley block shall be used in hoisting or lowering unless it has been tested and examined by a competent person in the manner specified in the Second Schedule to these Rules. Lifting tackle.

(2) All chains, other than bridle chains attached to derricks or masts, and all rings, hooks, shackles and swivels, shall be effectually heat-treated under the supervision of a competent person in the manner specified in the Third Schedule to these Rules, and such heat-treatment shall be carried out at the following intervals—

- (a) half-inch and smaller chains, rings, hooks, shackles and swivels in general use, once at least in every six months;
- (b) all other chains, rings, hooks, shackles and swivels in general use, once at least in every twelve months:

Provided that—

- (i) in the case of such gear used solely on cranes and other hoisting appliances worked by hand, twelve months shall be substituted for six months in subparagraph (a), and two years for twelve months in subparagraph (b), of this paragraph; and

[Subsidiary]

(ii) where the chief inspector is of the opinion that, owing to the size, design, material or infrequency of use of any such gear or class of such gear, the requirement of this rule as to heat-treatment is not necessary for the protection of persons employed, he may by notice in the Gazette, exempt such gear or class of gear from such requirement subject to such conditions as may be specified in such certificate.

(3) All chains, other than bridle chains, attached to derricks or masts and all rings, hooks, shackles, swivels, pulley blocks, cargo trays, and similar gear, shall be inspected by a responsible person immediately before each occasion on which they are used in hoisting or lowering, unless they have been inspected within the preceding three months.

(4) All chains, rings, hooks, shackles or swivels used in hoisting or lowering which have been lengthened, altered or repaired by welding shall before being again taken into use be adequately tested and reexamined by a competent person.

Ropes.

28. (1) No rope shall be used in hoisting or lowering unless—

- (a) it is of suitable quality and free from patent defect; and
- (b) in the case of wire rope, it has been examined and tested by a competent person in the manner specified in the Second Schedule to these Rules.

(2) Every wire rope in general use for hoisting or lowering shall be properly maintained and shall be inspected by a responsible person once at least in every three months, and after any wire has broken in such rope it shall be inspected once at least in every month.

(3) No wire rope shall be used in hoisting or lowering if in any length of eight diameters the total number of visible broken wires exceeds 10 per cent of the total number of wires, or the rope shows signs of excessive wear, corrosion or other defect which, in the opinion of the person who inspects it, renders it unfit for use.

(4) A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand; and strands in all cases shall be tucked against the lay of the rope:

Provided that this rule shall not prevent the use of another form of splice or fastening which can be shown to be as efficient as that laid down in this rule.

Competent persons.

29. For the purposes of rules 26, 27 and 28 of these Rules, a person shall be deemed to be a competent person—

- (a) if he is resident in Kenya and has been authorized by the chief

[Subsidiary]

inspector by certificate in writing stating the class or classes of lifting machinery, lifting tackle or ropes which he is competent to test, heat-treat or examine; or

- (b) if he is not resident in Kenya and the chief inspector has not given notice in writing that such person is, in his opinion, not technically qualified to carry out the test, examinations or heat-treatment required by these Rules:

Provided that, as regards the examination of any lifting machinery, lifting tackle or ropes carried on board a ship, paragraph (a) of this rule shall not apply to the master or officers of the ship on board of which such lifting machinery or lifting tackle is carried.

30. (1) Certificates in the forms in the Fifth Schedule to these Rules, and containing the particulars specified in the said forms with regard to the tests, examinations, inspections or heat-treatment required under rule 26, rule 27 (1) and (2) and rule 28 (1) of these Rules, shall be obtained, and entered in or attached to the register prescribed by that Schedule before the machinery, chain, rope or other gear to which the certificate refers is subsequently taken into use in connexion with the processes:

Register of lifting machinery and lifting tackle.

Provided that, in the case of any test, examination or heat-treatment not carried out in Kenya, the requirements of this rule shall be deemed to have been complied with if a certificate prescribed under the Docks Regulations or a certificate conforming to the standard international certificate approved by the International Labour Organization or containing substantially the same particulars is entered in or attached to the register.

- (2) The prescribed register with the certificates required to be attached to it shall be kept on the premises unless some other place has been approved in writing by the chief inspector.

31. No pulley block shall be used in hoisting or lowering unless the safe working load is clearly stamped upon it.

Marking of safe working loads on pulley blocks.

32. Means shall be provided to enable any person using a chain or wire rope sling to ascertain the safe working load for such chain or sling under such conditions as it may be used, and as regards—

Marking of safe working loads on slings.

- (a) chain slings, such means shall consist of marking the safe working load in plain figures or letters upon the sling or upon a tablet or ring of durable material attached securely thereto;
- (b) wire rope slings, such means shall consist of either the means specified in paragraph (a) of this rule or a notice or notices, so exhibited as to be easily read by any person concerned, stating the safe working loads for the various sizes of wire rope slings used.

**[Subsidiary]**

Marking of safe working loads on cranes and derricks.

33. Every crane and derrick shall have the safe working load plainly marked upon it, and every shore crane if so constructed that the safe working load may be varied by the raising or lowering of the jib or otherwise, shall have attached to it an automatic indicator of safe working loads, provided that, in cases where the jib may be raised or lowered, provision on the crane of a table showing the safe working loads at the corresponding inclinations or radii of the jib shall be considered sufficient compliance.

Fencing of machinery and plant.

34. (1) All motors, cog-wheels, chain and friction gearing, shafting, live electric conductors and steam pipes shall be securely fenced so far as is practicable without impeding the safe working of the ship.

(2) The nips between the belt and the end drums of every belt conveyor shall be securely fenced.

(3) All fencing provided in pursuance of paragraphs (1) and (2) of this rule shall be of substantial construction, and shall be constantly maintained and kept in position while the parts required to be fenced are in motion or in use:

Provided that the requirements of this rule shall not apply to any parts of machinery if it can be shown that such parts are equally safe to every person employed as they would be if securely fenced.

Special provisions regarding conveyors.

35. (1) Every conveyor, including roller conveyors and chutes, used in the processes shall be of good construction, sound material and adequate strength, and shall be free from patent defect.

(2) Every conveyor driven by mechanical power shall be provided with efficient means for cutting off the power in an emergency; such means shall be provided at loading and unloading points and, where necessary, at a sufficient number of other convenient positions.

(3) Where a conveyor passes over any place where persons employed are employed, the sides of the conveyor shall be provided with adequate guards or screens to prevent the fall of goods or material, unless the conveyor is so placed, enclosed or constructed as to make the provision of such guards or screens unnecessary for the protection of the persons employed.

Stability of lifting appliances.

36. (1) Appropriate measures shall be taken to prevent the foot of a derrick being accidentally lifted out of its socket or support.

(2) Every mobile crane shall be adequately counterbalanced in order to reduce to a minimum the risk of overtuning.

(3) No mobile crane shall be used on a soft or uneven surface or on a slope in circumstances in which the stability of the appliance is likely to be affected unless adequate precautions are taken to ensure its stability.

Cranes and winches—prevention of accidental descent of load.

37. (1) Every crane or winch shall be so constructed, or shall be provided with such means, as to reduce to a minimum the risk of the accidental descent of a load while being raised or lowered; and in particular—

[Subsidiary]

(a) the lever controlling the reversing gear shall be provided with a suitable spring or other locking arrangement, unless the construction of the crane or winch is such as to render the provision of such a device unnecessary; and

(b) in the case of a crane or winch driven by an internal combustion engine or by electricity, such crane or winch shall be so constructed as to prevent; in the event of the power failing, the accidental descent of the load.

(2) Every crane or winch shall be provided with an efficient brake.

38. The driver's platform on every crane or tip driven by mechanical power shall be provided with safe means of access and every such platform from which a person is liable to fall a distance of more than four feet shall be securely fenced; and in particular, where access is by ladder—

Access to and fencing of crane platforms.

(a) the sides of the ladder shall extend to a reasonable distance beyond the platform or some other suitable handhold shall be provided; and

(b) the landing place on the platform shall be maintained free from obstruction; and

(c) in cases where the ladder is vertical and exceeds thirty feet in height, a resting place shall be provided approximately midway between the platform and the foot of the ladder.

39. Adequate measures shall be taken to prevent exhaust steam from, and so far as is practicable live steam to, any crane or winch obscuring any part of the decks, gangways, stages, wharf or quay where any person is employed in the processes.

Steam cranes and winches.

40. (1) Chains shall not be shortened by tying knots in them.

Precautions with respect to the use of chains and ropes.

(2) Suitable packing shall be provided to prevent wire ropes, fibre ropes and the links of chains coming into contact with sharp edges of loads of hard material.

41. Every pallet, cargo tray or similar appliance used in raising or lowering goods shall be of good construction, sound material and adequate strength, shall be suitable for the purpose for which it is used and shall be properly maintained.

Pallets and cargo trays.

#### PART V—PROVISIONS AS TO SHIPS OF CLASSES 2 AND 3

42. In the case of a ship of Class 2—

Keeping of registers, etc., by Class 2 ships.

(a) the following documents shall be kept on board and shall be produced on the application of an inspector—

## [Subsidiary]

- (i) a copy of the regulations applicable to the lifting machinery and plant used in the processes and carried on board the ship together with, in the case of regulations in any language other than English, an English translation thereof;
  - (ii) current certificates of test of such lifting machinery and plant made in conformity with those regulations; and
  - (iii) a register of such lifting machinery and plant as required by those regulations or as prescribed;
- (b) the register shall be properly kept and the various items of lifting machinery and plant to which it relates shall be readily identifiable therefrom;
- (c) all lifting machinery and plant used in the processes shall be maintained in accordance with the regulations applicable thereto and shall be available for inspection by an inspector at any time.

Requirements on first visits of Class 3 ships.

43. In the case of a ship of Class 3, which first visits and subsequently visits a Kenya port within a period of six weeks after the commencement of these Rules, all lifting machinery and plant used in the processes and carried on board the ship shall be of sound construction, free from patent defect, properly maintained and in all respects suitable for the purpose for which it is intended.

## PART VI—GENERAL PRECAUTIONS IN CONDUCTING THE PROCESSES

Disposition of goods on wharf of quay.

44. Where goods are placed on a wharf or quay—

- (a) a clear passage leading to the means of access to the ship required by rule 17 of these Rules shall be maintained on the wharf or quay; and
- (b) if any space is left along the edge of the wharf or quay, it shall be at least three feet wide and clear of all obstructions other than fixed structures, plant and appliances in regular use.

Use of deck-stages, hand trucks, etc.

45. (1) No deck-stage or cargo-stage shall be used in the processes unless it is soundly constructed and adequately supported and, where necessary, securely fastened.

(2) No truck shall be used for carrying cargo between ship and shore on a stage so steep as to be unsafe.

(3) Any stage which is slippery shall be made safe by the use of sand or otherwise.

Fencing or covering of hatches.

46. (1) If any hatch of a hold accessible to any person employed and exceeding five feet in depth, measured from the level of the deck in which the hatch is situated to the bottom of the hold, is not in use for the passage of goods or other material, or for trimming, and the coamings are less than two feet six inches in height, such hatch shall either be fenced to a height of three or be securely covered:

[Subsidiary]

Provided that this requirement shall not apply—

- (i) to ships not exceeding 200 tons net registered tonnage which have only one hatchway;
- (ii) to any ship during meal times or other short interruptions of these Rules.

(2) Hatch coverings shall not be used in the construction of deck or cargo stages, or for any other purpose which may expose them to damage.

(3) Hatch coverings shall be replaced on the hatches in the positions indicated by the markings made thereon in pursuance of rule 21 of these Rules.

47. (1) The beams of any hatch in use for the processes shall, if not removed, be adequately secured to prevent their displacement or the displacement of any hatch coverings supported by them. Securing of hatch beams.

(2) Hatch beams and hatch coverings shall, when they are removed from a hatch, be so stacked or secured as not to cause danger to persons passing along the deck, working in the hold or overside; and in particular, if the construction of the ship so allows, a clear working space at least three feet wide shall be maintained between hatch coverings and hatch beams which have been so removed and the side of the hatch coaming.

(3) Roller or hinged hatch covers when stowed in the vertical position shall be adequately secured by lashings or other effective means.

48. No cargo shall be loaded or unloaded by a fall or sling at any intermediate deck unless either the hatch at that deck is securely covered or a secure landing platform of a width not less than that of one section of hatch coverings has been placed across it: Work at intermediate decks.

Provided that this rule shall not apply to any process of unloading the whole of which will be completed within a period of half an hour.

49. When work is proceeding on any skeleton deck, adequate staging shall be provided unless the space beneath the deck is filled with cargo to within a distance of two feet of such deck. Work on skeleton decks.

50. Where stacking, unstacking, stowing or unstowing of cargo or handling in connexion therewith cannot be safely carried out unaided, reasonable measures to guard against accident shall be taken by shoring or otherwise. Stacking of cargo.

51. Precautions shall be taken to facilitate the escape of the workers when employed in a hold or on 'tween decks in dealing with bulk cargo. Means of escape from holds, etc.

52. (1) When the working space in a hold is confined to the square of the hatch, hooks shall not be made fast in the bands of fastenings of bales of cotton, jute, sisal, gunny bags or other similar goods, nor shall can hooks be used for Restrictions on use of hooks.

**[Subsidiary]**

raising or lowering a barrel when, owing to the construction or condition of the barrel or of the hooks, their use is likely to be unsafe.

(2) Nothing in this rule shall apply to breaking out or making up slings.

## Use of signallers.

53. When cargo is being loaded or unloaded by a fall at a hatchway, a signaller shall be employed, and where more than one fall is being worked at a hatchway a separate signaller shall be employed to attend to each fall:

Provided that this rule shall not apply in cases where a ship is being loaded or unloaded if the driver of the crane or winch working the fall has a clear and unrestricted view of those parts of the hold where work is being carried on.

## Overloading of machinery, and use of coupled derricks.

54. (1) No lifting machinery, chains or other lifting appliance shall be loaded beyond the safe working load, except that a crane may be loaded beyond the safe working load in exceptional cases to such extent and subject to such conditions as may be approved by the engineer in charge or other responsible person, if on each occasion—

(a) the written permission of the owner or his responsible agent has been obtained; and

(b) a record of the overload is kept:

Provided that, where the load upon a single sheave pulley block is attached to the pulley block instead of to the chain or rope passing round the sheave, the load on the pulley block shall be deemed for the purposes of this rule to be half the actual load.

(2) No load shall be left suspended from a crane, winch or other machine unless there is a responsible person actually in charge of the machine while the load is so left.

(3) Where two derricks are used as coupled derricks for the purpose of hoisting or lowering goods—

(a) the load shall not exceed one half of the safe working load of the derrick having the lower lifting capacity; and

(b) there shall be used, in addition to the outer guy of each of the two derricks so coupled and as nearly parallel to such outer guy as possible, a wire rope preventer guy which shall be of adequate strength and securely attached to the head of the derrick and to a suitable deck fastening.

## Drivers of cranes or winches and signallers.

55. No person who is not sufficiently competent and reliable shall be employed to drive a crane or winch, whether driven by mechanical power or otherwise, or to give signals to a driver or to attend to cargo falls on winch-ends or winch-bodies.

[Subsidiary]

56. In every hold or compartment in which cargo is being worked, effective and suitable provision shall, if necessary, be made for securing and maintaining by the circulation of fresh air the adequate ventilation of the hold or compartment.

Ventilation.

57. Where work has to be done in any hold or compartment in which dangerous fumes are liable to be present or in which there is reasonable cause to believe that the atmosphere may be deficient in oxygen to such extent as to endanger life—

Precautions where dangerous fumes liable to be present.

- (a) no person employed shall enter the hold or compartment for any purpose unless the following requirements are complied with—
  - (i) all practicable steps shall be taken to remove any fumes which may be present or, as the case may be, by ventilation or otherwise, to render the atmosphere safe and, unless it has been ascertained by a suitable test that the hold or compartment is free from dangerous fumes or is safe to enter, the person entering shall wear a belt to which there is securely attached a rope of which the free end is held by a person outside; or
  - (ii) the person entering shall wear a suitable respirator of breathing apparatus and shall, in addition, wear a belt to which there is securely attached a rope of which the free end is held a person outside; and
- (b) suitable breathing apparatus and a suitable reviving apparatus and suitable belts and ropes shall be provided and maintained so as to be readily accessible; and
- (c) a sufficient number of persons employed shall be trained and practised in the use of such apparatus and in the method of restoring respiration.

58. Where the processes give rise to any substantial quantity of dust of any kind or to dust of such a character and to such extent as to be likely to be injurious to the persons employed, all practicable measures shall be taken to protect the persons employed against the inhalation of such dust, and, if necessary, suitable masks or respirators shall be provided and maintained for the use of persons employed who are exposed to such dust.

Protection against dust.

59. Suitable protective clothing and appliances, including, where necessary, suitable gloves, footwear, goggles and head coverings, shall be provided and maintained for the use of persons employed—

Provision of protective clothing.

- (a) when engaged in handling any injurious or offensive substance; and
- (b) when working in a refrigerated space.

60. When any person employed has to proceed to or from a ship by water for the purpose of carrying on the processes, proper measures shall be taken

Transport to or from ship by water.

## [Subsidiary]

to provide for his safe transport; and vessels used for this purpose shall be in charge of a competent person, shall not be overcrowded and shall be properly equipped for safe navigation and maintained in good condition.

PART VII—GENERAL DUTIES AS TO USE AND MAINTENANCE OF SAFETY  
APPLIANCES, ETC.

Prohibition of removal or interference with safety appliances.

61. (1) No person shall, unless duly authorized or in case of necessity, remove or interfere with any fencing, gangway, gear, ladder, hatch covering, life-saving means or appliances, lights, marks, stages or other things whatsoever required by these Rules to be provided.

(2) If removed, such things shall be restored at the end of the period during which their removal was necessary by the persons last engaged in the work that necessitated such removal.

Prohibition of removal of fencing.

62. (1) The fencing required by rule 7 of these Rules shall not be removed except to the extent and for the period reasonably necessary for carrying on the work of the dock or ship, or for repairing any fencing.

(2) If removed, the fencing shall be restored forthwith at the end of that period by the person engaged in the work that necessitated its removal.

Use of means of access.

63. Every person employed shall use the means of access provided in accordance with rules 17, 18 and 19 of these Rules, and no person shall authorize or order another to use means of access other than those provided in accordance therewith.

Prohibition as to going on beams.

64. No person shall go upon the fore and aft beams or thwart-ship beams for the purpose of adjusting gear for lifting them on and off or for any other purpose in connexion with the processes, nor shall any person authorize or order another to do so.

Prohibition as to riding on conveyors.

65. No person shall ride upon any conveyor nor shall any person authorize or order another to do so.

PART VIII—SPECIAL DUTIES

Duty of master as to hold which has been fumigated.

66. The master or officer in charge of a ship shall not allow any hold or compartment to be taken into use for the purpose of the processes for the first time subsequent to such hold or compartment having been fumigated, unless a certificate, signed by a qualified person, and stating that such hold or compartment is free from dangerous fumes and is safe to enter, has been obtained and is kept available for inspection.

Duty of employer as to use of machinery.

67. No employer of persons in the processes shall allow machinery or gear to be used by such persons if he knows or has reason to believe that such machinery or gear does not comply with Part IV or Part V of these Rules, as the case may be.

68. If the persons whose duty it is to comply with rules 17, 18 and 25 of these Rules fail to do so, then it shall also be the duty of the employers of the persons employed for whose use the means of access and the lights are required to comply with the said rules within the shortest time reasonably practicable after such failure.

[Subsidiary]  
Duty of employer as to means of access and lighting.

69. The prescribed register shall, on the application of an inspector, be produced by the person in charge thereof; if it relates to the lifting machinery and other gear of a ship and is kept on the ship, it shall be produced, together with the certificate of the ship's register, by the person for the time being in charge of the ship.

Prescribed register.

### FIRST SCHEDULE

(r. 2)

#### PORTS AND HARBOURS TO WHICH THE RULES APPLY

(1) Mombasa Harbour as defined by the East African Harbour Limits and Compulsory Pilotage Order 1953 of the High Commission.

L.N. 33/1953.

(2) The port of Kisumu.

### SECOND SCHEDULE

(rr. 26 (1), 27 (1)  
and 28 (1))

#### MANNER OF TEST AND EXAMINATION BEFORE TAKING LIFTING MACHINERY AND GEAR INTO USE

1. Every winch with the whole of the gear accessory thereto (including masts, and. mast stays, derricks, goose necks, eye-plates, eye-bolts or other attachments) shall be tested with a proof load which shall exceed the safe working load as follows—

<i>Safe Working Load</i>	<i>Proof Load</i>
Up to 20 tons	25 per cent in excess.
20-50 tons	5 tons in excess.
Over 50 tons	10 per cent in excess.

The proof load shall be applied (a) by hoisting movable weights or (b) by means of a spring or hydraulic balance or similar appliance, with the derrick at an angle which shall not exceed 15 degrees to the horizontal, or, where this is impracticable, at the lowest practicable angle: the angle at which the test was made shall be stated in the certificate of test.

In the former case, after the movable weights have been hoisted, the derrick shall be swung as far as possible in both directions. In the latter case, the proof load shall be applied with the derrick swung as far as practicable first in one direction and then in the other.

[Subsidiary]

So far as possible every such test shall be carried out by means of movable weights, and no exception shall be allowed in the case of gear on new ships. In the case of replacements or renewals, however, a spring or hydraulic balance or similar appliance may be used where movable weights are not available.

Where a spring or hydraulic balance or similar appliance is used it shall be accurate, and the test shall not be regarded as satisfactory unless the indicator remains constant for a period of at least five minutes.

2. Every crane and other lifting machine with its accessory gear shall be tested with a proof load which shall exceed the safe working load as follows—

<i>Safe Working Load</i>	<i>Proof Load</i>
Up to 20 tons	25 per cent in excess.
20-50 tons	5 tons in excess.
Over 50 tons	10 per cent in excess.

The proof load shall be hoisted and swung as far as possible in both directions.

In the case of a jib-crane, if the jib has a variable radius, it shall be tested with a proof load as defined above at the maximum and minimum radii of the jib.

In the case of hydraulic cranes or hoists, where, owing to the limitation of pressure, it is impossible to hoist a load 25 per cent in excess of the safe working load, it shall be sufficient to hoist the greatest possible load.

3. Every article of loose gear (whether it is accessory to a machine or not) shall be tested with a proof load at least equal to that shown against the article in the following table—

<i>Article of Gear</i>	<i>Proof Load</i>
Chain Ring Hook Shackle Swivel	Twice the safe working load.

<i>Pulley Blocks</i>	<i>Proof Load</i>
Single Sheave Block.	Four times the safe working load.
Multiple Sheave Block with safe working load up to and including 20 tons.	Twice the safe working load.
Multiple Sheave Block with safe working load over 20 tons up to and including 40 tons.	20 tons in excess of the safe working load.

[Subsidiary]

Multiple Sheave Block with safe working load over 40 tons.      One and a half times the safe working load.

Provided that, where the chief inspector is of the opinion that, owing to the size, design, construction, material or use of any such loose gear or class of such gear, any of the above requirements are not necessary for the protection of persons employed, he may by notice in the Gazette exempt such gear or class of gear from such requirement, subject to such conditions as may be stated in the certificate.

4. After being tested as aforesaid, all machines with the whole of the gear accessory thereto and all loose gear shall be examined, the sheaves and the pins of the pulley blocks being removed for the purpose, to see that no part is injured or permanently deformed by the test.

5. In the case of wire ropes, a sample shall be tested to destruction and the safe working load shall not exceed one-fifth of the breaking load of the sample tested.

### THIRD SCHEDULE

(r. 27 (2))

#### MANNER OF HEAT-TREATMENT OF CHAINS, RINGS, HOOKS, SHACKLES AND SWIVELS

Chains, rings, hooks, shackles and swivels shall, if made of wrought iron, be annealed by being placed in a suitably constructed furnace and heated uniformly until the whole of the metal has attained a temperature between 1,100 degrees Fahrenheit (600 degrees Centigrade) and 1,200 degrees Fahrenheit (650 degrees Centigrade) and, after being so heated, allowed to cool uniformly:

Provided that, if the past history of any such gear is not known, the gear shall be normalized by being placed in a suitably constructed furnace and heated until the whole of the metal has attained a temperature between 1,750 degrees Fahrenheit (950 degrees Centigrade) and 1,830 degrees Fahrenheit (1,000 degrees Centigrade) and, after being so heated, allowed to cool uniformly.

After heat-treatment the gear shall be carefully inspected by a competent person, and details of any defects found shall be entered in the prescribed form.

### FOURTH SCHEDULE

(r. 10 (1))

#### STANDARD FOR FIRST-AID BOXES

First-aid boxes or cupboards shall comply with the following standard—

(1) each first-aid box or cupboard shall contain at least—

(a) a copy of the first aid leaflet (L.D. 250/1) issued by the Labour Department;

(b) a sufficient number (not less than 24) of small sterilized

[Subsidiary]

unmedicated dressings for injured fingers;

(c) a sufficient number (not less than 12) of medium-sized sterilized unmedicated dressings for injured hands or feet;

(d) a sufficient number (not less than 12) of large sterilized unmedicated dressings for other injured parts;

(e) a sufficient number (not less than 36) of adhesive wound dressings of a suitable type and of assorted sizes;

(f) a sufficient number (not less than 8) of triangular bandages of unbleached calico, the longest side of which measures not less than fifty-one inches and each of the other sides not less than thirty-six inches;

(g) a sufficient supply of adhesive plaster;

(h) a sufficient supply of absorbent sterilized cotton wool in half-ounce packets;

(i) a sufficient supply of Factory Eye Drops, B.P.C;

(j) a sufficient number (not less than 8) of sterilized eye-pads in separate sealed packets;

(k) a tourniquet;

(l) a supply of safety pins;

(2) all materials for drugs and dressings contained in first aid boxes or cupboards shall be those designated in, and of a grade or quality not lower than the standards specified by, the British Pharmaceutical Codex including any supplement thereto;

(3) each first aid box or cupboard shall be plainly marked "FIRST-AID"

## FIFTH SCHEDULE

### PRESCRIPTION OF REGISTER AND FORMS

1. The register shall be in the form of the register printed and published by the Government Printer—entitled "Register of Machinery, Chains, etc., and Wire Ropes" and bearing the reference "L.D.290".

2. The certificate of every test, examination or heat-treatment shall be in the form of, and contain the particulars specified in, forms printed and published by the Government Printer, being forms bearing the reference "L.D." followed by the numbers respectively set out hereunder in relation thereto, that is to say—

FIFTH SCHEDULE—*Contd*

[Subsidiary]

- (a) for the test and examination of masts and mast stays, winches, derricks and accessory gear, before being taken into use . . . . . L.D. 291
- (b) for the test and examination of cranes or hoists, and their accessory gear, before being taken into use . . . . . L.D. 292
- (c) for the test and examination of chains, rings, hooks, shackles, swivels and pulley blocks, before being taken into use . . . . . L.D. 293
- (d) for the test and examination “of wire rope, before being taken into use . . . . . L.D. 294
- (e) for the heat-treatment of chains, rings, hooks, shackles and swivels which require such treatment . . . . . L.D. 295

**Classes of gear exempted from the requirements of rule 27 as to heat-treatment, under rule 27 (2), proviso (ii), of the Factories (Docks) Rules—**

L.N. 597/1962.

- (a) chains made of malleable cast iron;
- (b) plate link chains;
- (c) chains, rings, hooks, shackles and swivels made of steel;
- (d) pitched chains;
- (e) rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines;
- (f) hooks and swivels having screw-threaded parts or ball bearing or other case-hardened parts;
- (g) bordeaux connexions,

subject to the condition that such gear shall be thoroughly examined by a competent person once at least in every twelve months, and that certificates in the form printed and published by the Government Printer bearing the reference “L.D. 296” and containing the particulars specified in the said form with regard to such examinations shall be obtained and entered in or attached to the prescribed register before the gear to which the certificate refers is subsequently taken into use in connexion with the processes.

For the purposes of this exemption, thorough examination means a visual examination, supplemented if necessary by other means, carried out as carefully as the conditions permit, in order to arrive at a reliable conclusion as to the safety of the parts examined; and if necessary for the purpose, parts of the gear must be dismantled.

[Subsidiary]

L.N. 596/1962.

FIFTH SCHEDULE—*Contd***Classes of gear exempted from the requirements of paragraph 3 of the Second Schedule, under paragraph 3 of the Second Schedule to the Factories (Docks) Rules—**

- (a) pitched chains used with hand-operated pulley blocks and rings, hooks, shackles or swivels permanently attached thereto;
- (b) hand-operated pulley blocks used with pitched chains and rings, hooks, shackles or swivels permanently attached thereto,

subject to the condition that such gear shall have been tested by a competent person with a proof load at least equal to one and a half times the safe working load.

**Order under section 60**

L.N. 405/1957,

L.N. 514/1990.

**THE FACTORIES (EXTENSION OF APPLICATION) ORDER**

1. This Order may be cited as the Factories (Extension of Application) Order.

2. The provisions of the Act hereafter in this Order mentioned shall apply to any premises (not being premises forming part of a factory or premises to which the application of the Act is extended by section 57 or section 58 of the Act) in which a hoist or lift is used, as if the premises were a factory and as if the person having the actual use or occupation of the premises were the occupier of a factory, that is to say—

- (a) Part I;
- (b) Part II;
- (c) the provisions of Part V with respect to hoists and lifts and steam boilers, steam receivers and steam containers (including the provisions as to exceptions as to hoists, lifts, steam boilers, steam receivers and steam containers), so, however, that the owner of the hoist, lift, steam boiler, steam receiver or steam container shall, instead of the person deemed to be the occupier, be responsible for any contravention of the said provisions in so far as they relate to matters within his control;
- (d) the provisions of Part V with respect to the power of a court to make orders as to dangerous conditions and practices;
- (e) the provisions of Part VII with respect to rules for health, safety and welfare;
- (f) the provisions of Part IX with respect to general registers (so far as applicable) and preservation of registers and records, subject to such modifications as may be made by rules made by the Minister, and the provisions of the said Part with respect to duties of persons employed;

[Subsidiary]

(g) the provisions of Part X with respect to powers and duties of inspectors, and to rules and orders made under the Act;

(h) Part XI;

(i) Part XII:

Provided that, where the premises are in the use or occupation of more than one person, the aforementioned provisions of the Act in so far as they relate to hoists and lifts shall apply to the premises as if the owner of the premises, instead of any other person having the actual use or occupation thereof, were the occupier.

3. If a hoist or lift is newly taken into use in any premises (not being premises forming part of a factory or premises to which the application of the Act is extended by section 57 or section 58 of the Act), the person who is for the purposes of this Order the occupier of such premises shall, not later than one month after the date upon which the hoist or lift is first used, send to the Director of Occupational Health and Safety Services a written notice of the address at which the hoist or lift is used.

**Order under section 61 (1)**

**THE FACTORIES (FORM OF ABSTRACT) ORDER**

L.N. 547/1956,  
L.N. 514/1990.

1. This Order may be cited as the Factories (Form of Abstract) Order.
2. The abstract of the Act required to be kept posted in a prominent position in every factory shall be in the form set out in the Schedule to this Order.

[Subsidiary]  
L.N. 514/1990.

## SCHEDULE

(para. 2)

## THE FACTORIES ACT

## ABSTRACT OF THE ACT IN FORM PRESCRIBED BY THE MINISTER

*To be kept posted in factories at principal entrances or in such parts  
as an Inspector may direct*

## INSPECTOR OF FACTORIES

*to whom communications relative to  
the Act should be addressed:*

Address .....

Telephone No. ....

DIRECTOR OF OCCUPATIONAL HEALTH  
AND SAFETY SERVICES

Address .....

Telephone No. ....

Name of Occupier .....

Postal Address .....

Situation of Factory .....

.....

## LABOUR OFFICER:

Address .....

Telephone No. ....

## ABSTRACT

## HEALTH

1. *Cleanliness.*—Every factory must be kept clean. In particular, accumulations of dirt and refuse must be removed daily from floors and benches; the floor of every workroom must be cleaned at least once a week; and all inside walls, partitions and ceilings must (a) if they have a smooth impervious surface, be washed with hot water and soap or cleaned by other approved method every 12 months, or (b) if kept painted with oil paint or varnished, be repainted or revarnished every five years and washed with hot water, etc., every 12 months or (c) in other cases, be whitewashed or colour washed every 12 months. The prescribed particulars must be entered in the general register.

2. *Overcrowding.*—A factory must not be overcrowded. There must be in each workroom at least 350 cubic feet of space for every person employed, not counting space more than 14 feet from the floor.

3. Every workroom (subject to any exceptions allowed) must be not less than nine feet in height, measured from the floor to the lowest point of the ceiling or, where there is no ceiling, to the lowest point of the roofing material.

4. *Ventilation.*—Adequate ventilation of workrooms must be secured

by the circulation of fresh air.

5. *Lighting*.—There must be sufficient and suitable lighting in every part of the factory in which persons are working or passing.

6. *Drainage of Floors*.—Where wet processes are carried on, adequate means for draining the floor must be provided.

7. *Sanitary Accommodation*.—Sufficient and suitable sanitary conveniences, separate for each sex, must be provided subject to conformity with any standards prescribed by rules.

8. *Removal of Dust or Fumes*.—Where, in connexion with any process, dust or fume likely to be injurious or offensive, or any substantial quantity of dust of any kind, is given off, all practicable measures must be taken to protect the workers against inhaling it, and where practicable localized exhaust ventilation must be provided and maintained.

9. *Meals in Certain Dangerous Trades*.—A person must not partake of food or drink in workrooms where any poisonous substance is so used as to give rise to dust or fume.

10. *Protective Clothing and Appliances*.—Suitable protective clothing and appliances, including, where necessary, suitable gloves, footwear, goggles and head coverings, must be provided and maintained for the use of workers employed in any process involving exposure to wet or to any injurious or offensive substance.

#### SAFETY

11. *Fencing*.—Every part of the transmission machinery and every dangerous part of other machinery, and all parts of electric generators, motors and rotary convertors, and flywheels directly connected to them, must be securely fenced unless in such a position or of such construction as to be as safe to every person employed or working on the premises as if securely fenced; and any part of a stock-bar which projects beyond the head-stock of a lathe must be securely fenced unless it is in such a position as to be as safe to every such person as if securely fenced.

12. Moving parts of other prime movers, and flywheels directly connected to them, and the head and tail race of a water wheel or water turbine, must be securely fenced irrespective of their position.

13. Fixed vessels, pits, etc., containing scalding, corrosive or poisonous liquids must, unless the edge is three feet above the adjoining ground or platform, be securely fenced to at least that height or be securely covered; where this is impracticable, other precautions, so far as practicable, must be taken. Fixed vessels, pits, etc., must have a warning notice displayed, in a form readily understood by the persons employed, indicating the nature of the danger.

14. All fencing must be of substantial construction and be maintained

[Subsidiary]

in an efficient state.

15. *Further Requirements in Connection with Transmission Machinery.*—Devices or appliances for promptly cutting off the power from the transmission machinery must be provided in every room or place where work is carried on. Every power-driven machine must be provided with an efficient starting and stopping appliance, the control of which must be readily accessible to the person operating the machine. Efficient mechanical appliances must be provided to move driving belts to and from fast and loose pulleys. Driving belts must not rest or ride on revolving shafts when the belt is not in use.

16. *New Machines.*—New power-driven machines must not be sold, let on hire or used unless certain parts are effectively guarded.

17. *Training and Supervision of Inexperienced Workers.*—A person must not work at any dangerous machine or in any dangerous process unless (i) he has been fully instructed as to the dangers and precautions, and (ii) he has received sufficient training in the work or is under adequate supervision.

18. *Protection of Eyes.*—Goggles or effective screens must be provided in certain specified processes.

L.N. 514/1990.

19. *Hoists or Lifts.*—Every hoist or lift must be of good mechanical construction, sound material and adequate strength, and be properly maintained. It must be thoroughly examined every six months by a person approved by the Director of Occupational Health and Safety Services. A report of the examination must be entered in or attached to the general register.

20. Every hoistway must be efficiently protected by a substantial enclosure and landing gates with efficient interlocking or other devices. The safe working load must be marked conspicuously on each hoist. Additional safeguards (eg. interlocking gates for cages) must be provided on hoists used for carrying persons, whether with goods or otherwise. The requirements are somewhat less stringent in the case of hoists not connected with mechanical power.

L.N. 514/1990.

21. *Chains and Ropes and Lifting Tackle.*—No chain, rope or lifting tackle used for raising or lowering persons or goods may be used unless it is of good construction, sound material and adequate strength, and free from patent defect. Tables of safe working loads must be prominently displayed on the premises, but need not cover any lifting tackle the safe working load of which is marked on the tackle itself. Chains, ropes and lifting tackle in use must be thoroughly examined by a person approved by the Director of Occupational Health and Safety Services every six months, and must not (excepting fibre ropes and fibre rope slings) be taken into use for the first time in the factory unless they have been tested and certified.

L.N. 514/1990.

22. Periodic annealing is required, except in the case of ropes and rope slings and other tackle exempted by the Director of Occupational Health and Safety Services.

[Subsidiary]

23. A register of all chains, etc., and also the certificates of tests, must be kept.

24. *Cranes, etc.*—All parts and working gear (including anchoring appliances) of cranes and other lifting machines must be of good construction, sound material and adequate strength, and must be properly maintained. A thorough examination of all such parts by a person approved by the Director of Occupational Health and Safety Services must be made every fourteen months. A lifting machine must not be taken into use for the first time in the factory unless it has been tested and certified. A register of examinations and tests must be kept. The safe working load or loads must be shown on every lifting machine; in the case of cranes with a derricking jib, an automatic indicator or a table of safe working loads must be attached to the crane. L.N. 514/1990.

25. Rails and tracks of travelling cranes and transporters must be of proper size and construction. If any person is working near the wheel-track of an overhead travelling crane, steps must be taken to ensure that the crane does not approach within 20 feet.

26. *Construction of Floors, Precautions Against Falls, etc.*—Floors, passages, gangways, steps, stairs and ladders must be soundly constructed and properly maintained, and handrails must be provided for stairs.

27. So far as is reasonably practicable, there must be provided (i) safe means of access to every place at which any person has at any time to work, and (ii) fencing or other means for ensuring the safety of any person who is to work at a place from which he would be liable to fall more than ten feet and which does not afford secure foot-hold and, where necessary, secure hand-hold.

28. Every teagle opening or similar doorway used for hoisting or lowering goods must be fenced (except when the hoisting or lowering is going on at that opening), and be provided with a hand-hold on each side of the opening.

29. *Precautions Against Gassing.*—Special precautions are laid down for work in confined spaces where men are liable to be overcome by dangerous fumes.

30. *Explosions of Inflammable Dust or Gas.*—Precautions against explosions are laid down for certain processes and for welding or soldering on containers which have held any explosive or inflammable substance.

31. *Steam Boilers, Steam Receivers, etc.*—Every part of every steam boiler and steam receiver must be of good construction, sound material and adequate strength, and free from patent defect. Detailed requirements are laid down as to the valves and other fittings. The outlet of every steam container must at all times be kept open and free from obstruction.

32. Steam boilers and steam receivers and their fittings must be properly maintained, and must be thoroughly examined by an authorized boiler inspector, in the case of boilers every fourteen months and also after extensive repairs, and in the case of steam receivers every twenty-six months. A report of each

## [Subsidiary]

examination must be attached to the general register. New or second-hand boilers must be examined before being taken into use.

33. *Air Receivers.*—Every air receiver and its fittings must be of sound construction and properly maintained. Detailed requirements are laid down as to the fittings.

L.N. 514/1990.

34. Air receivers must be thoroughly cleaned, and must be examined or tested every twenty-six months by a person approved by the Director of Occupational Health and Safety Services, and a report entered in or attached to the general register. In some cases a longer period is allowed.

35. *Fire.*—Adequate and suitable means for extinguishing fire must be provided in every factory.

36. Adequate means of escape in case of fire must be provided. While any person is in the factory for the purpose of employment or meals, doors must not be so locked or fastened that they cannot be easily and immediately opened from the inside. In the case of newly constructed or converted factories, all doors affording a means of exit from the factory must be sliding doors or open outwards. Fire exits must be marked by a notice printed in red letters of adequate size. Effective steps must be taken to ensure that the workers are familiar with the means of escape and the routine to be followed in case of fire.

## WELFARE

37. *Drinking Water.*—An adequate supply of wholesome drinking water must be provided.

38. *Washing Facilities.*—Adequate and suitable washing facilities must be provided and maintained.

39. *Accommodation for Clothing.*—Adequate and suitable accommodation for clothing not worn during working hours must be provided.

40. *Facilities for Sitting.*—Suitable facilities for sitting must be provided for all female workers whose work is done standing, sufficient to enable them to take advantage of any opportunities for resting.

41. *First-aid.*—In every factory there must be provided a first-aid box or cupboard of the prescribed standard, containing nothing except first-aid requisites, and in charge of a responsible person who must be always readily available during working hours. In every workroom a notice must be affixed stating the name of the person in charge of the box or cupboard provided in respect of that room. Where more than 150 persons are employed at one time, an additional box or cupboard for every additional 150 persons or fractions of that number is required.

## GENERAL

42. *Duties of Persons Employed.*—A person employed must not wilfully interfere with or misuse any means, appliance, convenience or other thing

[Subsidiary]

provided in pursuance of the Act for securing health, safety or welfare, and he must use any means or appliance for securing health or safety provided for his use under the Act. He must not wilfully and without reasonable cause do anything likely to endanger himself or others.

43. *Registration.*—Before any premises are occupied or used as a factory, a certificate of registration must be obtained from the Director of Occupational Health and Safety Services. L.N. 514/1990.

44. *General Register.*—The occupier must keep a general register in the prescribed form.

45. *Rules for Health, Safety and Welfare.*—Rules made for particular industries, processes, plant, etc., must be observed, and printed copies or prescribed abstracts of all such rules in force in any factory must be kept posted in the factory.

46. *Inspection.*—Inspectors of factories have power to inspect every part of a factory by day or by night. They may require the production of registers, certificates and other papers. They may examine any person found in the factory, either alone or in the presence of any other person as they think fit, and may require him to sign a declaration of the truth of the matter about which he is examined. They may also exercise such other powers as may be necessary for carrying the Act into effect, including certain powers of taking samples for analysis. Every person obstructing an inspector is liable to a penalty.

[Subsidiary]

L.N. 31/2004.

**THE FACTORIES AND OTHER PLACES OF WORK (SAFETY AND HEALTH COMMITTEES) RULES, 2004**

Citation.

1. These Rules may be cited as the Factories and Other Places of Work (Safety and Health Committees) Rules, 2004.

Interpretation.

2. In these Rules, except where the context otherwise requires—

“audit” means periodic evaluation of working environment and organizational management systems in a factory or workplace for prevention of accidents, occupational diseases, ill-health or damage to property;

“chairman means the chairman referred to in Rule 5 (5);

“Committee” means a Safety and Health Committee established pursuant to section 65A of the Act;

“competent person”, in relation to any duty or function, means a person who has had adequate training, relevant qualifications and experience to enable him to perform that duty or function;

“director” means the Director of Occupational Health and Safety Services appointed under the Act;

“management” means the occupier and the administrative staff of a factory;

“occupational and health and safety officer” means an officer appointed under section 68 of the Act;

“occupier” means the person or persons in actual occupation of a factory, whether as the owner or not;

“regular employee” means a person employed on permanent, temporary, or contract terms, including contractors or suppliers, and “regularly employ” shall be construed accordingly;

“workplace” includes any land, premises, location, vessel or thing at, in, upon, or near which a worker performs his duty in accordance with his contract of employment;

Application.

3. These Rules shall apply to all factories and other workplaces which regularly employ twenty or more employees.

Formation of Committees.

4.(1) The occupier of every factory or other workplace to which these Rules apply shall establish a Safety and Health Committee in the manner provided in these Rules.

(2) A Safety and Health Committee shall consist of safety representatives from the management and the workers in the following proportions—

[Subsidiary]

- (a) in the case of factories or other workplaces with between twenty and one hundred regular employees, not less than three safety representatives each from the management and the workers;
- (b) in the case of factories or other workplaces with between one hundred and one thousand regular employees, not less than five safe representatives each from the management and the workers and;
- (c) in the case of factories or other workplaces with one thousand or more regular employees, not less than seven safety representatives each from the management and the workers.

(3) The occupier shall, not later than six months after the coming into operation of these Rules, appoint a competent person, being a member of the management staff, to be responsible for safety, health and welfare in the factory or workplace.

(4) The person appointed under paragraph (3) shall be the Secretary to the Committee.

5. (1) The safety representatives from—

Organization of the  
Committee.

- (a) the management, shall include the occupier or his duly authorized representative, and other persons appointed for the purpose of these Rules by the occupier; and
- (b) the workers, shall be elected in accordance with paragraph (2).

(2) The occupier shall organize and oversee the election of the representatives of the workers on the Committee, following a procedure agreed upon between the occupier and the workers.

(3) The occupier shall, in overseeing elections under paragraph (2), ensure, as far as possible—

- (a) equitable representation of departments or units which are detached from the main office; and
- (b) gender parity.

(4) Safety representatives shall serve on the Committee for a term of three years and shall be eligible for re-election or re-appointment for one further term.

(5) The occupier, or the occupier's duly authorized representative, shall be the chairman of the Committee.

6. The functions of the Committee shall be to—

Functions and duties  
of the Committees.

- (a) establish a schedule of inspection of the workplace for each calendar year;

[Subsidiary]

- (b) conduct safety and health inspections at least once in every three months;
- (c) inspect, investigate and make recommendations to the occupier immediately any accident or dangerous occurrence takes place.
- (d) identify occupational hazards and cases of ill-health among workers at the workplace and make appropriate recommendations to the occupier;
- (e) compile statistics of accidents, dangerous occurrences and cases of ill-health as primary data for providing remedial measures, planning and allocation of resources;
- (f) investigate complaints relating to workers' health, safety and welfare at the workplace and make representations to the occupier on their findings;
- (g) advise on the adequacy or otherwise of safety and health measures for particular hazardous work or activities;
- (h) establish effective communication channels on matters of health and safety between the management and the workers;
- (i) organize such contests or activities necessary for achieving the fulfilment of the mandate of the Committee;
- (j) conduct seminars and workers' education programmes and provide information for safety, health and welfare at the workplace; and
- (k) carry out any other functions necessary for the promotion of a safe and healthy working environment.

Meetings and minutes of the Committee.

7. (1) The Committee shall meet not less than four times in every year, and not more than three months shall elapse between the date of one meeting and the date of the next meeting

(2)(a) Notwithstanding paragraph (1), the chairman shall convene a meeting of the Committee within twenty-four hours following any accident or other dangerous occurrence, or the outbreak of an unusual illness, at the workplace.

(b) The minutes of a meeting convened under subparagraph (a) shall be forwarded to the director within seven days from the date of the meeting.

(3) Without prejudice to the foregoing, the chairman of a Committee may, at any time of his own motion, convene a meeting of the Committee, and shall on the application of at least six members, convene a special meeting of the Committee.

[Subsidiary]

(4)(a) The quorum of a meeting of the Committee shall be not less than two thirds of the members representing employees and one third of those representing the management.

(b) The director or his representative may, on his own initiative or upon invitation by the chairman, attend a meeting of the Committee.

(5) At least seven days' written notice of every meeting of the Committee shall be given to every member of the Committee.

(6) The Committee may invite on an *ad hoc* basis to its meetings, or interview, any person it believes to have information in relation to any matter which is being considered by the Committee.

(7) The Committee may co-opt into its membership one or more persons by reason of their particular knowledge or experience in health and safety matters as an advisory member of the Committee, but such co-opted member shall not be entitled to vote.

(8) The Secretary of the Committee shall in the course of exercising his functions as such, cause a summary of the minutes of every meeting, giving the final decisions and plans of actions arrived at during the meetings, to be posted at a prominent place so as to be easily accessible to the workers.

(9) The director may require the occupier to furnish his office with a schedule of the meetings of the Committee for each year or part thereof, and the proceedings of the same.

8. (a) The chairman of the Committee shall—

- (i) preside over all Committee meetings at which he is present;
- (ii) keep the members informed of the safety and health policy of the factory or workplace;
- (iii) assist the Committee in setting its objectives and its scope of activities; and
- (iv) assign responsibilities to members.

Roles in the  
Committee.

(b) The Secretary to the Committee shall—

- (i) arrange and co-ordinate Committee meetings in consultation with the chairman;
- (ii) take minutes at Committee meetings;
- (iii) maintain an up to date record of the activities of the Committee;
- (iv) obtain and analyse statistics for Committee meetings;

[Subsidiary]

- (v) co-ordinate and monitor occupational safety and health programmes;
- (vi) disseminate safety and health information to members;
- (vii) draw up safety and health inspection schedules; and
- (viii) ensure that all reports arising from the functions of the Committee, from the director, or persons approved under these rules or under the Act, are availed to the Committee.

(c) The members of the Committee shall—

- (i) attend all Committee meetings;
- (ii) provide feedback to their departments or units on safety, health and welfare issues raised in the meetings;
- (iii) set good examples of safe and healthy work practices;
- (iv) monitor compliance with safety and health rules in their respective departments or units;
- (v) participate in the training of workers in matters related to health and safety;
- (vi) carry out any other activities necessary for the promotion of occupational safety, health and welfare in the workplace; and
- (vii) provide written, recommendations to the occupier on areas and issues requiring action following inspections carried out under these Rules.

Duties of the occupier.

9. The occupier shall—

- (a) provide, at no cost to the Committee, a suitable venue and other facilities for holding Committee meetings;
- (b) allow members to attend the meetings and other functions of the Committee without loss of earnings, opportunities for promotion or advancement;
- (c) ensure that all safety representatives undertake training courses organized for purposes of these Rules;
- (d) provide the Committee with—
  - (i) any information or report on any accidents, dangerous occurrences or incidents of occupational diseases immediately

[Subsidiary]

- it comes to his knowledge;
- (ii) statistics of accidents, dangerous occurrences, and incidents of occupational diseases;
  - (iii) all the necessary or relevant information on hazardous substances;
  - (iv) safety and health reference materials and facilities;
- (e) cause the monitoring and evaluation of hazards and risks identified by the Committee to be carried out by a competent person.
- (f) develop a clearly defined safety and health policy and bring it to the notice of all employees at the work place, and send a copy of the policy to the director;
- (g) facilitate the implementation and review of the organization's safety and health policy;
- (h) make available to the Committee legislation on occupational safety and health;
- (i) make a report to the director on all accidents as required under the Act;
- (j) chair meetings, and, in his absence, delegate the function to a senior member of the management;
- (k) cause further specialized evaluation as necessitated by the audit report in regard to medical examination of the workers, testing and examination of plant and equipment, monitoring of the work environment or other scope whenever he is required to do so in writing by the Director.
- (l) cause to be maintained a record of the proceedings of Committee meetings and reports of the audit referred to in these rules; and
- (m) ensure that all matters set out in these Rules are complied with.

10. (1) The Director may invite applications by competent persons, for approval to serve as safety and health advisers. Approval of advisers.

(2) A person shall be qualified to be a safety and health adviser such person holds a minimum qualification of a certificate in occupational safety and health from a recognized institution and has proven practical experience in this field for a period of five years.

(3) The Director shall consider all applications received and approve suitable persons to serve as health and safety advisers for purposes of these Rules.

## [Subsidiary]

(4) The Director shall, by notice in the Gazette, notify the appointments made under paragraphs 3, and maintain a register of all persons appointed thereunder.

(5) Every adviser shall be issued with a certificate by the director, upon payment of the prescribed fee.

(6) The certificate issued under paragraph (4) shall be renewable annually.

Duties of a registered safety and health adviser.

11. (1) The safety and health adviser shall—

- (a) carry out safety and health audits of the factory or workplace at the request of the occupier;
- (b) advise the occupier and the members of the Committee on matters relating to occupational health and safety arising from the audit report;
- (c) submit a copy of the audit report to the director.

Training of the Committee.

12. (1) Every member of the Committee shall undertake a prescribed basic training course in occupational health and safety within a period of six months from the date of appointment or election, as the case may be, and thereafter further training from time to time.

(2) The training course referred to in subparagraph (1) shall be in such form and in such institutions as may be approved by the director.

(3) The director may, on application, exempt any person from undertaking the training courses referred to in paragraph (1) where the director is satisfied that the applicant is suitably qualified for the purposes of these Rules.

(4) The Director shall, once every year, publish in the Gazette a list of the institutions approved for purposes of paragraph (2).

Health and safety audit.

13. (1) The occupier of every factory or workplace shall cause a health and safety audit of the workplace to be carried out at least once in every period of twelve months by a registered health and safety adviser at such fee as may be agreed upon with such adviser.

(2) The report of the audit shall be kept by the occupier for purposes of these Rules and a copy of the same shall be sent to the director by the adviser within a period of thirty days following the audit.

Offence in relation to audit.

14 (1) Any person authorized to carry out an audit under these Rules who—

- (a) fails to make a report as required by these Rules;
- (b) makes a report which is false or deficient in its technical content; or

[Subsidiary]

(c) fails to send to the director a copy of any report as required,

shall be guilty of an offence, and liable to a fine not exceeding fifty thousand shillings or to imprisonment for a term not exceeding three months, or to both such fine and imprisonment.

15. Any occupier, or any other person who contravenes any of these Rules, shall be guilty of an offence and liable to a fine not exceeding fifty thousand shillings. Others offences.

### **THE FACTORIES AND OTHER PLACES OF WORK (MEDICAL EXAMINATION) RULES, 2005**

L.N. 24/2005.

1. These Rules may be cited as the Factories and Other Places of Work (Medical Examination) Rules, 2005. Citation.

2. In these Rules except where the context otherwise requires— Interpretation.

“medical examination” means examination of workers exposed to specified occupational hazards indicated in the First Schedule to these Rules for the purpose of prevention and control of occupational diseases;

“employer” includes owner and/or occupier;

“employee” means a person who has entered into or works under a contract of service or of apprenticeship or learnership, with an employer whether the contract is express or implied, oral or in writing and whether the remuneration is calculated by time or by work done or is in cash or in kind;

“designated” health practitioner” means any medical practitioner whether a public officer or not who is authorized by the director, by certificate in writing, to carry out examination of workers in accordance with, and for the purposes of these Rules;

“directorate” means the directorate of occupational health and safety services;

“occupational diseases” means any departure from health occasioned by exposure to any factor or hazard in the workplace;

“workplace” includes any land, premises, location, vessel or thing at, in, upon or near where an employee is, in the course of employment.

3. These Rules shall apply to medical examination of all those employees in employment or have been in employment in every workplace, to which the provisions of the Act apply. Application.

**[Subsidiary]**

Occupations  
requiring medical  
examination.

4. (1) It shall be the duty of the employer to ensure that all persons employed in any of the occupations outlined in the Eighth Schedule to the Act undergo both pre-employment and periodic medical examinations by the designated health practitioner as outlined in the First Schedule.

(2) The fees to be charged by the designated health practitioner shall be as prescribed by the director.

(3) The Minister may, in the Gazette, publish any other work involving risk to the health of the employees.

(4) Any employer who does not comply with paragraph (1) shall commit an offence.

Duties of employer  
and employees as to  
medical examination.

5. (1) The employer shall ensure that the examination takes place without any loss of earnings for the employees and if possible within normal working hours during their employment.

(2) The costs in connection with such examination shall be paid by the employer.

(3) The employees and former employees shall be under an obligation to undergo examination in accordance with these rules.

(4) Any person who contravenes this provision shall commit an offence.

Reports on  
examination.

6. (1) Results of the examination shall be entered into each individual's medical record by the designated health practitioner and shall be updated with each examination whenever repeat tests are carried out.

(2) Summary report forms as outlined in the Second Schedule shall be completed after medical examination for each hazard and shall be submitted within twenty one days to the director and a copy sent to the employer.

(3) If there is more than one hazard in the same workplace, separate summary report forms shall be used for each hazard.

Certificate of  
redeployment.

7. (1) If it is desirable that an employee be removed from further exposure to a particular hazard, the certificate of redeployment as outlined in the Third Schedule shall be filled and completed in triplicate by the designated health practitioner and a copy sent to the employer, employee and the director within seven days from the date of the examination.

(2) In these rules, unless where it is otherwise indicated, all abnormal examination results shall be repeated within two weeks to ensure consistency.

Certificate of fitness.

8. (1) Examination results for persons entering employment or those returning from sick leave occasioned by occupational diseases shall be entered into the certificate of fitness as outlined in the Fourth Schedule, which shall be kept by the designated health practitioner, and a copy thereof given to the employee.

[Subsidiary]

(2) If an employee is exposed to more than one of the specified hazards, a separate certificate of fitness shall be completed for each hazard.

9. (1) The provisions of section 45 regarding the notification of occupational diseases shall apply *mutatis mutandis* for all abnormal results as if they were set out therein. Notification.

(2) Notification shall contain particulars as outlined in the notification form in the Fifth Schedule.

10. Any person who contravenes these rules shall commit an offence and the provisions of the Act on offences and penalties shall *mutatis mutandis* apply. Offices and penalties.

[Subsidiary]

## FIRST SCHEDULE (RULE 4)

## OCCUPATIONS REQUIRING MEDICAL EXAMINATION (S)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
1.	Handling animals, animal products, animal carcasses, veterinary work, laboratory and health work.	Clinical examination.	Pre-employment and annual.	All cases of definite or suspected zoonotic diseases.
2.	Work with arsenic and its compounds.	1.Clinical examination. 2.Estimation of urinary arsenic content. 3.Full size chest x-ray. 4.Sputum cytology.	Pre-employment and annual for all.	(i) All cases of definite or suspected arsenic poisoning. (ii) Cases with urine arsenic levels of 500 <i>micrograms per litre</i> in two successive examinations at two weeks interval. (iii) All cases with evidence of cancer.
3.	Work where asbestos is handled.	1.Clinical examination. 2.Lung function tests. 3.Full size chest x-ray. 4.Sputum cytology	Pre-employment and annual for all	(i) Symptomatic worker. (ii) Progressive deterioration in chest X-ray findings. (iii) Suspected or diagnosed cases of asbestosis and/or mesothelioma and bronchogenic carcinoma.

[Subsidiary]

## FIRST SCHEDULE (RULE 4) — (CONTD.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
4	Work involving exposure to benzene	1. Clinical examination. 2. Full haemogram .	Pre-employment and annual for both.	(i) All cases of definite or suspected poisoning and excessive absorption. (ii) Cases with urine phenol levels of more than 50 <i>micrograms per litre</i> in two successive examinations at a two weeks interval. (iii) Cases of anaemia and/ or leukaemia.
5	Work involving exposure to cadmium	1. Clinical examination 2. Blood cadmium estimation. 3. Urine beta 2 micro globulin.	Pre-employment and annual for all.	(i) All cases of definite cadmium poisoning and excessive absorption. (ii) Cases with blood cadmium levels of more than 100 <i>micrograms per litre</i> in two successive examinations at a two weeks interval. (iii) Cases with urine beta 2 micro globulin exceeding 200 <i>micro grams per litre</i> .

[Subsidiary]

## FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
6.	Work in adverse atmospheric pressure and compressed air environments.	Clinical examination	Pre-employment thereafter (a) Not less than once in every 3 months for working pressures not exceeding 1 bar. (b) Not less than once in every 4 weeks for working pressure exceeding 1 bar. (c) Not more than 3 days prior to re-employment in compressed air: (i) After a worker has been employed for more than 14 consecutive days. (ii) After a worker has suffered from cold, chest infection, sore throat and ear ache.	(iv) All cases with evidence of cancer (lung, prostate).  (i) Type II compressed air illness. (ii) Cases with evidence of conditions for which compressed air work is contraindicated. (iii) Cases with juxta-articular lesions.

[Subsidiary]

FIRST SCHEDULE (RULE 4)—(Contd.)

<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
		(iii) After a worker has suffered from any illness or injury necessitating absence from work more than three consecutive days.	
	1. Height, weight and body fat estimation.	Pre-employment and annual.	
	2. Audiometry.	Pre-employment and annual.	
	3. Test in lock.	Pre-employment and annual.	
	4. Full-size chest X-ray.	Pre-employment and annual.	

[Subsidiary]

## FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
		5. Radiographic examination for shoulder, hip and knee joints.	Pre-employment to be carried out within 4 weeks of starting employment in compressed air exceeding 1 bar. Thereafter not less than once in ever 12 months	
		6. Stress electrocardiogram.	Pre-employment and annual for workers aged more than 35 years.	
7.	Handling fossil oil.	Clinical examination.	Pre-employment and annual.	Any abnormal dermatological or respiratory sign.
8.	Work where ionising and non-ionising radiations are emitted.	Clinical examination.	Pre-employment and annual.	Abnormal visual and/or clinical sign.
9.	Work involving exposure to Iron.	Clinical examination.	Pre-employment and annual.	Any abnormal respiratory sign.
10.	Work involving exposure to lead and its compounds.	1. Clinical examination. 2. Blood lead levels	(a) Pre-employment and annual  (b) Pre-employment, annual and a repeat depending on blood lead level.	Cases of suspected lead poisoning.  Males and females with blood lead levels of 70 <i>micrograms</i> per 100ml and 50 <i>micrograms</i> per 100ml respectively.

[Subsidiary]

FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
		3. Haemoglobin level.	(c) Pre-employment, annual and a repeat depending on blood lead level.	Cases of anaemia.
		4. Urine lead level.	(d) Pre-employment, annual and a repeat depending on urine lead level.	Cases with urine lead levels of 150 micrograms litre in two successive examinations within two weeks.
11.	Work involving exposure to manganese and its compounds.	1. Clinical examination. 2. Urine manganese	(a) Pre-employment and annual.  (b) Pre-employment, annual and a repeat depending on urine manganese level.	(i) Cases of definite or suspected manganese poisoning.  (ii) Cases with urine, manganese levels of more than 50 micrograms per litre in two successive examinations within two weeks.

[Subsidiary]

## FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
12.	Work involving exposure to mercury and its compounds.	1. Clinical examination. 2. Urine mercury. 3. Blood mercury.	(a) Pre-employment and annual. (b) Pre-employment annual and a repeat depending on urine mercury level. (c) Pre-employment, annual and a repeat depending on blood mercury level.	(i) Cases of definite or suspected mercury Poisoning. (ii) Cases with urine mercury levels of more than 150 micrograms per litre in two successive examinations within two weeks.
13.	Work involving exposure to nickel, chromium, beryllium.	1. Clinical examination. 2. Lung function tests.	Pre-employment and annual for both.	Abnormal skin and lung manifestations.
14.	Work involving exposure to noise.	Audiometric examination.	Pre-employment and annual.	(i) Cases with definite or suspected noise induced deafness. (ii) Cases with deterioration of hearing loss of 20dB or more in two successive examinations within two weeks.
15.	Work involving exposure to organophosphate pesticides / carbamates/ other pesticides.	1. Clinical examination.	(a) Pre-employment, periodic and a repeat depending on results.	(i) All cases of definite or suspected poisoning and/ or excessive absorption.

[Subsidiary]

FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
		2. Red blood cell acetyl cholinesterase estimation.	(b) Pre-employment and repeat depending on results.	(ii) Cases with Red blood cell acetyl cholinesterase of less than 50% of the pre-employment or laboratory normal level.
		3. Plasma cholinesterase estimation	(c) (i) Pre-employment, periodic and a repeat depending on result; (ii) following accidental skin contact or in suspected acute poisoning cases.	(iii) Cases with Red blood cell acetyl cholinesterase of between 50% and 70% of the pre-employment level showing a fall of more than 10% in the repeat test results.
16.	Work involving exposure to silica.	1. Clinical examination. 2. Full size chest x-ray. 3. Lung function tests.	Pre-employment and annual for all.	Cases with definite evidence of Silicosis. Cases with cardio-respiratory diseases.
17	Work involving exposure to sisal, cotton, baggasse and mouldy hay.	1. Clinical examination. 2. Lung function tests.	Pre-employment and annual for both	(i) Cases with grade two symptoms. (ii) Cases with chronic bronchitis and emphysema. (iii) Cases with more than 20% decline in ventilators capacity in two successive annual examinations.

[Subsidiary]

## FIRST SCHEDULE (RULE 4)—(Contd.)

	<i>Work involving risk to health</i>	<i>Medical examinations</i>	<i>Examination interval</i>	<i>Indication for re-deployment and notification to the Director</i>
	Work involving exposure to tar pitch, bitumen and creosote.	Clinical examination.	Pre-employment and annual.	Cases with pre-malignant lesions and definite or suspected benign/malignant neoplasm of the skin or lungs.
	Work at adverse temperatures.	Clinical examination.	Pre-employment and annual.	Any significant abnormal dermatological or respiratory sign.
	Work involving exposure to vinyl chloride monomer.	1. Clinical examination. 2. Liver function tests.	Pre-employment and annual for both.	(i) Cases of definite or suspected vinyl chloride monomer poisoning. (ii) Abnormal liver function tests on two successive examinations.

[Subsidiary]

SECOND SCHEDULE RULE (6) (2)

SUMMARY REPORT FORM

This form should be completed by the designated health practitioner and submitted to the director within twenty one days and a copy sent to the employer.

Name of workplace:.....

Workplace registration No. ....

Location: .....

Tel: .....

Address: .....

Email: .....

Type of risk to health:.....

Number of workers exposed: .....

RESULTS OF EXAMINATIONS

Number of employees examined:.....

Number of employees with abnormal results: .....

(a) Occupational diseases: .....

(b) Non-occupational disease(s): .....

Number of employees recommended for re-deployment.....

I certify that the information given above is correct. Particulars of all workers abnormal results including those recommended for redeployment are attached.

Name of Designated Health Practitioner:.....

Approved Registration No:.....

Address:.....

Physical address of office:.....

Tel. ....Fax:.....

[Subsidiary]

E-mail: .....

Signature: .....

Date: .....

**THIRD SCHEDULE RULE (7)**

CERTIFICATE OF RE-DEPLOYMENT

*This form should be filled in triplicate by the designated health practitioner and a copy sent within seven days to the employer, employee and the director.*

- 1. Name of employee (as per identity card).....
- 2. Employment number.....
- 3. ID/passport No. ....
- 4. Date of birth Sex .....
- 5. Name and Address of workplace .....
- 6. Type of risk to health present.....
- 7. Duration of exposure.....

I Certify that the above named person examined by me on this ..... day of ..... should not continue to work as a ..... for ..... months, subject to a review on..... this day of .....

In the meantime, the employee should be given alternative work in another area which does not expose him/her to the above mentioned health risk. The reasons for my recommendations are as follows:

.....  
.....  
.....

Date: ..... Signature:.....

Name of Designated health practitioner: .....  
Approved registration no. ....  
Address: .....  
Physical address of office ..... Tel .....  
Fax ..... E-mail.....

**FOURTH SCHEDULE RULE (8)**

**CERTIFICATE OF FITNESS**

*This form should be filled by the designated health practitioner for all those entering employment or returning from sick leave occasioned by an occupational disease as applicable.*

- 1. Name of employee examined .....
- 2. ID/Passport No. ....
- 3. Employment No. ....
- 4. Date of Birth ..... Sex .....
- 5. Name and Address of employer .....
- 6. Examinations/Test done .....
- .....
- .....
- .....

I hereby certify I have examined the above employee on ..... this day of ..... and that he/she is fit / not fit

Remarks: .....

Signature ..... Date .....

Name and Address of Designated Health Practitioner .....

Approved registration No. ....

Address.....

Physical Location of office.....

Tel. ....

Fax .....

E-mail .....

[Subsidiary]

**FIFTH SCHEDULE (R. 9)****NOTIFICATION FORM**

*This form shall be completed and forwarded to the director by a designated health practitioner or any medical practitioner attending to or called in to visit a patient whom he believes to be suffering from an occupational disease.*

1. Name of patient .....
2. ID/Passport No. ....
3. Employment No. ....
4. Date of Birth ..... sex .....
5. Residential address .....
6. Name and Address of employer .....
7. Present occupation .....
8. Number of years worked in present occupation .....
9. Diagnosis .....
10. If patient was previously seen by occupational Health Practitioner, state date of last attendance .....
11. Name of designated health practitioner/ Medical practitioner.....
12. Approved registration number where applicable .....
13. Name and address of Hospital/Clinic .....
- Tel. No..... E-mail .....
- Fax.....
14. Medical practitioner's reference. file No. for patient .....
- Signature ..... Date .....

[Subsidiary]

L.N. 25/2005.

**THE FACTORIES AND OTHER PLACES OF WORK (NOISE  
PREVENTION AND CONTROL) RULES, 2005**

1. These rules shall be cited as Factories and Other -Places of Work (Noise Prevention and Control) Rules, 2005. Citation.
2. In these rules except where the context otherwise requires— Interpretation.
- “A-weighted filter” means an electronic circuit whose sensitivity to sound pressure levels varies in the same way as the human ear;
- “daily exposure” means the amount of noise stated in dB(A) to which a person is exposed during work day;
- “dB(A)” means decibels of noise, measured with an A-weighted filter,
- “director” means the Director of Occupational Safety and Health Services;
- “directorate” means the directorate of occupational health and safety services;
- “machinery” includes machines tools and other technical devices used at the place of work;
- “noise” means all sound energy which can result in hearing impairment or be harmful to health or otherwise dangerous;
- “peak sound level” means the maximum instantaneous sound level in dB(A);
- “worker” includes a person who has entered into or works under a contract of service or apprenticeship, written or oral, express or implied, whether by way of manual labour or otherwise;
- “workplace” includes any land, premises, location, vessel or thing at, in, upon or near which a worker performs his duty in accordance with his contract of employment.
3. (1) These rules shall apply to every factory, premises, place, process and operations to which the provisions of the Act apply. Application.
- (2) Every occupier shall comply with these Rules and every agent, worker and any other person in the workplace shall conduct his work in accordance with these Rules
4. (1) No worker shall be exposed to a noise level in excess of— Permissible noise level.
- (a) the continuous equivalent of ninety dB (A) in eight hours within any twenty four hours duration; and

## [Subsidiary]

(b) one hundred and forty dB (A) peak sound level at any given time.

(3) Where noise is intermittent, noise exposure shall not exceed the sum of the partial noise exposure equivalent continuous sound level of ninety dB (A) in eight hour duration within any twenty four hours duration.

(4)(a) It shall be the duty of the occupier to ensure that noise that gets transmitted outside the workplace shall not exceed fifty five dB (A) during the day and forty five dB (A) during the night; and

(b) any person who does not comply with this provision shall commit an offence.

## Noise prevention programme.

5. (1) Where noise in a workplace exceeds the continuous equivalent of eighty five dB (A) the occupier must develop and implement an effective noise control and hearing conservation programme.

(2) The programme must be in writing and should address—

- (a) noise measurement;
- (b) education and training;
- (c) engineering noise control;
- (d) hearing protection,
- (e) posting of notices in noisy areas;
- (f) hearing tests; and
- (g) annual programme review.

(3) The occupier shall maintain in a manner acceptable to the director a record of the hearing tests for each worker which must be—

- (a) kept as long as the worker is employed by the employer and not less than two years; and
- (b) treated as confidential and not released to anyone without the written permission of the worker.

## Noise measurements and records.

6. (1) (i) It shall be the duty of the occupier to carry out measurements of noise at least once in every period of twelve months in order to determine the prevailing noise conditions.

(ii) whenever any facility, equipment, working process or working method has been changed, noise measurements shall be carried out.

(2) Noise exposure measurement results shall be recorded and specify—

[Subsidiary]

- (a) the date and time of the noise measurement;
- (b) the names and numbers of workers exposed;
- (c) types of occupations evaluated;
- (d) measuring conditions;
- (e) measuring method;
- (f) measuring equipment;
- (h) recommended remedial measures taken; and
- (g) name of person taking the measurements.

(3) The results of the measurements carried out as required under paragraph (2) shall be kept by the occupier for a period of two years or such other period as may be prescribed by the director and shall be communicated to the workers if requested.

(4) The director may issue guidelines on how monitoring of noise shall be carried out.

7. (1) The occupier shall inform in writing all the workers in any process where noise level is below ninety dB(A) on:—

Information and training of workers.

- (a) the results of any noise exposure measurements;
- (b) the significance of those results to the risk of hearing loss; and
- (c) at the request of the worker, the purpose of hearing protection and testing.

(2) The occupier shall inform in writing all workers exposed to noise above ninety dB(A) on the—

- (a) results of any noise exposure measurements;
- (b) effects of noise on hearing;
- (c) proper use and maintenance of hearing protection; and
- (d) purpose of hearing test.

(3) The occupier shall ensure that all workers exposed to noise are fully trained on the hazards involved, and instructed in the measures available for the prevention, control and protection against noise exposure.

8. It shall be the responsibility of the occupier to ensure that all noise measuring equipment are regularly calibrated, maintained, inspected and

Equipment.

**[Subsidiary]**

operated according to manufacturer's instructions.

Engineering controls.

9. Every occupier shall—

- (a) take suitable engineering noise reduction measures at the source of the noise to reduce it and limit its spreading;
- (b) adopt methods of work, which shall reduce noise exposure of workers to the recommended noise levels; and
- (c) as far as practicable, walls and ceilings of workplaces shall be lined with suitable sound absorbing material to prevent reflection of noise.

Installation and maintenance of machinery or plant.

10. (1) Machinery or plant in the workplace shall be installed in such a way that the lowest possible noise is emitted when the machine is in operation.

(2) It shall be the duty of the occupier to carry out regular inspection and maintenance of machines and installations to ensure that noise emission is prevented or controlled.

(3) Where noise levels exceed ninety dB (A), the process or machinery shall be segregated or be enclosed by suitable structures capable of suppressing noise.

(4) Where it is not practicable to segregate or enclose noisy machinery or process as required rule (3), there shall be provided a suitable sound reducing enclosure or cabin for use by employees exposed.

Means of communication.

11. The occupier shall install, where noise gives rise to difficulties in verbal or sound communication, a visual warning system or any other means of communication.

Hearing protection.

12. Where noise cannot be controlled by engineering measures and exceeds ninety dB(A), the employer shall—

- (a) provide and maintain suitable hearing protection to the affected workers; and
- (b) ensure that the hearing protection is always worn correctly.

Noise hazard areas.

13. Where the noise level is above ninety dB(A), the employer shall—

- (a) post a sign at the entrance to and in every room or conspicuous place, clearly and prominently marked "DANGER, HEARING PROTECTION MUST BE WORN" in English, Kiswahili and one local language commonly used where the workplace is situated;
- (b) supply hearing protection to all persons required to enter such an area; and
- (c) ensure that all workers and any other person entering this area wear hearing protection.

## [Subsidiary]

14. All workers shall wear hearing protection in all places designated as noise hazard areas, and in accordance with instructions provided by the employer. Workers responsibility in noise hazard area.
15. (1) It shall be the duty of the occupier to ensure that the machines installed in the workplace are appropriately designed or have built-in noise reduction devices, which ensure the lowest possible emission and in any case not exceeding ninety dB (A). Duties of occupier.
- (2) The occupier shall request the supplier of the machine referred to in paragraph (1) to provide information on the noise characteristics of the machine.
16. (1) The occupier shall provide medical examinations and hearing tests for workers exposed to noise above eighty five dB(A) limit as follows:— Medical examination and hearing tests.
- (a) an initial test upon employment;
- (b) annual tests thereafter or at such an interval as may be required by the director.
- (2) Every occupier who provides medical examination and hearing tests for his workers shall within twenty days submit reports in such form as may be prescribed by the director.
- (3) Where medical examination reveals that a worker is unfit to continue with assignments involving exposure to noise the employer shall find an alternative employment.
- (4) A worker transferred to alternative employment in compliance with paragraph (3) shall not suffer loss of remuneration or any other benefit due to him.
17. (1) Every medical practitioner shall give to the director, after diagnosing occupational hearing impairment, a full report including the name of the patient, the name of factory or workplace in which the employee was last employed. Compensation and notification of occupational hearing impairment.
- (2) Occupational hearing impairment shall be compensated as an occupational disease.
18. (1) The occupier shall review the noise control and hearing conservation programme annually to ensure its effectiveness. Programme review.
- (2) The review must address—
- (a) the adequacy of noise control measures;
- (b) the selection and use of hearing protection; and
- (c) hearing test, and information on the rate and extent of occupational hearing impairment.

## [Subsidiary]

Offences and penalties.

19. Where any offence is committed under these rules, the provisions of Part XI of the Principle Act as to offences, penalties (including the amounts thereof) and the proceedings shall apply, *mutatis mutandis*, as if they were set out there in.

Revocation.

20. The Noise Rules L.N. 296 of 1996 is revoked.

L.N. 59/2007.

**THE FACTORIES AND OTHER PLACES OF WORK  
(FIRE RISK REDUCTION) RULES, 2007**

Citation.

1. These Rules may be cited as the Factories and Other Places of Work (Fire Risk Reduction) Rules 2007.

Interpretation.

2. In these Rules unless the context otherwise requires—

“Class A fire” means a fire involving ordinary combustible material such as paper, wood cloth, rubber or plastic material;

“Class B fire” means a fire involving flammable or combustible liquid, flammable gases, greases or similar material, rubber or plastic material;

“Class C fire” means a fire involving energized electrical equipment where safety to the worker requires the use of electrically non conductive extinguishing media;

“Class D fire” means a fire involving combustible metal such as magnesium, zirconium, sodium, lithium or potassium;

“competent person” in relation to a duty or function, means a person who has had adequate training, relevant qualifications and experience to enable him to perform that duty or function;

“designated area” means an area designated or zoned by Local Authority for use;

“Director” means the Director of Occupational health and Safety Services;

“emergency exit” means a window, door or other exit affording means of escape or giving access to other than the means of exit in ordinary use, in case of a fire;

“fire audit” includes fire risk assessment and fire risk management

“fire detection” includes any action to check or sense fire by use of an instrument or by human action;

“fire drill” means an exercise carried out to prepare people on precautions to be taken in event of a real fire breaking out;

“fire extinguishers” means a portable container of pressurized or gas cartridge propelled extinguishers that can be discharged in a jet or spray to put out the fire;

“fire fighting” means the process of extinguishing fire;

“fire-fighting team” means a team appointed in accordance with Rule 20;

“fire-hose” means a high pressure tube attached to either a fire engine or a fire hydrant, used for extinguishing a fire;

“fire safety auditor” means a competent person authorized by the Director in writing to undertake a fire safety audit in accordance with these Rules;

“flammable” means the capability of a substance to be set on fire or support combustion easily;

“hazard area” means any area associated with any biological, chemical or physical risk to a worker, consumer or other individual or environment.

“highly flammable substance” means a liquid, liquid solution, emulsion, suspension or gas that gives off a flammable vapour at a temperature of less than 32°C;

“risk assessment” means a systematic examination conducted to determine and evaluate the degree of risk involved in terms of severity, frequency and cost of the potential claim in the case of fire;

“risk management” means measures undertaken or put in place to control a risk.

3. These rules shall apply to every workplace, process and operations to which the provisions of the Act apply. Application.

4. A person wishing to set up or operate a facility for the use on or storage of highly flammable substance shall ensure that such facility is located in the designated area. Location of large Installations for highly flammable substances.

5. (1) Every owner and occupier of a workplace shall ensure that every workroom where flammable substances are used, manufactured or manipulated, is constructed with fire resistant material. Construction material.

(2) Fire resistant material shall include—

(a) concrete block, brick work or stone of not less than 115mm thickness;

(b) concrete slab of not less than 76mm thickness;

[Subsidiary]

- (c) iron or steel of not less than 16 Imperial Standard Gauge;
- (d) glass of not less than 64mm thickness in the center of which a wire mesh shall be embedded on;
- (e) teak or oak or other wood for doors of not less than 45mm thickness; and
- (f) any other material as the Director may approve.

(3) A person who contravenes the provisions of this Rule commits an offence.

Storage of highly flammable substances.

6. (1) Every occupier shall ensure that highly flammable substances are stored—

- (a) in suitable fixed storage tanks in safe positions, or
- (b) in suitable closed vessels kept in a safe positions in the open air, and where necessary, protected against direct sunlight; or
- (c) in a suitable closed vessel kept in a storeroom which is either in a safe position or in a fire resisting structure; or
- (d) in the case of a workroom where the aggregate quantity of highly flammable substances does not exceed 50 litres, in suitable closed vessels kept in a suitably placed cupboard or bin which is a fire resisting structure.

Provided that no such store shall be so situated as to endanger the means of escape from a work place or any part thereof in the event of a fire occurring in the store.

(2) Nothing in this Rule shall apply to—

- (a) highly flammable substances in the fuel tanks of vehicles or engines for the purpose of operating the vehicle or engines; or
- (b) any suitable, small closed vessel containing not more than 500c.c. of flammable substances.

(3) Where the highly flammable substance is stored in a storeroom, every occupier shall ensure that a gap of at least 80 cm is maintained from the nearest fixed wall, ceiling or roof of such room.

(4) Every occupier shall ensure that any highly flammable substance capable of reacting and producing heat when mixed is identified and kept in separate storerooms or compartments.

(5) Every occupier shall ensure that any highly flammable substance that is self-combustible, is kept in separate stores away from other substances or material.

[Subsidiary]

(6) A person who contravenes the provisions of this Rule commits an offence.

7. (1) Every occupier shall ensure that every store room, cupboard, bin, tank or container used for storing highly flammable substances is clearly and boldly marked 'Highly Flammable' in English or Kiswahili or otherwise with an appropriate indication of flammability. Marking and labeling

(2) Where it is impracticable to mark any storeroom, cupboard, bin, tank or container, the words 'Highly Flammable' in English or Kiswahili shall be clearly and boldly displayed as near to it as possible.

(3) Every occupier shall ensure that every container holding the highly flammable substance is labelled with the contents of the container and the type of fire extinguisher to be used in the event of a fire.

(4) In labelling a container, every occupier shall refer to the material safely data sheet.

(5) Nothing in this Rule shall apply to—

(a) any fuel tanks of vehicles or engines which contain highly flammable substances for the purpose of operating the vehicle or engines; or

(b) any suitable small closed vessel containing not more than 500 cc of highly flammable substance.

(6) A person who contravenes the provisions of this Rule commits an offence.

8. (1) Every occupier shall ensure that the quantity of any highly flammable substance present at any one time in a workplace, shall be as small as is reasonably practical, having regard to the processes or operations being carried on. Handling of flammable substances.

(2) Every occupier shall ensure that where highly flammable substances are to be conveyed within a workplace, the substances shall be conveyed through a totally enclosed system incorporating pipelines and pumps of similar appliances, but where conveyance of the substances within a work place through a totally enclosed system is not reasonably practical, the substance shall be conveyed in vessels that are so designed and constructed as to avoid spilling of the substance.

(3) Every occupier shall ensure that where in the process or operation, any highly flammable substance liable to be spilled or leaked all reasonable practical steps have been taken to ensure that the substance is contained or immediately drained off to a suitable container or to a safe place or otherwise treated to make it safe.

(4) A person who contravenes the provisions of this Rule commits an

## [Subsidiary]

offence.

## Flammable vapours.

9. (1) Every occupier shall ensure that no means likely to ignite vapour from any highly flammable substances, are present where a dangerous concentration of vapour from flammable substances may reasonably be expected to be present.

(2) Every occupier shall ensure that where in any work place, a dangerous concentration of vapour from highly flammable substances may reasonably be expected to be present, any cotton or other textile waste or other material in that place—

(a) which has been used in such a manner as to render the cotton waste or other material liable to spontaneous combustion; or

(b) which is contaminated with any highly flammable substance, shall be deposited without delay in a metal container with a suitable cover or be removed without delay to a safe place, and separate self-closing receptacles shall be provided in workrooms for oil-soaked waste, rags or other material, subject to spontaneous combustion.

(3) A person who contravenes the provisions of this Rule commits an offence.

## Monitoring of flammable substances.

10. (1) Every occupier shall continuously monitor the work place with a view to making an assessment of any possible fire risks and mitigate against them.

(2) A person who contravenes the provisions of this Rule commits an offence.

## Ventilation.

11. (1) Every occupier shall provide in every workroom, facilities for free flow of fresh air, including windows, doors, vents, louvers or any other suitable ventilation facility to ensure that flammable fumes, vapour, gases or dust do not accumulate in the workroom.

(2) In the case of an enclosed room, every occupier shall ensure that local exhaust ventilation systems or mechanical ventilation facilities are provided.

(3) A person who contravenes the provisions of this Rule commits an offence.

## Hot processes or operations.

12. (1) Every occupier shall ensure that all necessary steps are taken to remove flammable gases or vapours in a workplace or render the gases or vapours non-flammable where the operations or processes involve the application of heat.

(2) A person who contravenes the provisions of this Rule commits an offence.

## House keeping.

13. (1) Every occupier shall ensure that a workplace is kept in a clean

[Subsidiary]

state and that—

- (a) dirt and refuse shall be removed at least once a day;
- (b) the dirt and refuse removed are kept in a receptacle;
- (c) every store shall have a marked gangway of at least one metre wide for the movement of persons; and
- (d) where mobile equipment for transportation of material is in a store, a marked gangway shall be provided to accommodate the size of the equipment and for the use of persons working therein.

(2) A person who contravenes the provisions of this Rule commits an offence.

14. (1) Every occupier shall ensure that finished products, by-products and any waste products are removed immediately they are produced so as to avoid accumulation of products or waste products. Removal of products and waste.

(2) A person who contravenes the provisions of this Rule commits an offence.

15. (1) Every occupier shall ensure that a distance of at least one metre between any two machines or from any machine and a fixed structure is provided, so as to ensure easy movement and access of persons. Machinery layout.

(2) A person who contravenes the provisions of this Rule commits an offence.

16. (1) Every occupier shall ensure that all electrical machines, equipment and hand tools in a workplace are properly earthed or double insulated. Electrical equipment

(2) Every occupier shall ensure that all electrical motors, fittings, attachments and switches shall be spark proof in workplaces where flammable liquids, vapours, dusts and gases are likely to be present.

(3) Every occupier shall ensure that all electrical equipment and the related attachments are inspected in every period of six months by a competent person and a record of the inspection kept.

(4) Every occupier shall take adequate measures to ensure that electrostatic charges do not build up where flammable substances are present.

(5) A person who contravenes the provisions of this Rule commits an offence.

17. (1) Every occupier shall ensure that every work room is fitted with an emergency exit of at least 90 cm wide, situated as far away as possible from the ordinary exit, and located in a manner that the exit will not lead any person to a trap in the work place in the event of a fire breaking out. Fire escape exits.

## [Subsidiary]

(2) Every occupier shall ensure that an external staircase or ramp affording a means of escape in case of a fire is adequately aerated, well lit and of at least one metre width, provided that a spiral staircase shall not be considered as a suitable emergency exit.

(3) Every occupier shall ensure that the fire exit door, gangway and exit staircases are free of obstruction.

(4) Every occupier shall ensure that every emergency exit is distinctively and conspicuously marked in green letters of at least 15 cm in height.

(5) Every occupier shall ensure that every emergency exit route is clearly marked in writing or by signs indicating the direction of exit and that a drawing or map showing evacuation routes shall be posted in prominent positions in the work place.

(6) A person who contravenes the provisions of this Rule commits an offence.

Control of spread of smoke.

18. (1) Every occupier shall ensure that any door of any store where flammable substances are stored are constructed in a manner that the door shall be self closing, opening outwards or sliding and capable of containing smoke from within the work room, in event of a fire.

(2) A person who contravenes the provisions of this Rule commits an offence.

Means of evacuation.

19. (1) Where a work place is a storeyed building, every occupier shall ensure that a work place is constructed in such a manner as to enable workers have access to other suitable outlet or exit for evacuation other than the emergency exits.

(2) A person who contravenes the provisions of this Rule commits an offence.

Formation of fire fighting teams.

20. (1) Every occupier shall establish a fire fighting team that shall consist of—

- (a) at least two persons, where the number of workers is not more than ten;
- (b) at least three persons, where the number of workers is between eleven and twenty five;
- (c) at least five persons, where the number of workers is more than twenty five.

(2) A person who contravenes the provisions of this Rule commits an offence.

21. (1) Every occupier shall ensure that all workers are instructed in the safe use of fire fighting appliances.

[Subsidiary]  
Training in fire safety.

(2) The Minister may, on the advice of the Director, prescribe a basic training course on fire safety to be undertaken by every member of the fire fighting team.

(3) The Minister may, on the advice of the Director, publish once every year, in the Gazette, a list of approved institutions for the training of the fire fighting team.

(4) Every occupier shall ensure that every member of the fire fighting team undertakes the basic fire safety training course within three months from the date of appointment into the fire fighting team.

(5) Every occupier shall cause every member of the fire fighting team to undergo a fire fighting refresher course at least once in every two years.

22. A fire fighting team shall carry out the following functions—

Functions of fire fighting team.

- (a) ensure that all fire fighting appliances, fire detection systems, fire alarm and any other facility for fire safety are in place and are regularly serviced;
- (b) conduct fire drills at the workplace;
- (c) investigate fire incidences at the workplace and recommend corrective measures;
- (d) regularly inspect the workplace for purposes of identifying potential fire risks and recommend remedial measures;
- (e) train other workers in the safe use of fire fighting appliances;
- (f) co-ordinate the evacuation of other workers in the event of a fire; and
- (g) undertake any other functions as may be directed by the occupier.

23. (1) Every occupier shall ensure that fire drills are conducted at least once in every period of twelve months and a record of such drills kept available for inspection.

Fire drills.

(2) A person who contravenes the provisions of this Rule commits an offence.

24. (1) Every occupier shall identify a location in the workplace where every worker shall assemble in the event of a fire.

Assembly point.

(2) A person who contravenes the provisions of this Rule commits an offence.

**[Subsidiary]**

First aid.

25. (1) Every occupier shall make necessary arrangements to provide first aid to any person injured in a fire and in addition, arrange for the transportation of the injured person to the nearest health facility.

(2) A person who contravenes the provisions of this Rule commits an offence.

Means of communication.

26. (1) Every occupier shall provide suitable means of alerting persons in the workplace, in the event of a fire, and such means shall be made known to all workers.

(2) A person who contravenes the provisions of this Rule commits an offence.

Notices.

27. (1) No person shall smoke, light or carry matches, lighters or other flame producing articles or smoking materials, in any place where highly flammable or highly combustible substances are manufactured, used, handled or stored.

(2) A person who contravenes the provisions of this Rule commits an offence.

(3) Every occupier shall take all practicable steps to ensure compliance with the provisions of subsection (1) including such steps as—

(a) displaying at or as near as possible to every work place, a clear and bold notice indicating that smoking is prohibited in that place; and

(b) except in places where smoking is permitted, displaying throughout the work place at every entrance of the workplace, a clear and bold notice indicating that smoking is prohibited.

(4) A person who contravenes the provisions of this Rule commits an offence.

Fire detection system.

28. (1) Every occupier shall provide and maintain fire detection appliances.

(2) Every occupier shall ensure that fire detection appliances are located in the appropriate places for immediate activation of an alarm or automatic fire extinguishing systems.

(3) Every occupier shall ensure that—

(a) fire detection appliances are connected to audible and visual flashing devices to provide a warning to the workers for emergency response; and

(b) fire detection appliances are regularly maintained and that they are inspected at least once every twelve months by a competent person.

[Subsidiary]

(4) A person who contravenes the provisions of this Rule commits an offence.

29. (1) Every occupier shall provide means of extinguishing fire at the workplace. Fire fighting appliances.

(2) Every occupier shall ensure that the position of the means in subsection (1) shall be distinctively and conspicuously marked.

(3) Every occupier shall ensure that any portable fire extinguisher is mounted at an easily accessible height of not less than 60 centimetres from the floor.

(4) Where fire hose reels are provided, every occupier shall ensure that there is at least one fire hose reel within a radius of 30 metres.

(5) A person who contravenes the provisions of this Rule commits an offence.

30. (1) Every occupier shall ensure that all means of extinguishing fire are properly maintained. Maintenance, inspection and testing of cylinders.

(2) The occupier shall —

- (a) Cause inspection and testing of all fire fighting appliances in the work place to be carried out by a competent person at least once every twelve months;
- (b) Keep a record indicating the date of inspection and tests including the name of persons carrying out the inspection and test; and
- (c) Ensure that all cylinders for fire fighting appliances are examined and tested at least once every five years and such tests shall include hydraulic pressure test.

(3) Every occupier shall ensure that any portable fire extinguisher is examined and tested whenever there is —

- (a) evidence of corrosion or mechanical damage;
- (b) repairs on a cylinder by soldering, welding, brazing or use of patching compounds;
- (c) change of cylinder or shell threads; or
- (d) corrosion that has caused pitting or corrosion under removable name plate assemblies.

31. (1) Every occupier shall ensure that, in selecting and distributing fire extinguishers in the workplace, the distribution and selection is based on the classes of fire anticipated and the size and degree of hazard caused by a fire. Selection and distribution of fire extinguishers.

## [Subsidiary]

(2) Where a fire extinguisher is for the use of extinguishing class A fires, every occupier shall ensure that the fire extinguisher is located as near as possible and not more than 10 metres from the hazard area.

(3) Where a fire extinguisher is for the use of extinguishing class B fires, every occupier shall ensure that the extinguisher is located as near as possible and not more than 5 metres from the hazard area.

(4) Where a fire extinguisher is for the use of extinguishing class C fires, every occupier shall ensure that the extinguisher is located as near as possible to all electrically energized equipment and not more than 10 metres from the hazard area.

(5) Where a fire extinguisher is for the use of extinguishing class D fires, every occupier shall ensure that the extinguisher is located as near as possible and not more than 10 metres from the hazard area.

(6) A person who contravenes the provisions of this Rule commits an offence.

Colour coding of pipes.

32. (1) Every occupier shall ensure that all pipes conveying various substances shall be colour-coded for the purpose of identification.

(2) Every occupier shall ensure that pipes carrying water for fire fighting shall be painted in red.

(3) Every occupier shall ensure that fire fighting appliances are coded in the following manner—

<i>Extinguishing agent</i>	<i>Extinguisher body colour</i>
Water	Red
Foam	Cream
Powder (all types)	Blue
Carbon dioxide	Black

(4) A person who contravenes the provisions of this Rule commits an offence.

Water storage.

33. (1) Every occupier shall ensure that—

(a) the work place has access to water and water storage facility capable of storing at least 10,000 litres of water;

(b) the water storage facility is kept full at all times, for use in event of fire;

(c) the water pressure in the fire fighting system is capable of raising water to the highest point of the workplace in the event of a fire;

[Subsidiary]

(d) where hose reels are used, and the storage water reservoir is at ground level or underground, an isolated water pump shall be provided.

(2) A person who contravenes the provisions of this Rule commits an offence.

34. (1) Every occupier shall establish and implement a written fire safety policy, outlining the organization and arrangements for carrying out the policy. Fire safety policy.

(2) Every occupier shall ensure that all workers are informed on the contents of the policy which shall include—

(a) evacuation procedures;

(b) provision for maintenance and inspection of fire fighting appliances and fire detection systems;

(c) training of workers on fire extinguishing techniques;

(d) assignment of responsibility to individual persons within the organization for fire prevention and control;

(e) planning and organization of fire drills; and

(f) Identification of assembly points.

(3) A person who contravenes the provisions of this Rule commits an offence.

35. (1) Every occupier shall notify any fire occurring in the workplace to the nearest occupational safety and health area office within 24 hours of its occurrence and send a written report in the prescribed form within 7 days to the director. Notification of fire occurrence.

(2) A person who contravenes the provisions of this Rule commits an offence.

36. (1) Every occupier shall cause a fire safety audit of the work place to be taken at least once every twelve months by an approved fire safety auditor. Fire safety audit.

(2) The cost in connection with such audits shall be paid by the occupier.

(3) The occupier shall keep the report of the fire safety audit for the purposes of these rules and the fire safety auditor shall submit a copy of the same to the Director within fourteen days from the date of the audit.

(4) A person who contravenes the provisions of this Rule commits an offence.

**[Subsidiary]**

Approval of fire safety auditors.

37. (1) The Director may invite applications by competent persons for approval to serve as fire safety auditors.

(2) The Director shall consider all applications received and approve suitable persons to serve as fire safety auditors for the purpose of these Rules.

(3) The Director may develop written criteria for approval of fire safety auditors.

(4) The Minister may, on the advice of the Director, by a notice in the Gazette notify appointment made under paragraph (2) and maintain a register of all persons appointed there under.

(5) Every fire safety auditor shall be issued with a certificate by the Director, upon payment of the prescribed fee.

(6) The certificate issued under paragraph 5 shall be renewable annually.

Duties of fire safety auditors.

38. The fire safety auditor shall—

- (a) carry out a fire safety audit of the workplace at the request of the occupier.
- (b) advise the occupier and the members of the safety and health committees on fire matters arising from the audit report.
- (c) submit a copy of the audit report to the Director within 14 days from the date of the audit.

Offences.

39. An occupier or owner who contravenes any of the provisions of these Rules commits an offence and is liable, on conviction to penalties provided under the Act.

L.N. 60/2007.

**THE FACTORIES AND OTHER PLACES OF WORK (HAZARDOUS SUBSTANCES) RULES, 2007**

Citation.

1. These rules may be cited as the factories and other places of work (Hazardous Substances) rules, 2007.

Interpretation.

2. In these rules, except where the context otherwise requires—  
 “air quality monitor” means any competent person who is authorized by the director, by a certificate in writing, to carry out monitoring and measurements of the substances in the air.

“biological monitoring” means a technique for measuring the presence of a chemical or its metabolites in tissues or excreta or for measuring pathological effects of toxin on the person;

“competent person” in relation to any duty or function, means a person

[Subsidiary]

who has adequate training, relevant qualifications and experience to enable him to perform that duty or function;

“designated sites” means a site designated or zoned by Local Authority for use of that purpose;

“Director” means the Director of Occupational Safety and Health Services;

or occupier.

“employer” includes owner and / or occupier;

“Engineering Controls Examiner” means any competent person who is authorized by the Director in writing, to carry out thorough examination and test of engineering control measures for the purposes of these rules;

“guidelines” means the guidelines describing the methodology for implementation of health and safety under these Rules ;

“harmful substance” means any substance whether liquid, solid or gaseous which is hazardous or potentially hazardous to human or the environment and includes objectionable odours, radio-activity, noise and temperature;

“hazardous substances” means any chemical, waste, gas, medicine, drug, plant, animal or microorganism which are likely to be injurious to human health or the environment;

“measurement” means periodic evaluation of workplaces and organizational management systems in a factory or workplace for prevention of accidents, occupational diseases, ill-health or damage to property;

“occupational exposure limit” (OEL) means the levels of exposure or discharge or emissions as set out in Schedule 1 to these Rules;

“worker” includes a person who has entered into or works under a contract of service or apprenticeship, written or oral, express or implied, whether by way of manual labour or otherwise;

“workplace” includes any land, premises, location, vessel or thing at, in, upon or near where an employee is, in the course of employment;

“substance” includes any solid, liquid, vapour, gas or aerosol, or combination thereof;

3. These Rules shall apply to—

Application.

(1) Every factory, premises, places, process, operation, or work to which the provisions of the Factories and Other Places of Work Act apply.

(2) Every employer, occupier or owner, agent, self-employed person or

**[Subsidiary]**

employee.

Shared responsibilities by employers.

4. Whenever two or more employers, self-employed persons or their agents undertake activities simultaneously at one workplace, they shall have the duty to collaborate in order to comply with the prescribed measures without prejudice to the responsibility of each employer for the health and safety of his employees.

Exposure limits.

5. (1). Every employer shall ensure that exposure of hazardous substance does not exceed the exposure limits set out in schedule 1 to these Rules.

(2) A person who contravenes this Rule commits an offence.

(3) Where the exposure limit of a hazardous substance is not provided for in Schedule 1 to these Rules, it shall be the responsibility of a supplier or manufacturer of such substance to provide a provisional exposure limit.

(4) When two or more hazardous substances are present simultaneously in the working atmosphere and their combined effects have to be considered, Schedule 2 to these Rules shall apply.

(5) The Government Chemist or any other laboratory approved by the director shall carry sample analysis of hazardous substances and biological samples to determine exposure levels and biological exposure indices respectively.

Amendment of Schedules.

6. The Minister may, on the advice of the Director, by notice in the Gazette, amend the Schedules to—

(a) vary the exposure limit;

(b) prohibit the use of a hazardous substance that may contaminate the working environment;

(c) specify particular measures of prevention or protection from the effects of a hazardous substance; or

(d) prescribe any other exposure limit of a hazardous substance.

Control measures.

7. (1) It shall be the duty of every employer to prevent his employees from being exposed to hazardous substance.

(2) Where it is not reasonably practical to prevent the exposure, it shall be the duty of every employer to control the exposure of employees from hazardous substances by—

(a) limiting the amount of hazardous substances used which may contaminate the working environment;

(b) limiting the number of employees who will be exposed or may

[Subsidiary]

be exposed;

- (c) using a substitute for the hazardous substance;
- (d) limiting the period during which an employee will be exposed or may be exposed;
- (e) introducing engineering control measures for the control of exposure, which may include the following:
  - (i) process separation, automation or enclosure;
  - (ii) installation of local extraction ventilation systems to processes, equipment and tools for the control of emission of an air borne hazardous substances;
  - (iii) use of wet methods;
  - (iv) separate workplaces for different processes;
- (f) introducing appropriate work procedures which an employee must follow where materials are used or processes are carried out which could give rise to exposure of an employee and that procedures shall include written instructions to ensure:
  - (i) that a hazardous substance is safely handled, used and disposed of;
  - (ii) that process machinery, installations, equipment, tools and local extraction and general ventilation systems are safely used and maintained;
  - (iii) that machinery and workplaces are kept clean; and
  - (iv) that early procedures are in place for corrective action.

(3) A person who contravenes this Rule commits an offence.

8. (1). Where it is not reasonably practical to ensure that the exposure of an employee is adequately controlled as contemplated in Rules 7, the employer shall—

Personal protective equipment.

- (a) in the case of an air borne hazardous substances, provide the employee with suitable respiratory protective equipment and protective clothing; and
- (b) in case of hazardous substances which can be absorbed through the skin, provide the employee with suitable impermeable protective equipment.

(2) Where respiratory protective equipment is provided, the employer

[Subsidiary]

shall ensure—

- (a) that the relevant equipment is capable of controlling the exposure to below the occupational exposure limit for the relevant hazardous substances
- (b) that the relevant equipment is correctly selected and properly used;
- (c) that information, instructions, training and supervision which is necessary with regard to the use of the equipment is known to the employees; and
- (d) that the equipment is kept in good condition and efficient working order.

(3) Every employer shall—

- (a) issue unused personal protective equipment to an employee, unless the relevant protective equipment is decontaminated and sterilized;
- (b) provide separate containers or storage facility for personal protective equipment ; and
- (c) ensure that all personal protective equipment not in use is stored only in the place provided.

(4) Every employer shall ensure that all contaminated personal protective equipment is cleaned and handled in accordance with the following procedures—

- (a) where the equipment is cleaned on the premises of the employer, care shall be taken to prevent contamination during handling, transportation and cleaning;
- (b) where the equipment is sent out the premises to a contractor for cleaning purposes—
  - (i) the equipment shall be packed in impermeable containers;
  - (ii) the containers shall be tightly sealed and have clear indication thereon that the contents thereof are contaminated; and
  - (iii) the relevant contractor shall be fully informed of the requirements of these rules and the precautions to be taken for the handling of the contaminated equipment.

(5) Subject to the provisions of sub rule 4 ( b ), an employer shall ensure that no person removes dirty or contaminated personal protective equipment from the premises; Provided that where contaminated personal protective equipment has to be disposed of, it shall be treated as waste .

[Subsidiary]

(6) Every employer shall, provide employees using personal protective equipment with—

- (a) adequate washing facilities which are readily accessible and located in a an area where the facilities will not become contaminated, in order to enable the employees to meet a standard of hygiene consistent with the adequate control of exposure, and to avoid the spread of hazardous substances
- (b) two separate lockers separately labeled “Protective clothing” and “Personal clothing”, and ensure that the clothing is kept separately in the appropriate locker ; and
- (c) separate “clean” and “dirty” changing rooms if the employer uses or processes hazardous substances to the extent that the hazardous substances could endanger the health of employees.

(7) A person who contravenes this Rule commits an offence.

9. Every employer shall ensure:

Maintenance and testing of engineering controls.

(1) That all control equipment and facilities provided are maintained in good working order; and

(2) That thorough examinations and tests of engineering control measures are carried out at intervals not exceeding 24 months by an engineering controls examiner and a report issued.

(3) A person who contravenes this Rule commits an offence.

10. An engineering controls examiner shall submit a signed report to the Director within thirty days following such examination and test.

Submission of report.

11.(1) Every employer shall ensure that any processes involving a significant risk of exposure to carcinogenic, radioactive, mutagenic or teratogenic substances shall be performed within an enclosed system so as to prevent any exposure of the workers to the substance.

Protection against radioactive and carcinogenic substances.

(2) Where any of the processes may involve use of carcinogenic, radioactive, mutagenic or teratogenic substances, every employer shall ensure that such processes are automated or are conducted by use of remote controlled systems.

(3) Every employer shall issue a permit to work certificate to any person carrying out maintenance and service of an enclosed system.

(4) A person who contravenes this Rule commits an offence.

12. (1) Every manufacturer or agent of hazardous substances shall supply information on the characteristics of such substances as regards to the health effects of the substances on human health.

Material Safety Data Sheet.

[Subsidiary]

(2) Every person who manufactures, imports, sells or supplies any hazardous substance for use at work shall ensure that the substance is accompanied by a material safety data sheet containing all the information set out in schedule 3 to these Rules.

(3) Every employer who uses any hazardous substance at work shall be in possession of a copy of material safety data sheet for each type of substance in use at his premises.

(4) Every employer shall make the material safety data sheet available for inspection at the request of any person interested or affected.

(5) Every employer shall provide full information on the composition and properties of a product to the Director, when called upon to do so.

(6) A person who contravenes this Rule commits an offence.

Disposal of hazardous substances.

13. (1) Every employer shall ensure that the quantity of waste from hazardous substances in his use are kept at reasonable minimum levels and that such waste is disposed of in a manner less harmful to human and the environment, including—

- (a) recycling the waste material where applicable;
- (b) depositing of hazardous waste substances into containers that will prevent the likelihood of exposure during handling;
- (c) ensuring that all vehicles, re-usable containers and covers which have been in contact with hazardous waste substances are cleaned and decontaminated after use in such a way that the vehicle, containers or covers do not cause a hazard to human and environment.
- (d) ensuring that all employees employed in the collection, transportation and disposal of harmful waste substances are not exposed to the harmful waste and are provided with suitable personal protective equipment;
- (e) ensuring that all hazardous waste substances is disposed off only on specifically designated sites for this purpose.

(2) A person who contravenes this Rule commits an offence.

Labeling of containers.

14. (1) Every manufacturer or supplier of hazardous substances shall ensure that the hazardous substance is marked or labeled in a distinctive manner indicating the nature of their contents, health hazards and instructions for safe handling of the substance .

(2) Every manufacturer or supplier of a hazardous substance shall ensure

[Subsidiary]

that the chemical or common name used to identify the chemical on the label shall be the same as that used on the material safety data sheet.

(3) A person who contravenes this Rule commits an offence.

15.(1) It shall be the duty of every employer to inform the workers of the hazards associated with exposure to chemicals used at the workplace and every employer shall facilitate the training of his worker on safety by— Training and Information.

- (a) instructing the workers how to obtain and use the information provided on labels and chemical safety data sheets;
- (b) using the chemical safety data sheets, along with information specific to the workplace, as a basis for the preparation of instructions to workers, which should be written if appropriate;

(2) Every employer shall ensure that workers are trained and certified by a competent person, on continuing basis in the practices and procedures to be followed for safety in the use of chemicals at work.

(3) Every employer shall, before any employee is exposed, ensure that the employee is adequately and comprehensively informed and trained, and is thereafter informed and trained at intervals as may be recommended by the health and safety committee or by the Director, with regard to—

- (a) the contents and scope of these rules;
- (b) the potential source of exposure;
- (c) the potential risks to health caused by exposure
- (d) the potential detrimental effects of exposure on his or her reproductive ability;
- (e) the measure to be taken by the employers to protect an employee against any risk from exposure;
- (f) the precaution to be taken by an employee to protect himself against the health risks associated with the exposure, including the wearing and use of protective clothing and respiratory protective equipment;
- (g) the necessary, correct use, maintenance and potential of safety equipment, facilities and engineering control measures provided;
- (h) the necessity of personal air sampling and medical surveillance ;
- (i) the importance of good housekeeping at the workplace and personal hygiene;
- (j) the safe working procedures regarding the use, handling, storage and labeling of the chemical and other hazardous substance at the workplace; and

[Subsidiary]

(k) procedures to be followed in the event of spillages, leakages or any similar emergency situation which could take place by accident;

(4) Every employer shall give written instructions to the drivers of vehicles carrying the hazardous substances, the procedures to be followed in the event of spillages, leakages or any similar emergency situation which could take place by accident.

Air monitoring and  
Measurement.

16. (1) In every workplace where hazardous substances are used the employer shall ensure that measurements of the substances in the air are carried out at least once every twelve months by a certified air quality monitor, in order to determine the prevailing occupational exposure levels.

(2) The costs in connection with such measurements shall be met by the employer.

(3) The results of measurement of the substances in the air shall be recorded and shall specify—

- (a) date, time and period of sampling;
- (b) nature of work/process evaluated;
- (c) number of the workers exposed;
- (d) measuring methods including analytical methods;
- (e) type of measurements (e.g. dust, fumes, vapor);
- (f) results of measurements;
- (g) recommendations for remedial measures to be taken; and
- (h) name of the person taking the measurements.

(4) Every employer shall keep a copy of the report of the results of measurements carried out for a period of two years.

(5) An Air Quality Monitor shall submit a signed copy of the report of the results of measurements to the director within a period of thirty days from the date of carrying out the measurements.

(6) Where the Air Quality Monitor is of the opinion that occupational exposure levels pose imminent danger to workers' health he shall immediately and not later than 48 hours, inform the Occupational Safety and Health officer of the area.

Duty of competent  
persons.

17.(1) Every Air Quality Monitor shall regularly inspect, calibrate and maintain equipment for measuring air contaminants.

(2) It shall be the duty of a competent person to carry out biological

[Subsidiary]

monitoring with the consent of the employee.

(3) A competent person shall inform employees on the scope of biological monitoring and on the significance of the results;

18. The director may review and issue guidelines, on how the monitoring of air contaminants shall be carried out. Guidelines on hazardous substances.

19. It shall be the duty of every employee— Duty of Employees.

(a) not to interfere with or misuse any means, appliance, convenience or any other thing provided for securing the health, safety or welfare of him or others at the workplace;

(b) to make use of any means, appliance, convenience or any other thing provided for securing the health, safety or welfare of himself or others at the workplace;

(c) not to, without reasonable cause do anything likely to endanger himself or any other person at the workplace;

(d) to report forthwith to the supervisor or any other person having authority over him, any situation which he has reason to believe would present a hazard; and

(e) to report to his supervisor any accident or injury that arises in the course of or in connection with his work.

19. In every workplace where hazardous substances are in use, the employer shall ensure that the worker undergoes medical examination in accordance with the requirements of the Factories and Other Places of Work (Medical Examination) Rules, 2005. Medical examination.

20. Any person who contravenes or fails to comply with any provision of these rules shall commit an offence and the provisions of the Act on offences and penalties shall mutatis mutandis apply. Offences and penalties.

[Subsidiary]

**THE FACTORIES AND OTHER PLACES OF WORK (HAZARDOUS SUBSTANCES)  
RULES, 2007**

## SCHEDULE 1

rule5(1)

TABLE 1

OEL-CL: OCCUPATIONAL EXPOSURE LIMITS – CONTROL LIMITS FOR  
HAZARDOUS CHEMICAL SUBSTANCES

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	Notes
Acryl amide	CH <sub>2</sub> =CHCONH <sub>2</sub>	-	0.3	-	-	Sk
Acrylonitrile	CH <sub>2</sub> =CHCN	2	4	-	-	Sk
Arsenic & compounds, except arsine (as As)	As	-	0.1	-	-	
*Asbestos (see note)						
Benzene	C <sub>6</sub> H <sub>6</sub>	5	16	-	-	-
Bis (chloromethyl) ether (BCME)	CICH <sub>2</sub> OCH <sub>2</sub> CI	0.00				
Buta-1,3-diene	CH <sub>2</sub> =CHCH=CH <sub>2</sub>	1	0.005	-	-	
2-Butoxyethanol	C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	10	22	-	-	
Cadmium & Cadmium compounds, except cad- mium oxide fume and Cadmium sulphide pigments (as Cd)	Cd	25	120	-	-	Sk
Cadmium oxide fume (as Cd)	CdO	-	0.05	-	0.05	
Cadmium sulphide pigments (respirable dust Cd)	CdS	-	0.04	-	-	
Carbon disulphide	CS <sub>2</sub>	10	30	-	-	Sk
Chromium (VI) compounds (as Cr)	Cr	-	0.05	-	-	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
1,2-Dibromoethane (ethylene dibromide)	BrCH <sub>2</sub> CH <sub>2</sub> Br	0.5	4	-	-	Sk
Dichloromethane	CH <sub>2</sub> Cl <sub>2</sub>	100	350	-	-	
2,2'-Dichloro-4,4' methylene dianiline (MBOCA)	CH <sub>2</sub> ·(C <sub>6</sub> H <sub>3</sub> ClNH <sub>2</sub> ) <sub>2</sub>	-	0.005	-	-	Sk
2-Ethoxyethanol	C <sub>2</sub> H <sub>5</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	10	37	-	-	Sk
2-Ethoxyethyl acetate	C <sub>2</sub> H <sub>5</sub> OCH <sub>2</sub> OOCCH <sub>3</sub>	10	54	-	-	Sk
Ethylene oxide	CH <sub>2</sub> CH <sub>2</sub> O	5	10	-	-	
Formaldehyde	HCHO	2	2.5	2	2.5	
*Grain dust		-	10	-	-	Sen
Hydrogen cyanide	HCN	-	-	10	10	Sk
Isocyanates, all (as- NCO)		-	0.02	-	0.07	Sen
*Lead and compounds						
2-Methoxyethanol	CH <sub>3</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	5	16	-	-	Sk
2-Methoxyethyl acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> O	5				Sk
	CH <sub>3</sub>		24	-	-	
Nickel	Ni	-	0.5	-	-	
Nickel, inorganic compounds (as Ni)	Ni	-	0.1	-	-	
soluble compounds		-	0.5	-	-	
insoluble compounds						
Rubber process dust		-	8	-	-	
Rubber fume		-	0.6	-	-	
Silica, crystalline respirable dust	SiO <sub>2</sub>	-	0.4	-	-	
Styrene	C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub>	100	420	250	1050	
1,1,1-Trichloroethane	CH <sub>3</sub> CCl <sub>3</sub>	350	1900	450	2450	
Trichloroethylene	CCl <sub>2</sub> =CHCl	100	535	150	802	Sk
**Vinyl chloride	CH <sub>2</sub> =CHCl	7	-	-	-	
Vinylidene chloride	CH <sub>2</sub> =CCl <sub>2</sub>	10	40	-	-	
Wood dust (hard wood)		-	5	-	-	Sen

\*Note

(a) The concentration of "respirable dust" shall be determined from the fraction passing a size selector with an efficiency that will allow—

- (a) 100% particles of 1 µm aerodynamic diameter,
- (ii) 50% particles of 5 µm aerodynamic diameter,
- (iii) 20% particles of 6 µm aerodynamic diameter,
- (iv) 0% particles of 7 µm aerodynamic diameter.

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**[Subsidiary]***(b) Asphyxiant substances.*

1. Some gases and vapours, when present at high concentration in air, act as simple Asphyxiants by reducing the oxygen content by dilution to such an extent that life cannot be supported. Many asphyxiants are odourless, colourless and not readily detectable. Monitoring the oxygen content of the air is often the best means of ensuring safety. The oxygen content of air in the workplace should never be allowed to fall below a minimum of 18% by volume under normal atmospheric pressure. Particular care is necessary when dense asphyxiants e.g. argon are used, since very high localised concentrations can arise owing to their collecting in pits, confined spaces and other low lying areas where ventilation is likely to be poor.

2. Many asphyxiants present a fire or explosion risk. The concentration at which these risks can arise are liable to be well below those levels at which asphyxiation is likely to occur and should be taken in to account when assessing the hazards.

*(c) OEL for asbestos*

Amosite 0.5 fiber > 5µm/cc

Chrysolite 2 fibers > 5µm/cc

Crocidolite 0.2 fiber > 5µm/cc

Other forms 2 fiber > 5µm/c

*(d) OEL for Lead and its compounds*

Lead 0.15 mg/m<sup>3</sup>

Tetra-ethyl Lead 0.10 mg/m<sup>3</sup>

\*\*Vinyl chloride is also subject to an overriding annual TWA OEL- CL of 3 ppm.

[Subsidiary]

TABLE 2  
OEL-RL: OCCUPATIONAL EXPOSURE LIMIT – RECOMMENDED LIMIT FOR  
HAZARDOUS CHEMICAL SUBSTANCES

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Acetaldehyde	CH <sub>3</sub> =CHO	100	180	150	270	
Acetic acid	CH <sub>3</sub> COOH	10	25	15	37	
Acetic anhydride	(CH <sub>3</sub> CO) <sub>2</sub> O	-	-	-	20	
Acetone	CH <sub>3</sub> COCH <sub>3</sub>	750	1780	1500	3560	
Acetonitrile	CH <sub>3</sub> CN	40	70	60	105	
o-Acetylsalicylic acid	CH <sub>3</sub> COOC <sub>6</sub> H <sub>4</sub> CO OH	-	5	-	-	
Acrylaldehyde (Acrolein)	CH <sub>2</sub> =CHCHO	0.1	0.25	0.3	0.8	
Acrylic acid	CH <sub>2</sub> =CHCOOH	10	30	20	60	
Aldrin (ISO)	C <sub>12</sub> H <sub>8</sub> Cl <sub>6</sub>	-	0.25	-	0.75	Sk
Allyl alcohol	CH <sub>2</sub> =CHCH <sub>2</sub> OH	2	5	4	10	Sk
Allyl chloride	CH <sub>2</sub> =CHCH <sub>2</sub> Cl	1	3	2	6	
Allyl 2,3-epoxypropyl ether	CH <sub>2</sub> =CHCH <sub>2</sub> OCH <sub>2</sub> CHCH <sub>2</sub> O	5	22	10	44	Sk
Allyl glycidyl ether (AGE)	CH <sub>2</sub> =CHCH <sub>2</sub> OCH <sub>2</sub> CHCH <sub>2</sub> O	5	22	10	44	Sk
Aluminium alkyl compounds		-	2	-	-	
*Aluminium metal	A1					
total inhalable dust		-	-	-	-	
respirable dust		-	-	-	-	
*Aluminium oxides	Al <sub>2</sub> O <sub>3</sub> Al(OH) <sub>3</sub> and AlOOH					
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Aluminium salts, soluble		-	2	-	-	
Aminodimethyl-benzene	(CH <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> NH <sub>2</sub>	2	10	10	50	Sk
2-Aminoethanol	NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH	3	8	6	15	
2-Aminopyridine	NH <sub>2</sub> C <sub>5</sub> H <sub>4</sub> N	0.5	2	2	8	
Ammonia	NH <sub>3</sub>	25	17	35	24	
Ammonium chloride, fume	NH <sub>4</sub> Cl	-	10	-	20	
Ammonium sulphamidate	NH <sub>2</sub> SO <sub>3</sub> NH <sub>4</sub>	-	10	-	20	
n-Amyl acetate	CH <sub>3</sub> COOC <sub>5</sub> H <sub>11</sub>	100	530	150	800	
sec-Amyl acetate	CH <sub>3</sub> COOCH(CH <sub>3</sub> ) C <sub>5</sub> H <sub>7</sub>	-	-	150	800	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Boron oxide	B <sub>2</sub> O <sub>3</sub>	-	10	-	20	
Boron tribromide	BBr <sub>3</sub>	-	-	1	10	
Boron trifluoride	BF <sub>3</sub>	-	-	1	3	
Bromacil (ISO)	C <sub>9</sub> H <sub>13</sub> BrN <sub>2</sub> O <sub>2</sub>	1	10	2	20	
Bromine	Br <sub>2</sub>	0.1	0.7	0.3	2	
Bromine pentafluoride	BrF <sub>5</sub>	0.1	0.7	0.3	2	
Bromochloromethane	CH <sub>2</sub> BrCl	200	1050	250	1300	
Bromoethane	C <sub>2</sub> H <sub>5</sub> Br	200	890	250	1110	
Bromoethylene	CH <sub>2</sub> =CHBr	5	20	-	-	
Bromoform	CHBr <sub>3</sub>	0.5	5	-	-	Sk
Bromomethane	CH <sub>3</sub> Br	5	20	15	60	Sk
Bromotrifluoromethane	CF <sub>3</sub> Br	1000	6100	1200	7300	
Aniline	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	2	10	5	20	Sk
Anisidines, 0- and p-isomers	NH <sub>2</sub> C <sub>6</sub> H <sub>4</sub> OCH <sub>3</sub>	0.1	0.5	-	-	Sk
Antimony & compounds (as Sb)	Sb	-	0.5	-	-	
Arsine	AsH <sub>3</sub>	0.05	0.2	-	-	
Asphalt, petroleum fumes		-	5	-	10	
Aspirin	CH <sub>3</sub> COOC <sub>6</sub> H <sub>4</sub> COOH	-	5	-	-	
Atrazine (ISO)	C <sub>8</sub> H <sub>14</sub> ClN <sub>5</sub>	-	10	-	-	
Azinphos-methyl (ISO)	(CH <sub>3</sub> O) <sub>2</sub> PSSCH <sub>2</sub> (C <sub>7</sub> H <sub>4</sub> N <sub>3</sub> O)	-	0.2	0.6	-	Sk
Aziridine	CH <sub>2</sub> CH <sub>2</sub> NH	-	10	-	-	
γ-BHC (ISO)	C <sub>6</sub> H <sub>3</sub> Cl <sub>4</sub>	-	0.5	-	1.5	Sk
Barium compounds, soluble (as Ba)	Ba	-	0.5	-	-	
Barium sulphate, respirable dust	BaSO <sub>4</sub> C <sub>14</sub> H <sub>18</sub> N <sub>4</sub> O <sub>3</sub>	-	2 10	-	- 15	
Benomyl (ISO)	C <sub>6</sub> H <sub>5</sub> SH	0.5	2	-	-	
Benzenethiol						
Benzene- 1,2,4-tricarboxylic acid 1,2-anhydride	C <sub>9</sub> H <sub>4</sub> O <sub>5</sub>	-	0.04	-	-	San
p-Benzoquinone	C <sub>9</sub> H <sub>4</sub> O <sub>2</sub>	0.1	0.4	0.3	1.2	
Benzoyl peroxide	(C <sub>6</sub> H <sub>5</sub> CO) <sub>2</sub> O <sub>2</sub>	-	5	-	-	
Benzyl butyl phthalate	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> COOC <sub>6</sub> H <sub>4</sub> - COOC <sub>4</sub> H <sub>9</sub>	-	5	-	-	
Benzyl chloride	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> Cl	1	5	-	-	
Beryllium	Be	-	0.002	-	-	
Biphenyl	(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub>	0.2	1.5	0.6	4	
2,2-Bis(p-methoxy- phenyl)-1,1,1- trichloroethane	C <sub>14</sub> H <sub>9</sub> Cl <sub>3</sub>	-	1	-	3	
Bis(2,3-epoxypropyl) ether	(OCH <sub>2</sub> CHCH <sub>2</sub> ) <sub>2</sub> O	0.1	0.6	-	-	
Bis(2-ethylhexyl phthalate)	C <sub>6</sub> H <sub>4</sub> -(COOCH <sub>2</sub> CH(C <sub>2</sub> H <sub>5</sub> )-C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	-	5	-	10	
2,2-Bis(p-melho-xyphenyl) -1,1,1-trichloroethane	C <sub>16</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>2</sub>	-	10	-	-	

Substance	Formula	[Subsidiary]				Notes
		TWA OEL-CL		SHORT TERM OEL-CL		
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Bismuth telluride	Bi <sub>2</sub> Te <sub>3</sub>	-	10	-	20	
Bismuth telluride, seleniumdoped	Bi <sub>2</sub> Te <sub>3</sub>	-	5	-	10	
Borates, (tetra) sodium salts anhydrous	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	-	1	-	-	
decahydrate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10H <sub>2</sub> O	-	5	-	-	
pentahydrate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·5H <sub>2</sub> O	-	1	-	-	
Butane	C <sub>4</sub> H <sub>10</sub>	600	1430	750	1780	
Butan-1-ol	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH	-	-	50	150	Sk
Butan-2-ol	CH <sub>3</sub> CH <sub>2</sub> CHOHCH <sub>3</sub>	100	300	150	450	
Butan-2-one	CH <sub>3</sub> COC <sub>2</sub> H <sub>5</sub>	200	590	300	885	
trans-But-2-enal	CH <sub>3</sub> CH=CHCHO	2	6	6	18	
Butyl acetate	CH <sub>3</sub> COO(CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	150	710	200	950	
sec-Butyl acetate	CH <sub>3</sub> COOCH(CH <sub>3</sub> ) CH <sub>2</sub> CH <sub>3</sub>	200	950	250	1190	
tert-Butyl acetate	CH <sub>3</sub> COOC(CH <sub>3</sub> ) <sub>3</sub>	200	950	250	1190	
Butyl acrylate	C <sub>8</sub> H <sub>12</sub> O <sub>2</sub>	10	55	-	-	
n-Butyl alcohol	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH	-	-	50	150	Sk
sec-Butyl alcohol	CH <sub>3</sub> CH <sub>2</sub> CHOHCH <sub>3</sub>	100	300	150	450	Sk
tert-Butyl alcohol	(CH <sub>3</sub> ) <sub>3</sub> COH	100	300	150	450	
n-Butylamine	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub>	-	-	5	15	
Butyl benzyl phthalate	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> COOC <sub>6</sub> H <sub>4</sub> - COOC <sub>4</sub> H <sub>9</sub>	-	5	-	-	
n-Butyl chloroformate	ClCO <sub>2</sub> C <sub>4</sub> H <sub>9</sub>	1	5.6	-	-	
Butyl-2,3-epoxy-propyl ether	C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CHCH <sub>2</sub> O	25	135	-	-	
n-Butyl glycidyl ether (BGE)	C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CHCH <sub>2</sub> O	25	135	-	-	
Butyl lactate	C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>	5	25	-	-	
2-sec-Butylphenol	C <sub>2</sub> H <sub>5</sub> (CH <sub>3</sub> )CHC <sub>6</sub> H <sub>4</sub> OH	5	30	-	-	Sk
Caesium hydroxide	CsOH	-	2	-	-	
Calcium carbonate	CaCO <sub>3</sub>	-	-	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Calcium cyanamide	CaNC=N	-	0.5	-	1	
Calcium hydroxide	Ca(OH) <sub>2</sub>	-	5	-	-	
Calcium oxide	CaO	-	2	-	-	
Calcium silicate		-	-	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Camphor, synthetic	C <sub>10</sub> H <sub>16</sub> O	2	12	3	18	
g-Caprolactam dust	NH(CH <sub>2</sub> ) <sub>5</sub> CO	-	1	-	3	
vapour		5	20	10	40	
Captafol(ISO)	C <sub>10</sub> H <sub>9</sub> Cl <sub>4</sub> NO <sub>2</sub> S	-	0.1	-	-	Sk
Captan(ISO)	C <sub>9</sub> H <sub>9</sub> Cl <sub>3</sub> NO <sub>2</sub> S	-	5	-	15	
Carbaryl (ISO)	C <sub>10</sub> H <sub>7</sub> OCONHCH <sub>3</sub>	-	5	-	10	
Carbuforan (ISO)	C <sub>12</sub> H <sub>15</sub> NO <sub>3</sub>	-	0.1	-	-	
Carbon black	C	-	3.5	-	7	
Carbon dioxide	CO <sub>2</sub>	5000	9000	15000	27000	
Carbon monoxide	CO	50	55	300	330	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Carbon tetrabromide	CBr <sub>4</sub>	0.1	1.4	0.3	4	
Carbon tetrachloride	CCl <sub>4</sub>	2	12.6	-	-	Sk
Carbonyl chloride	COCl <sub>2</sub>	-	0.4	-	-	Sk
Catechol	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	5	20	-	-	
Cellulose						
total inhalable dust		-	10	-	20	
respirable dust		5	-	-	-	
Cement						
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Chlordane (ISO)	C <sub>10</sub> H <sub>6</sub> Cl <sub>8</sub>	-	0.5	-	2	Sk
Chlorinated biphenyls (42% chlorine)	C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub> (approx)	-	1	-	2	Sk
Chlorinated biphenyls (54% chlorine)	C <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub> C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub>	-	0.5	-	1	Sk
Chlorine	Cl <sub>2</sub>	0.5	1.5	1	3	Sk
Chlorine dioxide	ClO <sub>2</sub>	0.1	0.3	0.3	0.9	
Chlorine trifluoride	ClF <sub>3</sub>	-	-	0.1	0.4	
Chloroacetaldehyde	ClCH <sub>2</sub> CHO	-	-	1	3	
2-Chloroacetophenone	C <sub>6</sub> H <sub>4</sub> COCH <sub>2</sub> Cl	0.05	0.3	-	-	
Chloroacetylchloride	ClCH <sub>2</sub> COCl	0.05	0.2	-	-	
Chlorobenzene	C <sub>6</sub> H <sub>5</sub> Cl	50	230	-	-	
Chlorobromomethane	CH <sub>2</sub> BrCl	200	1050	250	1300	
2-Chlorobuta-1,3-diene	CH <sub>2</sub> =CClCH=CH <sub>2</sub>	10	36	-	-	Sk
Chlorodifluoromethane	CHClF <sub>2</sub>	1000	3500	-	-	
1-Chloro-2,3-epoxy-propane	OCH <sub>2</sub> CHCH <sub>2</sub> Cl	2	8	5	20	Sk
Chloroethane	C <sub>2</sub> H <sub>5</sub> Cl	1000	2600	1250	3250	
2-Chloroethanol	ClCH <sub>2</sub> CH <sub>2</sub> OH	-	-	1	3	Sk
Chloroethylene	CH <sub>2</sub> =CHCl+	7	-	-	-	
Chloroform	CHCl <sub>3</sub>	2	9.8	-	-	Sk
Chloromethane	CH <sub>3</sub> Cl	50	105	100	210	
1-Chloro-4-nitrobenzene	ClC <sub>6</sub> H <sub>4</sub> NO <sub>2</sub>	-	1	-	2	Sk
Chloropentafluoroethane	CClF <sub>2</sub> CF <sub>3</sub>	1000	6320	-	-	
Chloropicrin	CCl <sub>3</sub> NO <sub>2</sub>	0.1	0.7	0.3	2	
p-Chloroprene	CH <sub>2</sub> =CClCH=CH <sub>2</sub>	10	36	-	-	Sk
3-Chloropropene	CH <sub>2</sub> =CHCH <sub>2</sub> Cl	1	3	2	6	
Chlorosulphonic acid	HSO <sub>3</sub> Cl	-	1	-	-	
a-Chlorotoluene	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> Cl	1	5	-	-	
2-Chlorotoluene	C <sub>6</sub> H <sub>4</sub> Cl	50	250	-	-	
2-Chloro-6-(trichloro-methyl)pyridine	C <sub>6</sub> H <sub>3</sub> Cl <sub>4</sub> N	-	10	-	20	
Chlorpyrifos (ISO)	C <sub>9</sub> H <sub>11</sub> Cl <sub>3</sub> NO <sub>3</sub> PS	-	0.2	-	0.6	Sk
Chromium	Cr	-	0.5	-	-	
Chromium(II) compounds (as Cr)	Cr	-	0.5	-	-	
Chromium(III) compounds (as Cr)	Cr	-	0.5	-	-	
Coal dust						
respirable dust		-	2	-	-	
Coal tar pitch volatiles (as cyclohexane solubles)		-	0.14	-	-	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Cobalt and compounds (as Co)	Co	-	0.1	-	-	
Copper fume	Cu	-	0.2	-	-	
dusts and mists (as Cu)		-	1	-	2	
Cotton dust		-	0.5	-	-	
Cresols, all isomers	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> OH	5	22	-	-	Sk
Cristobalite, respirable dust	SiO <sub>2</sub>	-	-	-	-	
Crotonaldehyde	CH <sub>2</sub> CH=CHCHO	2	6	6	18	
Cryofluorane (INN)	CClF <sub>2</sub> CClF <sub>2</sub>	1000	7000	1250	8750	
Cumene	C <sub>6</sub> H <sub>5</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	25	120	75	370	Sk
Cyanamide	H <sub>2</sub> NCN	-	2	-	-	
Cyanides, except hydrogen cyanide, cyanogen & cyanogen chloride, (as-CN)		-	5	-	-	Sk
Cyanogen	(CN) <sub>2</sub>	10	20	-	-	
Cyanogen chloride	CICN	-	-	0.3	0.6	
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	100	340	300	1030	
Cyclohexanol	C <sub>6</sub> H <sub>11</sub> OH	50	200	-	-	
Cyclohexanone	C <sub>6</sub> H <sub>10</sub> O	25	100	100	400	
Cyclohexene	C <sub>6</sub> H <sub>10</sub>	300	1015	-	-	
Cyclohexylamine	C <sub>6</sub> H <sub>11</sub> NH <sub>2</sub>	10	40	-	-	Sk
Cyclonite (RDX)	C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>	-	1.5	-	3	Sk
Cyhexatin (ISO)	(C <sub>6</sub> H <sub>11</sub> ) <sub>3</sub> SnOH	-	5	-	10	
2,4D (ISO)	C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub> OCH <sub>2</sub> COOH	-	10	-	20	
DDM	H <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub>	0.1	0.8	0.5	4	
DDT	C <sub>14</sub> H <sub>9</sub> Cl <sub>5</sub>	-	1	-	3	
DDVP	(CH <sub>3</sub> O) <sub>2</sub> POOCH=CCl <sub>2</sub>	0.1	1	-	3	Sk
2,4-DES	C <sub>8</sub> H <sub>7</sub> Cl <sub>2</sub> NaO <sub>5</sub> S	-	10	-	20	
DMDT	C <sub>16</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>2</sub>	-	10	-	-	
Derris, commercial	C <sub>23</sub> H <sub>22</sub> O <sub>6</sub>	-	5	-	10	
Diacetone alcohol	CH <sub>3</sub> COCH <sub>2</sub> C(CH <sub>3</sub> ) <sub>2</sub> OH	50	240	75	360	
Dialkyl 79 phthalate	C <sub>6</sub> H <sub>4</sub> ·(COOC <sub>7-9</sub> H <sub>15-19</sub> ) <sub>2</sub>	-	5	-	-	
Dialkyl phthalate	C <sub>6</sub> H <sub>4</sub> ·(COOCH <sub>2</sub> CHCH <sub>3</sub> ) <sub>2</sub>	-	5	-	-	
2,2'-Diaminodiethylamine	(NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH	1	4	-	4	
4-4'-Diaminodiphenylmethane (DADPM)	H <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub>	0.1	0.8	0.5	-	
1,2-Diaminoethane	NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub>	10	25	-	-	
Diammonium peroxodisulphate (measured as (S <sub>2</sub> O <sub>8</sub> ))	(NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	-	1	-	-	
Diatomaceous earth, natural respirable dust		-	1.5	-	-	
Diazinon (ISO)	C <sub>12</sub> H <sub>21</sub> N <sub>2</sub> O <sub>3</sub> PS	-	0.1	-	0.3	Sk
Diazomethane	CH <sub>2</sub> =N <sub>2</sub>	0.2	0.4	-	-	
Dibenzoyl peroxide	(C <sub>6</sub> H <sub>5</sub> CO) <sub>2</sub> O <sub>2</sub>	-	5	-	-	
Dibismuth tritelluride	Bi <sub>2</sub> Te <sub>3</sub>	-	10	-	20	
Dibismuth tritelluride, selenium doped	Bi <sub>2</sub> Te <sub>3</sub>	-	5	-	10	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Diborane	B <sub>2</sub> H <sub>6</sub>	0.1	0.1	-	-	
Diboron trioxide	B <sub>2</sub> O <sub>3</sub>	-	.10	-	20	
Dibrom	C <sub>4</sub> H <sub>7</sub> Br <sub>2</sub> Cl <sub>2</sub> O <sub>4</sub> P	-	3	-	6	
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate	C <sub>4</sub> H <sub>4</sub> Br <sub>2</sub> Cl <sub>2</sub> O <sub>4</sub> P	-	3	-	6	
Dibromodifluoro-methane	CBr <sub>2</sub> F <sub>2</sub>	100	860	150	1290	
Dibutyl hydrogen phosphate	(n-C <sub>4</sub> H <sub>9</sub> O) <sub>2</sub> ·(OH)PO	1	5	2	10	
Di-n-butyl phosphate	(n-C <sub>4</sub> H <sub>9</sub> O) <sub>2</sub> ·(OH)PO	1	5	2	10	
Dibutyl phthalate	C <sub>6</sub> H <sub>4</sub> ·(CO <sub>2</sub> C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	-	5	-	10	
6,6'-Di-tert-butyl-4,4'-thiodim-cresol	C <sub>22</sub> H <sub>30</sub> O <sub>2</sub> S	-	10	-	20	
Dichloroacetylene	ClC=CCl	-	-	0.1	0.4	
1,2-Dichlorobenzene	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	-	-	50	300	
1,4-Dichlorobenzene	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	25	150	50	300	
Dichlorodifluoro-methane	CCl <sub>2</sub> F <sub>2</sub>	1000	4950	1250	6200	
1,3-Dichloro-5,5-dimethylhydantoin	C <sub>5</sub> H <sub>6</sub> Cl <sub>2</sub> N <sub>2</sub> O <sub>2</sub>	-	0.2	-	0.4	
Dichlorodiphenyltrichloroethane	C <sub>14</sub> H <sub>9</sub> Cl <sub>5</sub>	-	1	-	3	
1,1-Dichloroethane	CH <sub>3</sub> CHCl <sub>2</sub>	200	810	400	1620	
1,2-Dichloroethane	CH <sub>2</sub> ClCH <sub>2</sub> Cl	10	40	15	60	
1,1-Dichloroethylene	CH <sub>2</sub> =CCl <sub>2</sub>	10	40	-	-	
1,2-Dichloroethylene, cis:trans isomers 60:40	ClCH=CHCl	200	790	250	1000	
Dichlorofluoromethane	CHCl <sub>2</sub> F	10	40	-	-	
2,4-Dichlorophenoxyacetic acid	C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub> OCH <sub>2</sub> COOH	-	10	-	20	
1,3-Dichloropropene, cis and trans isomers	CHCl=CHCH <sub>2</sub> Cl	1	5	10	50	Sk
1,2-Dichlorotetra-fluoroethane	CClF <sub>2</sub> CClF <sub>2</sub>	1000	7000	1250	8750	
Dichlorvos (ISO)	(CH <sub>3</sub> O) <sub>2</sub> POO CH=CCl <sub>2</sub>	0.1	1	0.3	3	Sk
Dicyclohexyl phthalate	C <sub>6</sub> H <sub>4</sub> ·(COOC <sub>6</sub> H <sub>11</sub> ) <sub>2</sub>	-	5	-	-	
Dicyclopentadiene	C <sub>10</sub> H <sub>12</sub>	5	30	-	-	
Dicyclopenta-dienyliron	C <sub>10</sub> H <sub>10</sub> Fe	-	10	-	20	
Dieldrin (ISO)	C <sub>12</sub> H <sub>8</sub> Cl <sub>6</sub> O	-	0.25	-	0.75	Sk
Diethanolamine	HO(CH <sub>2</sub> ) <sub>2</sub> NH(CH <sub>2</sub> ) <sub>2</sub> OH	3	15	-	-	
Diethylamine	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> NH	10	30	25	75	
2-Diethylaminoethanol	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OH	10	50	-	-	Sk
Diethylene glycol	(HOCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> O	23	100	-	-	
Diethylene triamine	(NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> OH	1	4	-	-	Sk
Diethyl ether	C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub>	400	1200	500	1500	
Di-(2-ethylhexyl) phthalate	C <sub>6</sub> H <sub>4</sub> ·(COOCH <sub>2</sub> CH(C <sub>2</sub> H <sub>5</sub> )-C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	-	5	-	10	
Diethyl ketone	C <sub>2</sub> H <sub>5</sub> COC <sub>2</sub> H <sub>5</sub>	200	700	250	875	
Diethyl phthalate	C <sub>6</sub> H <sub>4</sub> ·(COOC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	-	5	-	10	
Difluorochloromethane	CHClF <sub>2</sub>	1000	3500	-	-	
Diglycidyl ether (DGE)	(OCH <sub>2</sub> CHCH <sub>2</sub> ) <sub>2</sub> O	0.1	0.6	-	-	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
o-Dihydroxybenzene	C <sub>6</sub> H <sub>4</sub> (OH)	5	20	-	-	
m-Dihydroxybenzene	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	10	45	20	90	
p-Dihydroxybenzene	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	-	2	-	4	
1,2-Dihydroxyethane	CH <sub>2</sub> OHCH <sub>2</sub> OH	-	-	-	-	
particulate		-	10	-	-	
vapour		-	60	-	125	
Diisobutyl ketone	[(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> ] <sub>2</sub> CO	25	150	-	-	
Diisobutyl phthalate	C <sub>6</sub> H <sub>4</sub> [COOCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> ] <sub>2</sub>	-	5	-	-	
Diisodecyl phthalate	(C <sub>10</sub> H <sub>21</sub> CO <sub>2</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>4</sub>	-	5	-	-	
Diisononyl phthalate	C <sub>6</sub> H <sub>4</sub> (COOC <sub>9</sub> H <sub>19</sub> ) <sub>2</sub>	-	5	-	-	
Diisooctyl phthalate	C <sub>6</sub> H <sub>4</sub> (COOC <sub>8</sub> H <sub>17</sub> ) <sub>2</sub>	-	5	-	-	
Diisopropylamine	(CH <sub>3</sub> ) <sub>2</sub> CHNHCH(CH <sub>3</sub> ) <sub>2</sub>	5	20	-	-	Sk
Diisopropyl ether	(CH <sub>3</sub> ) <sub>2</sub> CHOCH(CH <sub>3</sub> ) <sub>2</sub>	250	1050	310	1320	
Di-linear 79 phthalate	C <sub>6</sub> H <sub>4</sub> (COOC <sub>7-9</sub> H <sub>15-19</sub> ) <sub>2</sub>	-	5	-	-	
Dimethoxymethane	CH <sub>2</sub> (OCH <sub>3</sub> ) <sub>2</sub>	1000	3100	1250	3880	
NN-Dimethyl-acetamide	CH <sub>3</sub> CON(CH <sub>3</sub> ) <sub>2</sub>	10	36	20	71	Sk
Dimethylamine	(CH <sub>3</sub> ) <sub>2</sub> NH	10	18	-	-	
NN-Dimethylaniline	C <sub>6</sub> H <sub>5</sub> N(CH <sub>3</sub> ) <sub>2</sub>	5	25	10	50	Sk
1,3-Dimethylbutyl acetate	CH <sub>3</sub> CO <sub>2</sub> CH(CH <sub>3</sub> )CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	50	300	100	600	
NN-Dimethyl-ethylamine	C <sub>2</sub> H <sub>5</sub> (CH <sub>3</sub> ) <sub>2</sub> N	10	30	15	45	
Dimethylformamide	HCON(CH <sub>3</sub> ) <sub>2</sub>	10	30	20	60	Sk
2,6-Dimethylheptan-4-one	[(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> ] <sub>2</sub> CO	25	150	-	-	
Dimethyl phthalate	C <sub>6</sub> H <sub>4</sub> (COOCH <sub>3</sub> ) <sub>2</sub>	-	5	-	10	
Dimethyl sulphate	(CH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub>	0.1	0.5	0.1	0.5	Sk
Dinitrobenzene, all isomers	C <sub>6</sub> H <sub>4</sub> (NO <sub>2</sub> ) <sub>2</sub>	0.15	1	0.5	3	Sk
Dinitro-o-cresol	CH <sub>3</sub> C <sub>6</sub> H <sub>3</sub> (OH)(NO <sub>2</sub> ) <sub>2</sub>	-	0.2	-	0.6	Sk
2,4-Dinitrotoluene	CH <sub>3</sub> C <sub>6</sub> H <sub>3</sub> (NO <sub>2</sub> ) <sub>2</sub>	-	1.5	-	5	Sk
Dinonyl phthalate	C <sub>6</sub> H <sub>4</sub> (COOC <sub>9</sub> H <sub>19</sub> ) <sub>2</sub>	-	5	-	-	
Di-sec-octyl phthalate	C <sub>6</sub> H <sub>4</sub> [COOCH <sub>2</sub> CH(C <sub>2</sub> H <sub>5</sub> )C <sub>4</sub> H <sub>9</sub> ] <sub>2</sub>	-	5	-	10	
1,4-Dioxane, tech. grade	OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub>	25	90	100	360	Sk
Dioxathion (ISO)	C <sub>12</sub> H <sub>26</sub> O <sub>6</sub> P <sub>2</sub> S <sub>2</sub>	-	0.2	-	-	Sk
Diphenyl	(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub>	0.2	1.5	0.6	4	
Diphenylamine	(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> NH	-	10	-	20	
Diphenyl ether (vapour)	C <sub>6</sub> H <sub>5</sub> OC <sub>6</sub> H <sub>5</sub>	1	7	-	-	
Diphosphorus pentasulphide	P <sub>2</sub> S <sub>5</sub>	-	1	-	3	
Dipotassium peroxodisulphate measured as (S <sub>2</sub> O <sub>8</sub> .)	K <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	-	1	-	-	
Diquat dibromide (ISO)	C <sub>12</sub> H <sub>12</sub> Br <sub>2</sub> N <sub>2</sub>	-	0.5	-	1	
Disodium disulphite	Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	-	5	-	-	
Disodium peroxodisulphate (measured as (S <sub>2</sub> O <sub>8</sub> ))	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	-	1	-	-	
Disodium tetraborate, anhydrous	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	-	1	-	-	
decahydrate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10H <sub>2</sub> O	-	5	-	-	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
pentahydrate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·5H <sub>2</sub> O	-	1	-	-	
Disulfoton (ISO)	(C <sub>2</sub> H <sub>2</sub> O) <sub>2</sub> PSC <sub>2</sub> H <sub>2</sub> SC <sub>2</sub> H <sub>5</sub>	-	0.1	-	0.3	
Disulphur dichloride	S <sub>2</sub> Cl <sub>5</sub>	-	-	1	6	
Disulphur decafluoride	S <sub>2</sub> F <sub>10</sub>	0.025	0.25	0.075	0.75	
2,6-Ditertiary-butyl-paracresol	(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> CH <sub>3</sub> C <sub>6</sub> H <sub>2</sub> OH	-	10	-	-	
Diuron (ISO)	C <sub>9</sub> H <sub>10</sub> Cl <sub>2</sub> N <sub>2</sub> O	-	10	-	-	
Divanadium pentaoxide (as V)	V <sub>2</sub> O <sub>6</sub>	-	-	-	-	
total inhalable dust		-	0.5	-	-	
fume and respirable dust		-	0.05	-	-	
Divinylbenzene	C <sub>8</sub> H <sub>4</sub> ·(CHCH <sub>2</sub> ) <sub>2</sub>	10	50	-	-	
Emery		-	-	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Endosulfan (ISO)	C <sub>9</sub> H <sub>6</sub> O <sub>3</sub> S	-	0.1	-	0.3	Sk
Endrin (ISO)	C <sub>12</sub> H <sub>8</sub> Cl <sub>6</sub> O	-	0.1	-	0.3	Sk
Enflurane	CHFCl-CF <sub>2</sub> -O-CF <sub>2</sub> H	20	150	-	-	
Epichlorohydrin	OCH <sub>2</sub> CHCH <sub>2</sub> Cl	2	8	5	20	Sk
1,2-Epoxy-4-epoxyethyl-cyclohexane	C <sub>8</sub> H <sub>12</sub> O <sub>2</sub>	10	60	-	-	
2,3-Epoxypropyl isopropyl ether	C <sub>3</sub> H <sub>7</sub> OCH <sub>2</sub> CHCH <sub>2</sub> O	50	240	75	360	
Ethane-1,2-diol	CH <sub>2</sub> OHCH <sub>2</sub> OH	-	-	-	-	
particulate		-	10	-	-	
vapour		-	60	-	125	
Ethanethiol	C <sub>2</sub> H <sub>5</sub> SH	0.5	1	2	3	
Ethanol	C <sub>2</sub> H <sub>5</sub> OH	1000	1900	-	-	
Ethanolamine	NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH	3	8	500	1500	
Ether	C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub>	400	1200	-	-	
Ethyl acetate	CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub>	400	1400	-	-	
Ethyl acrylate	CH <sub>2</sub> =CHCOOC <sub>2</sub> H <sub>5</sub>	5	20	15	60	Sk
Ethyl alcohol	C <sub>2</sub> H <sub>5</sub> OH	1000	1900	-	-	
Ethylamine	C <sub>2</sub> H <sub>5</sub> NH <sub>2</sub>	10	18	-	--	
Ethyl amyl ketone	CH <sub>3</sub> CH <sub>2</sub> COHCH <sub>2</sub>	-	-	-	-	
Ethylbenzene	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	25	130	-	-	
Ethyl bromide	C <sub>2</sub> H <sub>5</sub> Br	100	435	-	545	
	C <sub>2</sub> H <sub>5</sub> Br	200	890	-	1110	
Ethyl butyl ketone	CH <sub>3</sub> CH <sub>2</sub> COH(CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	50	230	75	345	
Ethyl chloride	C <sub>2</sub> H <sub>5</sub> Cl	1000	2600	-	3250	
Ethyl chloroformate	ClCO <sub>2</sub> C <sub>2</sub> H <sub>5</sub>	1	4.4	1	-	
Ethylene chlorohydrin	ClCH <sub>2</sub> CH <sub>2</sub> OH	-	-	-	3	Sk
Ethylenediamine	NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub>	10	25	-	-	
Ethylene dibromide	BrCH <sub>2</sub> CH <sub>2</sub> Br	0.5	4	-	-	Sk
Ethylene dichloride	CH <sub>2</sub> ClCH <sub>2</sub> Cl	10	40	15	60	
Ethylene dinitrate	CH <sub>2</sub> NO <sub>2</sub> CH <sub>2</sub> NO <sub>2</sub>	0.2	1.2	0.2	1.2	Sk
Ethylene glycol	CH <sub>2</sub> OHCH <sub>2</sub> OH	-	-	-	-	
particulate		-	10	-	-	
vapour		-	60	-	125	
Ethylene glycol dinitrate (EGDN)	CH <sub>2</sub> NO <sub>2</sub> CH <sub>2</sub> NO <sub>2</sub>	0.2	1.2	0.2	1.2	Sk

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Ethylene glycol monobutyl ether	C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	25	120	-	-	Sk
Ethylene glycol monoethyl ether	C <sub>2</sub> H <sub>5</sub> OH <sub>2</sub> CH <sub>2</sub> OH	10	37	-	-	Sk
Ethylene glycol monoethyl ether acetate	C <sub>2</sub> H <sub>5</sub> OCH <sub>2</sub> CH <sub>2</sub> OOCCH <sub>3</sub>	10	54	-	-	Sk
Ethylene glycol monomethyl ether acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	5	24	-	-	Sk
Ethylene glycol monomethyl ether	CH <sub>3</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	5	16	-	-	Sk
Ethyleneimine	CH <sub>2</sub> CH <sub>2</sub> NH	0.5	1	-	-	Sk
Ethylene oxide	CH <sub>2</sub> CH <sub>2</sub> O	5	10	-	-	
Ethyl ether	C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub>	400	1200	500	1500	
Ethyl formate	HCOOC <sub>2</sub> H <sub>5</sub>	100	300	150	450	
2-Ethylhexyl chloroformate	C <sub>10</sub> H <sub>21</sub> ClO <sub>2</sub>	1	7.9	-	-	
Ethylidene dichloride	CH <sub>3</sub> CHCl <sub>2</sub>	200	810	400	1620	
Ethyl mercaptan	C <sub>2</sub> H <sub>5</sub> SH	0.5	1	2	3	
4-Ethylmorpholine	C <sub>6</sub> H <sub>13</sub> NO	5	23	20	95	Sk
Ethyl silicate	Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>	10	85	30	255	
Fenchlorphos (ISO)	(CH <sub>3</sub> O) <sub>2</sub> PSOC <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub>	-	10	-	-	
Fernam (ISO)	[(CH <sub>3</sub> ) <sub>2</sub> NCSS] <sub>3</sub> Fe	-	10	-	20	
Ferrocene	C <sub>10</sub> H <sub>10</sub> Fe	-	10	-	20	
Fluoride (as F)	F	-	2.5	-	-	
Fluorine	F <sub>2</sub>	-	-	1	1.5	
Fluorodichloromethane	CHCl <sub>2</sub> F	10	40	-	-	
Fluorotrichloromethane	CCl <sub>3</sub> F	1000	5600	1250	7000	
Formamide	HCONH <sub>2</sub>	20	30	30	45	
Formic acid	HCOOH	5	9	-	-	
2-Furaldehyde (Furfural)	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	2	8	10	40	Sk
Furfuryl alcohol	OCH=CHCH=CCH <sub>2</sub> OH	5	20	15	60	Sk
Germane	GeH <sub>4</sub>	0.2	0.6	0.6	1.8	
Germanium tetrahydride	GeH <sub>4</sub>	0.2	0.6	0.6	1.8	
Glutaraldehyde	OCH(CH <sub>2</sub> ) <sub>3</sub> CHO	-	-	0.2	0.7	
Glycerol, mist	CH <sub>2</sub> OHCHOHCH <sub>2</sub> OH	-	10	-	-	
Glycerol trinitrate	CH <sub>2</sub> NO <sub>3</sub> CHNO <sub>3</sub> CH <sub>2</sub> NO <sub>3</sub>	0.2	2	0.2	2	Sk
Glycol monoethyl ether	C <sub>2</sub> H <sub>5</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	10	37	0.2	2	
Graphite	C					
total inhalable dust			10	-	-	
respirable dust			5	-	-	
Guthion	(CH <sub>3</sub> O) <sub>2</sub> PSSCH <sub>2</sub> ·(C <sub>7</sub> H <sub>4</sub> N <sub>3</sub> O)	-	0.2	0.6	-	Sk
Gypsum	CaSO <sub>4</sub> ·2H <sub>2</sub> O					
total inhalable dust			10	-	-	
respirable dust			5	-	-	
Halothane	CHBrCl-CF <sub>3</sub>	10	80	-	-	
γ-HCH (ISO)	C <sub>6</sub> H <sub>5</sub> C <sub>6</sub>	-	0.5	-	1.5	Sk
Hafnium	Hf	-	0.5	-	1.5	
Heptachlor	C <sub>10</sub> H <sub>5</sub> C <sub>17</sub>	-	0.5	-	2	Sk
n-Heptane	C <sub>7</sub> H <sub>16</sub>	400	1600	500	2000	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Heptane-2-one	CH <sub>3</sub> -(CH <sub>2</sub> ) <sub>4</sub> COCH <sub>3</sub>	50	240	-	-	
Heptan-3-one	CH <sub>3</sub> CH <sub>2</sub> CO(CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	50	230	75	345	
γ-Hexachlorocyclo-hexane	C <sub>6</sub> H <sub>3</sub> Cl <sub>6</sub>	-	0.5	-	1.5	
Hexachloroethane vapour	CCl <sub>3</sub> CCl <sub>3</sub>	5	50	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	3	
Hexahydro-1,3,5-triazine	C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>	-	1.5	-	-	Sk
Hexane, all isomers except n-Hexane	C <sub>6</sub> H <sub>14</sub>	500	1800	1000	3600	
n-Hexane	C <sub>6</sub> H <sub>14</sub>	20	70	-	-	
1,6 Hexanolactam dust	NH(CH <sub>2</sub> ) <sub>5</sub> CO	-	1	-	40	
vapour		5	20	10	-	Sk
Hexan-2-one	CH <sub>3</sub> -(CH <sub>2</sub> ) <sub>3</sub> COCH <sub>3</sub> (CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> COCH <sub>3</sub>	5 50	20 205	- 75	300	Sk
Hexone					125	
Hexylene glycol	(CH <sub>2</sub> ) <sub>2</sub> COHCH <sub>2</sub> CHOHCH <sub>3</sub>	25	125	25	-	Sk
Hydrazine	NH <sub>2</sub> NH <sub>2</sub>	0.1	0.1	-	-	
Hydrazoic acid (as vapour)	NH <sub>3</sub>	-	-	0.1	10	
Hydrogen bromide	HBr	-	-	3	7	
Hydrogen chloride	HCl	-	-	5	2.5	
Hydrogen fluoride (as F)	HF	-	-	3	3	
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	1	1.5	2	-	
Hydrogen selenide (as Se)	H <sub>2</sub> Se	0.05	0.2	-	21	
Hydrogen sulphide	H <sub>2</sub> S	10	14	15	4	
Hydroquinone	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	-	2	-	360	
4-Hydroxy-4-methyl-pentan-2-one	CH <sub>3</sub> COCH <sub>2</sub> C(CH <sub>3</sub> ) <sub>2</sub> OH	50	240	75	-	Sk
2-Hydroxypropyl acrylate	CH <sub>2</sub> CHOOCH <sub>2</sub> CHOHCH <sub>3</sub>	0.5	3	-	-	
2,2'-Iminodiethanol	HO(CH <sub>2</sub> ) <sub>2</sub> NH (CH <sub>2</sub> ) <sub>2</sub> OH	3 1	15 4	- -	-	Sk
2,2'-Iminodi (ethylamine)	(NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH				70	
Indene	C <sub>9</sub> H <sub>8</sub>	10	45	15	0.3	
Indium & compounds (as In)	In	-	0.1	-	1	
Iodine	I <sub>2</sub>	-	-	0.1	20	
Iodoform	CHI <sub>3</sub>	0.6	10	1	56	Sk
Iodomethane	CH <sub>3</sub> I	5	28	10	10	
Iron oxide, fume (a Fe)	Fe <sub>2</sub> O <sub>3</sub>	-	5	-	-	
Iron pentacarbonyl	Fe(CO) <sub>5</sub>	0.01	0.08	-	2	
Iron salts (as Fe)	Fe		1		655	
Isoamyl acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	100	525	125	450	
Isoamyl alcohol	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> CH <sub>2</sub> OH	100	360	125	360	
Isoamyl methyl ketone	CH <sub>3</sub> COCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	50	240	75	875	
Isobutyl acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	150	700	187	225	
Isobutyl alcohol	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> OH	50	150	75	300	Sk
Isobutyl methyl ketone	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> COCH <sub>3</sub>	50	205	75	-	
Isoflurane	CF <sub>3</sub> -CHCl-O-CHF <sub>2</sub>	50	380			

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Isooctyl alcohol (mixed isomers)	C <sub>8</sub> H <sub>17</sub> OH	50	270	-	-	
Isopentyl acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	100	525	125	655	
Isophorone	C <sub>9</sub> H <sub>14</sub> O	-	-	5	25	
Isophorone diisocyanate (IPDI)	-	-	0.2	-	0.07	San
Isopropyl acetate	CH <sub>3</sub> COOCH(CH <sub>3</sub> ) <sub>2</sub>	-	-	200	840	
Isopropyl alcohol	(CH <sub>3</sub> ) <sub>2</sub> CHOH	400	980	500	1225	Sk
Isopropyl benzene	C <sub>6</sub> H <sub>5</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	25	120	75	370	Sk
Isopropyl chlorofonnate	ClCO <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	1	5	-	-	
Isopropyl ether	(CH <sub>3</sub> ) <sub>2</sub> CHOCH(CH <sub>3</sub> ) <sub>2</sub>	250	1050	310	1320	
Isopropyl glycidyl ether (IGE)	C <sub>3</sub> H <sub>7</sub> OCH <sub>2</sub> CHCH <sub>2</sub>	50	240	75	360	
Ketene	CH <sub>2</sub> =CO	0.5	0.9	1.5	3	
Limestone						
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Lindane	C <sub>6</sub> H <sub>5</sub> Cl <sub>6</sub>	-	0.5	-	1.9	Sk
Liquified petroleum gas (LPG)	Mixture: C <sub>3</sub> H <sub>6</sub> :C <sub>3</sub> H <sub>8</sub> :C <sub>4</sub> H <sub>8</sub> :C <sub>4</sub> H <sub>10</sub>	1000	1800	1250	2250	
Lithium hydride	LiH	-	0.025	-	-	
Lithium hydroxide	LiOH	-	-	-	1	
MBOCA	CH <sub>2</sub> (C <sub>6</sub> H <sub>3</sub> ClNH <sub>2</sub> ) <sub>2</sub>	-	0.005	-	-	Sk
MDA	H <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>4</sub> N	0.1	0.8	0.5	4	
MDI	H <sub>2</sub>					
Magnesite						
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Magnesium oxide (as Mg)	MgO					
fume and respirable dust		-	5	-	10	
respirable dust		-	10	-	-	
Malathion (ISO)	C <sub>10</sub> H <sub>19</sub> O <sub>6</sub> PS <sub>2</sub>	-	10	-	-	
Maleic anhydride	C <sub>4</sub> H <sub>2</sub> O <sub>3</sub>	0.25	1	-	-	
Manganese, fume (as Mn)	Mn	-	1	-	3	Sk
Manganese and compounds (as Mn)	Mn	-	5	-	-	
Manganese cyclopentadienyl tricarbonyl	C <sub>5</sub> HC <sub>5</sub> -MN(CO) <sub>3</sub>	-	0.1	-	0.3	
Manganese tetroxide	Mn <sub>3</sub> O <sub>4</sub>	-	1	-	-	
Marble						
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Mequinol (INN)	CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> OH	-	5	-	-	
Mercaptoacetic acid	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> S	1	5	-	-	
Mercury alkyls (as Hg)		-	0.01	-	0.03	Sk
Mercury & compounds, except mercury alkyls, (as Hg)	Hg	-	0.05	-	0.15	
Mesityl oxide	CH <sub>3</sub> COCH=C(CH <sub>3</sub> ) <sub>2</sub>	15	60	25	100	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Methacrylic acid	CH <sub>2</sub> =C(CH <sub>3</sub> )COOH	20	70	40	140	
Methacrylonitrile	CH <sub>2</sub> =C(CH <sub>3</sub> )CN	1	3	-	-	Sk
Methanethiol	CH <sub>3</sub> SH	0.5	1	-	-	
Methanol	CH <sub>3</sub> OH	200	260	250	310	Sk
Methomyl (ISO)	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub> S	-	2.5	-	-	Sk
Methoxychlor (ISO)	C <sub>16</sub> H <sub>15</sub> Cl <sub>3</sub> O <sub>2</sub>	-	10	-	-	
1-Methoxypropan-2-ol	CH <sub>3</sub> OCH <sub>2</sub> CHOHCH <sub>3</sub>	100	360	300	1080	Sk
Methyl acetate	CH <sub>3</sub> COOCH <sub>3</sub>	200	610	250	760	
Methyl acrylate	CH <sub>2</sub> =CHCOOCH <sub>3</sub>	10	35	-	-	
Methylal	CH <sub>2</sub> .(OCH <sub>3</sub> ) <sub>2</sub>	1000	3100	-	3880	
Methyl alcohol	CH <sub>3</sub> OH	200	260	250	310	Sk
Methylamine	CH <sub>3</sub> NH <sub>2</sub>	10	12	-	-	
Methyl-n-amyl-ketone	CH <sub>3</sub> .(CH <sub>2</sub> ) <sub>4</sub> COCH <sub>3</sub>	50	240	-	-	
N-Methylaniline	C <sub>6</sub> H <sub>5</sub> NHCH <sub>3</sub>	0.5	2	-	-	Sk
Methyl bromide	CH <sub>3</sub> Br	5	20	15	60	Sk
3-Methylbutan-1-ol	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> CH <sub>2</sub> OH	100	360	125	450	
1-Methylbutyl acetate	CH <sub>3</sub> COOCH(CH <sub>2</sub> ) <sub>3</sub> C <sub>3</sub> H <sub>7</sub>	-	-	150	800	
Methyl-n-butyl ketone	CH <sub>3</sub> .(CH <sub>2</sub> ) <sub>3</sub> COCH <sub>3</sub>	5	20	-	-	Sk
Methyl chloride	CH <sub>3</sub> Cl	50	105	100	210	
Methyl chloroform	CH <sub>3</sub> CCl <sub>3</sub>	350	1900	450	2450	
Methyl 2-cyanoacrylate	CH <sub>2</sub> =C(CN)COOCH <sub>3</sub>	2	8	4	16	
Methylcyclohexane	C <sub>7</sub> H <sub>14</sub>	400	1600	500	2000	
Methylcyclohexanol	CH <sub>3</sub> C <sub>6</sub> H <sub>10</sub> OH	50	235	75	350	
2-Methylcyclohexanone	CH <sub>3</sub> CHCO(CH <sub>2</sub> ) <sub>3</sub> CH <sub>2</sub>	50	230	75	345	Sk
Methylcyclo-pentadienyl Manganese, tricarbonyl (as Mn)	C <sub>5</sub> H <sub>5</sub> -Mn(CO) <sub>3</sub> (CH <sub>3</sub> )C <sub>5</sub> H <sub>4</sub> -Mn(CO) <sub>3</sub>	-	0.1	-	0.6	Sk
2-Methyl-4,6-dinitrophenol	CH <sub>3</sub> C <sub>6</sub> H <sub>2</sub> .(OH)(NO <sub>2</sub> ) <sub>2</sub>	-	0.2	-	0.6	Sk
4,4' -Methylenebis-2-chloroaniline) (MBOCA)	CH <sub>2</sub> .(C <sub>6</sub> H <sub>3</sub> ClNH <sub>2</sub> ) <sub>2</sub>	-	0.005	-	-	Sk
Methylene chloride	CH <sub>2</sub> Cl <sub>2</sub>	100	350	250	780	
4,4' -Methylene-diphenyl diisocyanate (MDI)		-	0.02	-	0.07	Sen
4,4' -Methylene- dianiline (MDA)	H <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub>	0.1	0.8	0.5	4	
Methyl ethyl ketone (MEK)	CH <sub>3</sub> COC <sub>2</sub> H <sub>5</sub>	200	590	300	885	
Methyl ethyl ketone peroxides (MEKP)	C <sub>8</sub> H <sub>16</sub> O <sub>4</sub> or C <sub>8</sub> H <sub>18</sub> O <sub>6</sub>			0.2	1.5	
Methyl formate	HCOOCH <sub>3</sub>	100	250	150	375	
5-Methylheptan-3-one	CH <sub>3</sub> CH <sub>2</sub> COCH <sub>2</sub> CH <sub>3</sub> - CHCH <sub>2</sub> CH <sub>3</sub>	25	130	-	-	
5-Methylhexan-2-one	CH <sub>3</sub> COCH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> .(CH <sub>3</sub> ) <sub>2</sub>	50	240	75	360	
Methyl iodide	CH <sub>3</sub> I	5	28	10	56	Sk
Methyl isoamyl ketone	CH <sub>3</sub> COCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	50	240	75	360	
Methyl isobutyl carbinol	CH <sub>3</sub> CHOHCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	25	100	40	160	Sk
Methyl isobutyl ketone (MIBK)	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> COCH <sub>3</sub>	50	205	75	300	Sk
Methyl isocyanate		-	0.02	-	0.07	Sen
Methyl mercaptan	CH <sub>3</sub> SH	0.5	1	-	-	
Methyl methacrylate	CH <sub>2</sub> =C(CH <sub>3</sub> )COOCH <sub>3</sub>	100	410	125	510	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Methyl parathion	C <sub>8</sub> H <sub>10</sub> NO <sub>5</sub> PS	-	0.2	-	0.6	Sk
2-Methylpentane-2,4-diol	(CH <sub>3</sub> ) <sub>2</sub> COHCH <sub>2</sub> CHOHCH <sub>3</sub>	25	125	25	125	
4-Methylpentan-2-ol	CH <sub>3</sub> CHOHCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub>	25	100	40	160	Sk
4-Methylpentan-2-one	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> COCH <sub>3</sub>	50	205	75	300	Sk
4-Methylpent-3-and-2-one	CH <sub>3</sub> COCH=C(CH <sub>3</sub> ) <sub>2</sub>	15	60	25	100	
4-Methyl-m-phenylene diisocyanate		-	0.02		0.07	Sen
2-Methylpropan-1-ol	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> OH	50	150	75	225	
2-Methylpropan-2-ol	(CH <sub>3</sub> ) <sub>3</sub> COH	100	300	150	450	
Methyl propyl ketone	CH <sub>3</sub> COC <sub>3</sub> H <sub>7</sub>	200	700	250	875	
1-Methyl-2-pyrrolidone	CH <sub>3</sub> N(CH <sub>2</sub> ) <sub>3</sub> CO	100	400	-	-	
Methyl silicate	(CH <sub>3</sub> O) <sub>4</sub> Si	1	6	5	30	
a-Methylstyrene	C <sub>6</sub> H <sub>5</sub> C(CH <sub>3</sub> )=CH <sub>2</sub>	-	-	100	480	
Methylstyrenes, all isomers except a-methylstyrene	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> CH=CH <sub>2</sub>	100	480	150	720	
N-Methyl-N, 2,4,6-tetranitroaniline	(NO <sub>2</sub> ) <sub>3</sub> C <sub>6</sub> H <sub>2</sub> N(NO <sub>2</sub> )CH <sub>3</sub>	-	1.5	-	3	Sk
Mevinphos (ISO)	C <sub>7</sub> H <sub>13</sub> O <sub>6</sub> P	0.01	0.1	0.03	0.3	Sk
Mica						
total inhalable dust		-	10	-	-	
respirable dust		-	1	-	-	
Molybdenum compounds (as Mo)	Mo					
soluble compounds			5		10	
insoluble compounds		-	10	-	20	
Monochloroacetic acid	ClCH <sub>2</sub> CO <sub>2</sub> H	0.3	1	-	-	Sk
Morpholine	C <sub>4</sub> H <sub>9</sub> NO	20	70	30	105	Sk
Naled (ISO)	C <sub>4</sub> H <sub>2</sub> Br <sub>2</sub> Cl <sub>2</sub> O <sub>4</sub> P	-	3	-	6	
Naphtalene	C <sub>10</sub> H <sub>8</sub>	10	50	15	75	
1,5-Naphtylene diisocyanate		-	0,02	-	0,07	Sen
Nickel carbonyl	Ni(CO) <sub>4</sub>	-	-	0.1	0.24	
Nickel, organic compounds (as Ni)	Ni	-	1	-	3	
Nicotine	C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>	-	0.5	-	1.5	Sk
Nitrapyrin	C <sub>6</sub> H <sub>3</sub> Cl <sub>4</sub> N	-	10	-	20	
Nitric acid	HNO <sub>3</sub>	2	5	4	10	
Nitric oxide	NO	25	30	35	45	
4-Nitroaniline	NO <sub>2</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub>	-	6	-	-	Sk
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	1	5	2	10	Sk
Nitromethane	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	100	310	-	-	
Nitrogen dioxide	NO <sub>2</sub>	3	5	5	9	
Nitrogen monoxide	NO	25	30	35	45	
Nitrogen trifluoride	NF <sub>3</sub>	10	30	15	45	
Nitroglycerine	CH <sub>2</sub> NO <sub>2</sub> CHNO <sub>2</sub> CH <sub>2</sub> NO <sub>2</sub>	0.2	2	0.2	2	Sk
Nitromethane	CH <sub>3</sub> NO <sub>2</sub>	100	250	150	375	
1-Nitropropane	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	25	90	-	-	
2-Nitropropane	CH <sub>3</sub> CH(NO <sub>2</sub> )CH <sub>3</sub>	10	36	20	72	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Nitrotoluene, all isomers	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> NO <sub>2</sub>	5	30	10	60	Sk
Nitrous oxide	N <sub>2</sub> O	100	180	-	-	
Octachloronaphtalene	C <sub>10</sub> Cl <sub>8</sub>	-	0.1	-	0.3	Sk
n-Octane	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> CH <sub>3</sub>	300	1450	375	1800	
Orthophosphoric acid	H <sub>3</sub> PO <sub>4</sub>	-	1	-	3	
Osmium tetroxide (as Os)	OsO <sub>4</sub>	0.0002	0.0002	0.0006	0.0006	
Oxalic acid	COOHCOOH	-	1	-	2	
Oxalonitrile	(CN) <sub>2</sub>	10	20	-	-	
2,2'-Oxydiethanol	(HOCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> O	23	100	-	-	
Ozone	O <sub>3</sub>	0.1	0.2	0.3	0.6	
PCBs						
Chlorinated biphenyls (42% chlorine)	C <sub>12</sub> H <sub>7</sub> Cl <sub>3</sub> (approx)	-	1	-	2	Sk
Chlorinated biphenyls (54% chlorine)	C <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub> C <sub>6</sub> H <sub>3</sub> Cl <sub>2</sub>	-	0.5	-	1	Sk
Paraffin wax, fume		-	2	-	6	
Paraquat dichloride (ISO) respirable dust	[CH <sub>3</sub> ·(C <sub>5</sub> H <sub>4</sub> N <sup>+</sup> ) <sub>2</sub> CH <sub>3</sub> ] (Cl <sup>-</sup> ) <sub>2</sub>	-	0.1	-	-	
Parathion (ISO)	(C <sub>8</sub> H <sub>5</sub> O) <sub>2</sub> PSOC <sub>6</sub> H <sub>4</sub> NO <sub>2</sub>	-	0.1	-	0.3	Sk
Parathion-methyl (ISO)	C <sub>8</sub> H <sub>10</sub> NO <sub>3</sub> PS	-	0.2	-	0.6	Sk
Pentacarbonyliron (as Fe)	Fe(CO) <sub>5</sub>	0.01	0.08	-	-	
Pentachlorophenol	C <sub>6</sub> Cl <sub>5</sub> OH	-	0.5	-	1.5	Sk
Pentaerythritol	C(CH <sub>2</sub> OH) <sub>4</sub>					
total inhalable dust		-	10	-	20	
respirable dust		-	5	-	-	
Pentane, all isomers	C <sub>5</sub> H <sub>12</sub>	600	1800	750	2250	
Pentan-2-one	CH <sub>3</sub> COC <sub>3</sub> H <sub>7</sub>	200	700	250	875	
Pentan-3-one	C <sub>2</sub> H <sub>5</sub> COC <sub>2</sub> H <sub>5</sub>	200	700	250	875	
Pentyl acetate	CH <sub>3</sub> COOC <sub>5</sub> H <sub>11</sub>	100	530	150	800	
Perchloroethylene	CCl=CCl <sub>2</sub>	50	335	150	1000	
Perchloryl fluoride	ClO <sub>3</sub> F	3	14	6	28	
Phenacyl chloride	C <sub>6</sub> H <sub>5</sub> COCH <sub>2</sub> Cl	0.05	0.3	-	-	
Phenol	C <sub>6</sub> H <sub>5</sub> OH	5	19	10	38	Sk
p-Phenylenediamine	C <sub>6</sub> H <sub>4</sub> (NH <sub>2</sub> ) <sub>2</sub>	-	0.1	-	-	Sk
Phenyl-2,3-epoxypropyl ether	C <sub>6</sub> H <sub>5</sub> OCH <sub>2</sub> CHCH <sub>2</sub>	1	6	-	-	
	O					
Phenythylene	C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub>	100	420	250	1050	
Phenythydrazine	C <sub>6</sub> H <sub>5</sub> NHNH <sub>2</sub>	5	20	10	45	Sk
2-Phenythpropene	C <sub>6</sub> H <sub>5</sub> C(CH <sub>3</sub> )=CH <sub>2</sub>	-	-	100	480	
Phorate (ISO)	C <sub>7</sub> H <sub>17</sub> O <sub>2</sub> PS <sub>3</sub>	-	0.05	-	0.2	Sk
Phosdrin	C <sub>7</sub> H <sub>13</sub> O <sub>6</sub> P	0.01	0.1	0.03	0.3	Sk
Phosgene	COCl <sub>2</sub>	0.1	0.4	-	-	
Phosphine	PH <sub>3</sub>	-	-	0.3	0.4	
Phosphorus, yellow	P <sub>4</sub>	-	0.1	-	0.3	
Phosphorus pentachloride	PCL <sub>5</sub>	0.1	1	-	-	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Phosphorus pentasulphide	P <sub>2</sub> S <sub>5</sub>	-	1	-	3	
Phosphorus trichloride	PCl <sub>3</sub>	0.2	1.5	0.5	3	
Phosphoryl trichloride	POCl <sub>3</sub>	0.2	1.2	0.6	3.6	
Phthalic anhydride	C <sub>6</sub> H <sub>4</sub> (CO) <sub>2</sub> O	1	6	4	24	Sen
Picloram (ISO)	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> N <sub>2</sub> O <sub>2</sub>	-	10	-	20	
Picric acid	HO <sub>3</sub> C <sub>6</sub> H <sub>2</sub> (NO <sub>2</sub> ) <sub>3</sub>	-	0.1	-	0.3	Sk
Piperazine dihydrochloride	C <sub>4</sub> H <sub>10</sub> N <sub>2</sub> ·2HCl	-	5	-	-	
Piperidine	C <sub>5</sub> H <sub>11</sub> N	1	3.5	-	-	Sk
Plasler of Paris	(CaSO <sub>4</sub> ) <sub>2</sub> ·H <sub>2</sub> O	-	-	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Platinum metal	Pt	-	5	-	-	
Platinum salts, soluble (as Pt)	Pt	-	0.002	-	-	Sen
Polychlorinated biphenyls (PCBs)	See PCB's					
Polyvinyl chloride (PVC)						Sk
total inhalable dust		-	10	-	-	Sk
respirable dust		-	5	-	-	Sk
Portland Cement						Sk
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Potassium hydroxide	KOH	-	-	-	2	
Propane-1,2-diol	CH <sub>3</sub> CHOHCH <sub>2</sub> OH					Sk
total (vapour and particulates)		150	470	-	-	
particulates		-	10	-	-	
n-Propanol	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH	200	500	250	625	Sk
Propan-1-ol	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH	200	500	250	625	Sk
Propan-2-ol	(CH <sub>3</sub> ) <sub>2</sub> CHOH	400	980	500	1225	Sk
Propargyl alcohol	HC≡CCH <sub>2</sub> OH	1	2	3	6	Sk
Propionic acid	CH <sub>3</sub> CH <sub>2</sub> COOH	10	30	15	45	
Propoxur (ISO)	H <sub>3</sub> CNHCOOC <sub>6</sub> H <sub>4</sub> OCH <sub>3</sub> (CH <sub>3</sub> ) <sub>2</sub>	-	0.5		2	
n-Propyl acetate	CH <sub>3</sub> COOC <sub>3</sub> H <sub>7</sub>	200	840	250	1050	
Propylene dinitrate	CH <sub>2</sub> NO <sub>3</sub> CHNO <sub>3</sub> CH <sub>3</sub>	0.2	1.2	0.2	1.2	Sk
Propylene glycol	CH <sub>3</sub> CHOHCH <sub>2</sub> OH					
total (vapour and particulates)		150	470	-	-	
particulates		-	10	-	-	
Propylene glycol dinitrate (PGDN)	CH <sub>2</sub> NO <sub>3</sub> CHNO <sub>3</sub> CH <sub>3</sub>	0.2	1.2	0.2	1.2	Sk
Propylene glycol monomethyl ether	CH <sub>3</sub> OCH <sub>2</sub> CHOHCH <sub>3</sub>	100	360	300	1080	Sk
Prop-2-yn-1-ol	HC≡CCH <sub>2</sub> OH	1	2	3	6	Sk
Pulverised Fuel Ash						
total inhalable dust	-	10	-	-	-	
respirable dust	-	5	-	-	-	
Pyrethrins (ISO)	-	5	-	10	-	
Pyridine	C <sub>5</sub> H <sub>5</sub> N	5	15	10	30	
2-Pyridytamine	NH <sub>2</sub> C <sub>5</sub> H <sub>4</sub> N	0.5	2	2	8	
Pyrocatechol	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	5	20	-	-	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Quartz, crystalline respirable dust	SiO <sub>2</sub>	-	0.4	-	-	
Quinone	C <sub>6</sub> H <sub>4</sub> O <sub>2</sub>	0.1	0.4	0.3	1.2	
RDX	C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>	-	1.5	-	3	Sk
Resorcinol	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>	10	45	20	90	
Rhodium (as Rh), metal fume and dust	Rh	-	0.1	-	0.3	
soluble salts		-	0.001	-	0.003	
Ronnel	(CH <sub>3</sub> O) <sub>2</sub> PSOC <sub>6</sub> H <sub>2</sub> Cl <sub>3</sub>	-	10	-	-	
Rosin core solder pyrolysis products as formaldehyde		-	0.1	-	0.3	Sen
Rotenone (ISO)	C <sub>23</sub> H <sub>22</sub> O <sub>6</sub>	-	5	-	10	
Rouge		-	10	-	-	
total inhalable dust		-	5	-	-	
respirable dust		-	0.1	-	-	
Selenium and compounds, except hydrogen selenide (asSe)	Se	-	0.1	-	-	
Silane	SiH <sub>4</sub>	0.5	0.7	1	1.5	
Silica, amorphous	SiO <sub>2</sub>	-	6	-	-	
total inhalable dust		-	3	-	-	
respirable dust		-	0.1	-	-	
Silica, fused	SiO <sub>2</sub>	-	0.1	-	-	
respirable dust		-	10	-	-	
Silicon	Si	-	5	-	-	
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Silicon carbide	SiC	-	10	-	-	
total inhalable dust		-	5	-	-	
respirable dust		-	0.7	1	1.5	
Silicon tetrahydride	SiH <sub>4</sub>	0.5	0.7	1	1.5	
Silver	Ag	-	0.1	-	-	
Silver compounds (as Ag)	Ag	-	0.01	-	-	
Sodium azide	NaN <sub>3</sub>	-	-	-	0.3	
Sodium 2-(2,4-dichloro-phenoxy) ethyl sulphate	C <sub>8</sub> H <sub>7</sub> C <sub>12</sub> NaO <sub>5</sub> S	-	10	-	20	
Sodium fluoroacetate	CH <sub>2</sub> FCOONa	-	0.05	-	0.15	Sk
Sodium hydrogen-sulphite	NaHSO <sub>3</sub>	-	5	-	-	
Sodium hydroxide	NaOH	-	-	-	2	
Sodium metabisulphate	Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	-	5	-	-	
Starch		-	10	-	-	
total inhalable dust		-	5	-	-	
respirable dust		-	0.5	0.3	1.5	
Stibine	SbH <sub>3</sub>	0.1	0.5	0.3	1.5	
Strychnine	C <sub>21</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub>	-	0.15	-	0.45	
Styrene	C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub>	100	420	250	1050	

[Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	Notes
Subtilisins (Proteolytic enzymes as 100% pure crystalline enzyme)		-	0.00006	-	0.00006	
Sucrose	C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>	-	10	-	20	
Sulfotep (ISO)	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> P <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	-	0.2	-	-	Sk
Sulphur dioxide	SO <sub>2</sub>	2	5	5	13	
Sulphur hexafluoride	SF <sub>6</sub>	1000	6000	1250	7500	
Sulphuric acid	H <sub>2</sub> SO <sub>4</sub>	-	1	-	-	
Sulphur monochloride	S <sub>2</sub> C <sub>12</sub>	-	-	1	6	
Sulphur pentachloride	S <sub>2</sub> F <sub>10</sub>	0.025	0.25	0.075	0.75	
Sulphur tetrafluoride	SF <sub>4</sub>	0.1	0.4	0.3	1	
Sulphuryl difluoride	SO <sub>2</sub> F <sub>2</sub>	5	20	10	40	
2,4,5-T (ISO)	C <sub>8</sub> H <sub>5</sub> C <sub>13</sub> O <sub>3</sub>	-	10	-	20	
TDI		-	0.02	-	0.07	Sen
TEDP	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> P <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	-	0.2	-	-	Sk
TEPP (ISO)	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> P <sub>2</sub> O <sub>7</sub>	0.004	0.05	0.01	0.2	Sk
TNT	CH <sub>3</sub> C <sub>6</sub> H <sub>2</sub> (NO <sub>2</sub> ) <sub>3</sub>	-	0.5	-	-	Sk
Talc			10			
total inhalable dust			10			
respirable dust			1			
Tantalum	Ta	-	5	-	10	
Tellurium & compounds, except hydrogen telluride, (as Te)	Te	-	0.1	-	-	
Terphenyls, all isomers	C <sub>18</sub> H <sub>14</sub>		-	0.5	5	
1,1,2,2-Tetrabromo-ethane	CHBr <sub>2</sub> CHBr <sub>2</sub>	0.5	7	-	-	Sk
Tetrabromomethane	CBr <sub>4</sub>	0.1	1.4	0.3	4	
Tetracarbonylnickel (as Ni)	Ni(CO) <sub>4</sub>	-	-	0.1	0.24	
1,1,1,2-Tetrachloro-2,2-difluoroethane	CCl <sub>3</sub> CClF <sub>2</sub>	100	834	100	834	
1,1,2,2-Tetrachloro 1,2-difluoroethane	CCl <sub>2</sub> FCCl <sub>2</sub> F	100	834	100	834	
Tetrachloroethylene	CCl=CCl <sub>2</sub>	50	335	150	1000	
Tetrachloromethane	CCl <sub>4</sub>	2	12.6		-	Sk
Tetrachloro- naphthalenes, all isomers	C <sub>10</sub> H <sub>4</sub> Cl <sub>4</sub>	-	2	-	4	
O,O,O',O'-Tetraethyl dithiopyrophosphate	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> P <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	-	0.2	-	-	Sk
O,O,O',O'-Tetraethyl pyrophosphate	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> P <sub>2</sub> O <sub>7</sub>	0.004	0.05	0.01	0.2	Sk
Tetraethyl orthosilicate	Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>	10	85	30	255	
Tetrafluorodichloro-ethane	CClF <sub>2</sub> CClF <sub>2</sub>	1000	7000	1250	8750	
Tetrahydrofuran	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O	200	590	250	735	
Tetramethyl orthosilicate	(CH <sub>3</sub> O) <sub>4</sub> Si	1	6	5	30	
Tetramethyl succinonitrile	C <sub>8</sub> H <sub>12</sub> N <sub>2</sub>	0.5	3	2	9	Sk
Tetrasodium pyrophosphate	Na <sub>4</sub> P <sub>2</sub> O <sub>7</sub>	-	5	-	-	

## [Subsidiary]

Substance	Formula	TWA OEL-CL		SHORT TERM OEL-CL		1995 Notes
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
Tetryl	(NO <sub>2</sub> ) <sub>3</sub> C <sub>6</sub> H <sub>2</sub> N(NO <sub>2</sub> )CH <sub>3</sub>	-	1.5	-	3	Sk
Thallium, soluble compounds (as Ti)	Tl	-	0.1	-	-	Sk
4,4'-Thiobis(6-tert-butyl-m-cresol)	C <sub>22</sub> H <sub>30</sub> O <sub>2</sub> S	-	10	-	20	
Thioglycollic acid	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> S	1	5	-	-	
Thionyl chloride	SOCl <sub>2</sub>	-	-	1	5	
Thiram (ISO)	(CH <sub>3</sub> ) <sub>2</sub> NCS <sub>2</sub> CS <sub>2</sub> N(CH <sub>3</sub> ) <sub>2</sub>	-	5	-	10	
Tin, compounds, inorganic, except SnH <sub>4</sub> , (as Sn)	Sn	-	2	-	4	
Tin compounds, organic, except Cyhexatin (ISO), (as Sn)	Sn	-	0.1	-	0.2	Sk
Titanium dioxide	TiO <sub>2</sub>					
total inhalable dust		-	10	-	-	
respirable dust		-	5	-	-	
Toluene	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	50	188	150	560	Sk
Toluene diisocyanate (TDI)		-	0.2	-	0.07	Sen
p-Toluenesulphonyl chloride	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub> Cl	-	-	-	5	
1,4,7-Tri-(aza)-heptane	(NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> OH	1	4	-	-	Sk
Tribromomethane	CHBr <sub>3</sub>	0.5	5	-	-	Sk
Tributyl phosphate, all isomers	(C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> PO <sub>4</sub>	-	5	-	5	
Tricarbonyl (eta-cyclopentadienyl) manganese (asMn)	(C <sub>5</sub> H <sub>5</sub> )-Mn(CO) <sub>3</sub>	-	0.1	-	0.3	Sk
Tricarbonyl(methylcyclopentadienyl) manganese (as Mn)	(CH <sub>3</sub> )C <sub>5</sub> H <sub>4</sub> -Mn(CO) <sub>3</sub>	-	0.2	-	0.6	Sk
Trichloroacetic acid	CCl <sub>3</sub> COOH	1	5	-	-	
1,2,4-Trichlorobenzene	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>	5	40	5	40	
1,1,1-Trichlorobis (chlorophenyl) ethane	C <sub>14</sub> H <sub>9</sub> C <sub>15</sub>	-	1	-	3	
1,1,2-Trichloroethane	CH <sub>2</sub> ClCHCl <sub>2</sub>	10	45	20	90	Sk
Trichlorofluoro-methane	CCl <sub>3</sub> F	1000	5600	1250	7000	
Trichloromethane	CHCl <sub>3</sub>	2	9.8	-	-	
Trichloronitromethane	CCl <sub>3</sub> NO <sub>2</sub>	0.1	0.7	0.3	2	
2,4,5-Trichlorophenoxyacetic acid	C <sub>8</sub> H <sub>5</sub> Cl <sub>3</sub> O <sub>3</sub>	-	10	-	20	
1,2,3-Trichloropropane	CH <sub>2</sub> ClCHClCH <sub>2</sub> Cl	50	300	75	450	
1,1,2-Trichloro- trifluoroethane	CCl <sub>2</sub> CFClF <sub>2</sub>	1000	7600	1250	9500	
Tri-o-cresyl phosphate	(CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> O) <sub>3</sub> P=O	-	0.1	-	0.3	
Tricydohexyltin hydroxide	(C <sub>6</sub> H <sub>11</sub> ) <sub>3</sub> SnOH	-	5	-	10	
Tridymite, respirable dust	SiO <sub>2</sub>	-	0.4	-	-	
Triethylamine	(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> N	10	40	15	60	
Trifluorobromo-methane	CF <sub>3</sub> Br	1000	6100	1200	7300	
Trimanganese tetraoxide	Mn <sub>3</sub> O <sub>4</sub>	-	1	-	-	
Trimellitic anhydride	C <sub>9</sub> H <sub>4</sub> O <sub>5</sub>	-	0.04	-	-	Sen
Trimethylamine	(CH <sub>3</sub> ) <sub>3</sub> N	10	24	15	36	

[Subsidiary]

Trimethylbenzenes, all isomers or mixtures	$C_6H_3(CH_3)_3$	25	123	-	-	
3,5,5- Trimethyl-cyclohex-2-enone	$C_9H_{14}O$	-	-	5	25	
Trimethyl phosphite	$(CH_3O)_3P$	2	10	-	-	
2,4,6-Trinitrophenol	$HO C_6H_2(NO_2)_3$	-	0.1	-	0.3	Sk
2,4,6-Trinitrotoluene	$CH_3 C_6H_2(NO_2)_3$	-	0.5	-	-	Sk
Triphenyl phosphate	$(C_6H_5)_3PO_4$	-	3	-	6	
Tripoli, respirable dust	$SiO_2$	-	0.4	-	-	
Tri-o-tolyl phosphate	$(CH_3 C_6H_4O)_3P=O$	-	0.1	-	0.3	
Tungsten & compounds (as W)	W					
soluble		-	1	-	3	
insoluble		-	5	-	10	
Turpentine	$C_{10}H_{16}$	100	560	150	840	
Uranium compounds, natural, soluble (as U)	U	-	0.2	-	0.6	
Vanadium pentoxide	$V_2O_5$					
total inhalable dust		-	0.5	-	-	
fume and respirable dust		-	0.05	-	-	
Vinyl acetate	$CH_3COOCH=CH_2$	10	30	20	60	
Vinyl benzene	$C_6H_5CH=CH_2$	100	420	250	1050	
Vinyl bromide	$CH_2=CHBr$	5	20	-	-	
4-Vinylcyclohexene dioxide	$C_8H_{12}O_2$	10	60	-	-	
Vinyl toluenes, all isomers	$C_6H_5C(CH_3)=CH_2$	-	-	100	480	
Warfarin (ISO)	$C_{19}H_{16}O_4$		0.1		0.3	
White spirit		100	575	125	720	
Xylene,o-,m-,p- or mixed isomers	$C_6H_4(CH_3)_2$	100	435	150	650	Sk
Xylidine, all isomers	$(CH_3)_2C_6H_3NH_2$	2	10	10	50	Sk
Yttrium	Y	-	1	-	3	
Zinc chloride, fume	$Zn Cl_2$	-	1	-	2	
Zinc distearate	$Zn(C_{18}H_{35}O_2)_2$					
total inhalable dust		-	10	-	20	
respirable dust		-	5	-	-	
Zinc oxide, fume	$ZnO$	-	5	-	10	
Zirconium compounds (as Zr)	Zr	-	5	-	10	

\* The OEL-RL for aluminium does not include exposure to aluminium coated with mineral oil or to fume arising from aluminium welding processes.

#### Abbreviations

1. *OEL-CL*: Occupational Exposure Limit-Control Limit.
2. *OEL-RL*: Occupational Exposure Limit-Recommended Limit.
3. *ppm*: Parts per million.
4. *mg/m<sup>3</sup>*: milligrams per cubic metre.
5. *Sk*: Skin absorption.
6. *Sen*: capable of causing respirable sensitisation.
7. *ISO*: International Standards Organization

[Subsidiary]

TABLE 3

## BIOLOGICAL EXPOSURE INDICES (BEI)

<i>Chemical Determinant</i>	<i>Sampling Time</i>	<i>Bel</i>	<i>Notation*</i>
ANILINE			
Total p-aminophenol in urine	End of shift	50 mg/g creatinine	C
Methemoglobin in blood	During or end of shift	1.5% of hemoglobin	B,C,D
ARSENIC AND SOLUBLE COMPOUNDS INCLUDING ARSINE			
Inorganic arsenic metabolites in urine	End of workweek	50 µg/g creatinine	B
BENZENE			
Total phenol in urine	End of shift	50 mg/g creatinine	B,C
Benzene in exhaled air:	Prior to next shift		
mixed-exhaled		0.08 ppm	D
end-exhaled		0.12 ppm	D
CADMIUM			
Cadmium in urine	Not critical	10 µg/g creatinine	B
Cadmium in blood	Not critical	10 µg/l	B
CARBON DISULFIDE			
2-Thiothiazolidine-4-carboxylic acid in urine	End of shift	5 mg/g creatinine	
CARBON MONOXIDE			
Carboxyhemoglobin in blood	End of shift	less than 8% of hemoglobin	B,C
Carbon monoxide in end-exhaled air	End of shift	less than 40 ppm	B,C
CHLOROBENZENE			
Total 4-chlorocatechol in urine	End of shift	150 mg/g creatinine	C
Total p-chlorophenol in urine	End of shift	25 mg/g creatinine	C
CHROMIUM (VI), Water soluble fume	Increase during shift	10-µg/g creatinine	B
Total chromium in urine	End of shift at end of workweek	30- µg/g creatinine	B
N,N-DIMETHYLFORMAMIDE (DMF)			
N-Methylformamide in urine	End of shift	40 mg/g creatinine	B
ETHYL BENZENE			
Mandelic acid in urine	End of shift at end of workweek	1.5 g/g creatinine	A D
Ethyl benzene in end-exhaled air			
FLUORIDES			
Fluorides in urine	Prior to shift End of shift	3 mg/g creatinine 10 mg/g creatinine	B,C B,C
FURFURAL			
Total furoic acid in urine	End of shift	200 mg/g creatinine	B,C
n-HEXANE			
2,5-Hexanedione in urine	End of shift	5 mg/g creatinine	C
n-Hexane in end-exhaled air			D
MERCURY			
Total inorganic mercury in urine	Prior to shift	35 µg/g creatinine	B
Total inorganic mercury in blood	End of shift at end of workweek	15 µg/l	B
METHEMOGLOBIN INDUCERS			
Methemoglobin in blood	During or end of shift	1.5% of hemoglobin	B,C,D
METHANOL			
Methanol in urine	End of shift	15 mg/l	B,C
Formic acid in urine	Before shift at end of workweek	80 mg/g creatinine	B,C
METHYL CHLOROFORM			
Methyl chloroform in end-exhaled air	Prior to the last shift of workweek	40 ppm	
Trichloroacetic acid in urine	End of workweek	10 mg/l	C,D
Total trichloroethanol in urine	End of shift at end of workweek	30 mg/l	C,D

[Subsidiary]

Total trichloroethanol in blood	End of shift at end of workweek	1 mg/l	C
METHYIETHYIKETONE	End of shift	2 mg/l	-
MEK in urine			
METHYL ISOBUTYL KETONE			
MIBK in urine	End of shift	2mg/l	-
NITROBENZENE			
Total p-nitrophenol in urine	End of shift at end of workweek	5 mg/g creatinine	C
Methemoglobin in urine	End of shift	1.5% of hemoglobin	B,C,D
ORGANOPHOSPHORUS			
CHOLINESTERASE INHIBITORS			
Cholinesterase activity in red cells	Discretionary	70% of individual's baseline	B,C,D
PARATHION			
Total p-nitrophenol in urine	End of shift	0.5 mg/g creatinine	C,D
Cholinesterase activity in red cells	Discretionary	70% of individual's baseline	B,C,D
PENTACHLOROPHENOL			
Total PCP in urine	Prior to the last shift of workweek	2 mg/g creatinine	B
Free PCP in plasma	End of shift	5 mg/l	B
PERCHLOROETHYLENE			
Perchloroethylene in end-exhaled air	Prior to the last shift of workweek	10ppm	
Perchloroethylene in blood		1 mg/l	
Trichloroacetic acid in urine	End of workweek	7 mg/l	C,D
PHENOL			
Total phenol in urine	End of shift Prior to next shift	250 mg/g creatinine	B,C
STYRENE			
Mandelic acid in urine	End of shift Prior to next shift	800 mg/g creatine 300 mg/g creatinine	C C
Phenylglyoxylic acid in urine	End of shift Prior to next shift	240 mg/g creatinine 100 mg/g creatinine	B,C B,C
Styrene in venous blood	End of shift Prior to next shift	0.55 mg/l 0.02 mg/l	D D
TOLUENE			
Hippuric acid in urine	End of shift	2.5 g/g creatinine	B,C
Toluene in venous blood	End of shift	1 mg/l	D
o-Cresol in urine	End of shift	1 mg/g creatinine	C
TRICHLOROETHYLENE			
Trichloroacetic acid in urine	End of workweek	100 mg/g creatinine	C
Trichloroacetic acid and trichloroethanol in urine	End of shift at end of workweek	300 mg/g creatinine	C
Free trichloroethanol in blood	End of shift at end of workweek	4 mg/l	C
Trichloroethylene in end-exhaled air		D	
XYLENE			
Methylhippuric acid in urine	End of shift last four hours of shift	1.5 g/g creatinine 2 mg/min	-

## \*Notations

“A” notation: This notation indicates that an identifiable population group might have an increased susceptibility to the effect of the chemical, thus leaving it unprotected by the recommended BEI.

**[Subsidiary]**

“B” notation: This notation indicates that the determinant is usually present in a significant amount in biological specimens collected from subjects who have not been occupationally exposed. Such background levels are included in the BEI value.

“C” notation: This notation indicates that the determinant is non-specific, since it is observed after exposure to some other chemicals. These non-specific tests are preferred because they are easy to use and usually offer a better correlation with exposure than specific tests. In such instances a BEI for a specific, less quantitative biological determinant is recommended as a confirmatory test.

“D” notation: This notation indicates that the biological determinant is an indicator of exposure to the chemical, but the quantitative interpretation of the measurement is ambiguous (semi-quantitative). These biological determinants should be used as a screening test if a quantitative test is not practical or a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.

**SCHEDULE 2**

rule. 5 (3)

*Applying occupational exposure limits*1. *General*

The lists of occupational exposure limits given in Tables 1 and 2 unless otherwise stated, relate to personal exposure to substances hazardous to health in the air of the workplace.

2 *Units of measurement*

(2.1) In occupational exposure limits, concentrations of gases and vapour in air are usually expressed in parts per million (ppm), a measure of concentration by volume, as well as in milligrams per cubic meter of air (mg/m<sup>3</sup>), a measure of concentration by mass.

(2.2) In converting from ppm to mg/m<sup>3</sup> a temperature of 25°C and an atmospheric pressure of 101,325 KPa are used. Concentrations of airborne particles (fume, dust, etc) are usually expressed in mg/m<sup>3</sup>. i.e. ppm =  $\frac{24.45}{\text{Molecular of the substance}}$  mg/m<sup>3</sup>

Molecular of the substance

or

mg/m<sup>3</sup> =  $\frac{\text{molecular weight of the substance}}{24.45}$  ppm

24.45

(2.3) In the case of dust, the limits in the tables refer to the *total inhalable* fraction unless specifically indicated as referring to the *respirable* fraction.

(2.4) In the case of a man-made mineral fiber, the limit is expressed as fibers per milliliter of air (fibres/ml<sup>l</sup>).

3. *Occupational exposure limits- control limits: OEL-CL (Table I)*

[Subsidiary]

- (3.1) An OEL-CL is the maximum concentration of an airborne substance, averaged *over* a reference period, to which employees may be exposed by inhalation under any circumstances, and is specified together with the appropriate reference period in Table 1.
- (3.2) Rule 5 of these rules, imposes a duty on the employer to take all reasonable precautions and to exercise all due diligence to ensure that exposure is kept as far below an OEL-CL as is reasonably practicable.

#### 4 Occupational exposure limits – Recommended limit OEL-RL Table 2

- (4.1) An OEL-RL is the concentration of an airborne substance, averaged over a reference period, at which, according to current knowledge, there is no evidence that it is likely to be injurious to employees if they are exposed by inhalation, day after day, to that concentration.
- (4.2) For a substance, which has been assigned an OEL-RL, exposure by inhalation should be reduced to that standard.
- (4.3) Control of an OEL-RL as prescribed in Rule 7(1) can always be regarded as adequate control of that substance for the purposes of these rules, so far as exposure from inhalation is concerned. However, due to the variations in process control and the fluctuations in substance concentrations in the workplace, it will be prudent for employers to reduce exposure below an OEL-RL so as to ensure that the exposure of all employees does not exceed that OEL-RL. Similarly, it is not intended that the statutory requirements under Rule 7(1) should discourage the further application of good occupational hygiene principles in order to reduce exposure below the OEL-RL.

#### 5 Long-term and short-term exposure limits

- (5.1) The pattern of effects due to exposure to substances hazardous to health varies considerably depending on the nature of the substance and the exposure. Some effects require prolonged or accumulated exposure.
- (5.2) The long-term (8-hour time weighted average) exposure limit is intended to control such effects by restricting the total intake by inhalation over one or more work shifts. Other effects may be seen after brief exposures, which have occurred once or repeatedly.
- (5.3) Short-term limits (usually 15 minute) may be applied to such substances. Where long-term limits also apply, the short-term limits restrict the magnitude of excursion above the average concentration during longer exposures. For those substances for which no short-term limit is specified, it is recommended that a figure of three times the long-term limit be used as a guideline for controlling short-term excursions in exposure.
- (5.4) With some other substances, brief exposure may be critical and the exposure limit necessary to prevent these excursions will also controls any other effects. A separate long-term limit is not considered necessary in such cases and the short-term limit applies throughout the shift.
- (5.4) Exposure limits are expressed as airborne concentrations averaged over a specified period of time. The period for the long-term limit is normally eight hours. When a different period is used, this is stated. The averaging period for the short-term exposure

**[Subsidiary]**

limit is normally 15 minutes. Such a limit applies to any 15-minute period throughout the working shift.

**6 Limitations to the application of exposure limits**

- (6.1) The exposure limits relate to personal exposure with the exception of the annual OEL-CL for vinyl chloride, which should be recorded as the time weighted average of vinyl chloride in the atmosphere of a working place over a period of one year. The OEL-RL for cotton dust is not a personal exposure standard, but a static air standard.
- (6.2) The limits cannot readily be extrapolated to evaluate or control non-occupational exposure, e.g. levels of contamination in the neighborhood dose to an industrial plant. OELs only apply to persons at work. Employers should also take into account their duties under the Environmental Management and co-ordination Act (EMCA).
- (6.3) The OELs are also only approved for use where the atmospheric pressure is between 85 KPa and 101,325 KPa. This covers the normal range of meteorological variations and slightly pressurized workplaces such as cleaning rooms, but not the higher pressures that may be encountered in, for example, tunneling or underwater hyperbaric chambers. Such situations require special assessments.
- (6.4) Occupational exposure limits, as set out in Tables 1 and 2 are intended to be used for normal working conditions in workplaces. OELs are not, however, designed to deal with serious accidents or emergencies, particularly where employees may be exposed to rapidly rising concentrations of gas, as may arise from a major escape due to plant failure.
- (6.5) Over and above the employers' responsibilities to ensure that the requirements of these rules are met, they also have a clear responsibility to ensure that the plant is designed, operated and maintained in a way that avoids accidents and emergencies. Where appropriate, detection, alarm and response measures should be used in order to minimize the effect of any such unplanned events.
- (6.6) To help maintain adequate operational control, employers may find it helpful to select their own indicators of control when undertaking investigations or corrective action.

**7 Pesticides**

Substances used as active ingredients in pesticides are listed under their chemical names and/or their common (ISO) names. These names may sometimes be used as parts of the names of proprietary pesticide formulations. In all cases the exposure limit applies to the specific active ingredients and not to the formulation as a whole.

**8 Dusts**

The general approach necessary to control occupational exposure to dusts is as follows:

- (8.1) Not all dusts have been assigned occupational exposure limits but the lack of such limits should not be taken to imply an absence of hazard. In the absence of a specific exposure limit for a particular dust, exposure should be adequately controlled.
- (8.2) Where there is no indication of the need for a lower value, personal exposure should be kept below both 10 mg/m<sup>3</sup> 8-hour time-weighted average total inhalable dust and 5 mg/m<sup>3</sup> time weighted average respirable dust. Such, or greater, dust concentrations should be taken as the *substantial concentrations*.

[Subsidiary]

(8.3) A substantial concentration of dust should be taken as a concentration of 10 mg/m<sup>3</sup>, 8-hour time weighted average, of total inhalable dust or 5 mg/m<sup>3</sup>, 8-hour time-weighted average, of respirable dust, where there is no indication of the need for a lower value, and as such they are referred to as *substances hazardous to health*.

9. *Total inhalable dust and respirable dust*

(9.1) *Total inhalable dust* approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract.

(9.2) *Respirable dust* approximates to the fraction, which penetrates to the gas exchange region of the lung.

(9.3) Where dusts contain components, which have their own assigned occupational exposure limits, all the relevant limits should be complied with.

10. *Fume*

(10.1) Where a separate OEL has been set for *fume*; it should normally be applied to solid particles generated by chemical reactions or condensed from the gaseous state, usually after volatilization from melted substances.

(10.2) The generation of fume is often accompanied by a chemical reaction such as oxidation or thermal breakdown.

11. *Absorption through the skin*

(11.1) In general, for most substances the main route of entry into the body is by inhalation. The OELs given in these Rules solely relate to exposure by this route.

(11.2) Certain substances such as phenol, aniline and certain pesticides (marked in the Tables with an SK notation) have the ability to penetrate the intact skin and thus become absorbed into the body.

(11.3) Absorption through the skin can result from localized contamination, for example from a splash on the skin or clothing, or in certain cases from exposure to high atmospheric concentrations of vapour.

(11.4) Serious effects can result in little or no warning and it is necessary to take special precautions to prevent skin contact when handling these substances.

(11.5) Where the properties of the substances and the methods of use provide a potential exposure route via skin absorption; these factors should be taken into account in determining the adequacy of the control measures.

12. *Sensitizers*

(12.1) Certain substances may cause sensitization of the respiratory tract if inhaled or skin contact occurs.

## [Subsidiary]

- (12.2) Respiratory sensitizers can cause asthma, rhinitis, or extrinsic allergic alveolitis.
- (12.3) Skin sensitizers cause allergic contact dermatitis. Substances, which cause skin sensitizations, are not necessarily respiratory sensitizers or vice-versa.
- (12.4) Only a proportion of the exposed population will become sensitized, and those who do become sensitized, will not have been identified in advance. Individuals who become sensitized may produce symptoms of ill health after exposure even to minute concentrations of the sensitizer.
- (12.5) Where it is reasonably practicable, exposure to sensitizers should be prevented. Where this cannot be achieved, exposure should be kept as low as is reasonably practicable and activities giving rise to short-term peak concentrations should receive particular attention. As with other substances, the spread of contamination by sensitizers to other working areas should also be prevented, as far as is reasonably practicable.
- (12.6) The Sen notation (marked in the Tables with a Sen notation) has been assigned only to those sensitizers that may cause sensitization by inhalation. Remember that other substances not contained in these Tables can act as respiratory sensitizers.

13. *Other factors*

Working conditions, which impose additional stress on the body, such as exposure to ultra-violet radiation, high temperatures, pressures and humidity may increase the toxic response to a substance. In such cases, specialist advice may be necessary to evaluate the effects of these factors.

14. *Mixed exposures General*

- (14.1) The majority of OELs listed in Tables 1 and 2 are for single compounds or for substances containing a common element or radical, e.g. *tungsten and compounds, and isocyanides*. A few of the limits relate to substances commonly encountered as complex mixtures or compounds e.g. *white spirit, rubber fume, and welding fume*.
- (14.2) However, workers are frequently subjected to other mixed exposures involving solids, liquids, aerosols or gases. These exposures can arise as a result of work with materials containing a mixture of substances, or from work with several individual substances, simultaneously or successively, in a work shift.
- (14.3) Mixed exposures require careful assessment of their health effects and the appropriateness of control standards. The following paragraphs provide a brief summary of the advice on the application of exposure limits in these circumstances. In all cases of doubt, specialist advice should be sought.

15. *Effects of mixed exposures*

- (15.1) The ways in which the constituent substances of a mixed exposure interact vary considerably. Some mixed exposures involve substances that act on different body tissues or organs, or by different toxicological mechanisms, these various effects being independent of each other.

[Subsidiary]

(15.2) Other mixtures will include substances that act on the same organs, or by similar mechanisms, so that the effects reinforce each other and the substances are additive in their effect. In some cases the overall effect is considerably greater than the sum of the individual effects and the system is synergistic. This may arise from mutual enhancement of the effects of the constituents or because one substance potentiates another, causing it to act in a way which it would not do alone.

#### 16. *Assessment and control*

(16.1) With all types of mixed exposures, it is essential that assessments be based on the concentrations of each of the constituents in air to which workers are exposed. Depending on the nature of the constituents and the circumstances of use, the relative concentrations of the constituents in air may differ considerably from those in the liquid or solid source material. The composition of the bulk material should not be relied on for assessment unless there is good evidence for doing so.

(16.2) Where mixed exposure occurs, the first step is to ensure adequate control of exposure for each individual substance. However, the nature and amount of the other substances in a mixture can influence the level to which it is reasonable practicable to reduce exposure to a substance subject to an OEL-CL.

(16.3) When limits for specific mixtures have been established, they should be used only where they are applicable, and in addition to any relevant individual limits. They should not be extended to inappropriate situations. It is then necessary to assess whether further control is needed to counteract any increased risk from the substances acting in conjunction.

(16.4) Expert assessments for some particular mixed exposures may be available and can be used as guidelines in similar cases. In other cases, close examination of the toxicological data will be necessary to determine which of the main types of interaction (if any) are likely for the particular combination of substances concerned.

(16.5) The various types should be considered in the following order:

##### 16.5.1 *Synergistic substances:*

Known cases of synergism and potentiation are considerably less common than the other types of behaviour in mixed exposures. However, they are the most serious in their effects and require the most strict control. They are also the most difficult to assess and wherever there is reason to suspect such interaction, specialist advice should be obtained;

##### 16.5.2 *Additive substances:*

Where there is reason to believe that the effects of the constituents are additive, and where the exposure limits are based on the same health effects, the mixed exposure should be assessed by means of the formula

$$C_1/L_1 + C_2/L_2 + C_3/L_3, \dots > 1$$

where  $C_1, C_2,$  etc are the time-weighted average (TWA) concentrations of constituents in air and  $L_1, L_2,$  etc are the corresponding exposure limits. The use of this formula is only applicable where the additive substances have been assigned OELs, and  $L_1, L_2,$  etc. relate to the same reference period in the list of approved OELs. Where the sum of the C/L fractions does not exceed one, the exposure is considered not to exceed the OELs. If one of the constituents has been assigned an OEL-CL, then the additive effect

**[Subsidiary]**

should be taken into account in deciding the extent to which it is reasonably practicable to further reduce exposure; and

**16.5.3 Independent substances:**

Where no synergistic or additive effects are known or considered likely, the constituents can be regarded as acting independently. It is then sufficient to ensure compliance with each of the OELs individually.

(16.6) The above steps provide basic protocol for assessment of mixed exposures. It is open to persons responsible for control of exposure to treat all nonsynergistic systems as though they were additive. This avoids the need to distinguish additive and independent systems and can be regarded as the more prudent course, particularly where the toxicity data are scarce or difficult to assess.

**17 Monitoring mixed exposure**

(17.1) The number of components of a mixed exposure, for which routine air monitoring is required, can be reduced if their relative concentrations can be shown to be constant.

(17.2) This involves the selection of a key or marker, which may be one of the constituents, as a measure of the total contamination. Exposure to the marker is controlled at a level selected so that exposures to all components will be controlled in accordance with the criteria in paragraphs 16.5.1 and 16.5.2.

(17.3) However, if one of the components has been assigned an OEL-CL, the level of the exposure to that substance should always be reduced as far as is reasonably practicable.

(17.4) If this approach is to be used, it should take place under the guidance of suitable specialist advice.

(17.5) Rule 16 imposes a duty on the employer to monitor the exposure of employees to substances hazardous to health.

**18 Complicating factors**

18.1. Several factors that complicate the assessment and control of exposure to individual substances will also affect cases of mixed exposures and will require similar special consideration. Such factors include—

18.1.1 exposure to a substance for which there is no established limit or for which an OEL-CL has been set;

18.1.2 the relevance of factors such as alcohol, medication, smoking and additional stresses;

18.1.3 exposure of the skin to one or more substances that can be absorbed by this route, as well as by inhalation; and

18.1.4 substances in mixture may mutually affect the extent of their absorption, as well as their health effects, at a given level of exposure.

[Subsidiary]

## SCHEDULE 3

rule 12

## MATERIAL SAFETY DATA SHEET

MATERIAL SAFETY DATA SHEET	No: Date issued:
Manufacturer/ Supplier Details	
Name: Address: Tel:	Emergency telephone no.: Telex: Fax:
1. Material identification:	
Trade name: Chemical family: Chemical name: Synonyms:	
2. Composition:	
Hazardous components:	
3. Hazards Identification:	
Main hazard: Flammability: Chemical hazard: Biological hazard: Reproductive hazard: Eye effects: eyes Health effects - skin: Health effects - ingestion: Health effects - inhalation: Carcinogenicity: Mutagenicity: Neurotoxicity:	
4. First-aid Measures:	
Material if in eye: Material if on skin: Material if ingested: Material if inhaled:	
5. Fire-fighting Measures:	
Extinguishing media: Special hazards: Protective clothing:	
6. Accidental Release Measures:	
Personal precautions: Environmental precautions: Spills:	
7. Handling and Storage:	
Handling/storage precautions:	

**[Subsidiary]**

8.	ExposureControls /PersonalProtection:
	Occupational exposure limits: Engineering control measures: Personal protection - respiratory: Personal protection - hand: Personal protection - eye: Personal protection - skin: Other protection:
9.	Physical and Chemical Properties:
	Appearance: Odour: PH: Boiling point: Melting point: Flash point: Flammability: Autoflammability: Explosive properties: Oxidizing properties: Vapour pressure: Density: Solubility - water: Solubility - solvent: Solubility - coefficient: Neurotoxicity:
10.	Stability and Reactivity:
	Conditions to avoid: Incompatible materials: Hazardous decomposition products:
11.	Toxicological information:
	Acute toxicity: Skin and eye contact: Chronic toxicity: Carcinogenicity: Mutagenicity: Neurotoxicity: Reproductive hazards:
12	Disposal Considerations:
	Disposal methods: Disposal of packaging:
13.	Other Information:

