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S T A T U T O R Y   I N S T R U M E N T S

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1974 No. 1587

**FACTORIES**

**The Abstract of Special Regulations (Highly Flammable Liquids  
and Liquefied Petroleum Gases) Order 1974**

*Made* - - - - - 23rd September 1974  
*Coming into Operation* 14th October 1974

The Secretary of State in exercise of powers conferred by section 139(1) of the Factories Act 1961(a) and now vested in him(b) and of all other powers enabling him in that behalf, hereby makes the following Order:—

1. This Order may be cited as the Abstract of Special Regulations (Highly Flammable Liquids and Liquefied Petroleum Gases) Order 1974 and shall come into operation on 14th October 1974.

2. The Interpretation Act 1889(c) shall apply to the interpretation of this Order as it applies to the interpretation of an Act of Parliament.

3. The abstract of the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972(d) for posting in pursuance of section 139(1) of the Factories Act 1961 shall be in the form set out in the Schedule to this Order.

Signed by order of the Secretary of State.

23rd September 1974.

*John Locke,*  
Deputy Secretary,  
Department of Employment.

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(a) 1961 c. 34.  
(c) 1889 c. 63.

(b) S.I. 1968/729 (1958 II, p. 2108).  
(d) S.I. 1972/917 (1972 II, p. 2870).

## SCHEDULE

Abstract of the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 prescribed by the Secretary of State by virtue of section 139(1) of the Factories Act 1961.

### *Citation, commencement and revocation*

1.—(1) These Regulations may be cited as the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 and shall come into operation on 21st June 1973 with the exception of Regulation 10(4) which shall come into operation on 21st June 1974.

(2) The Regulations dated 12th August 1902 with respect to the manufacture of felt hats are hereby revoked.

(3) The Cellulose Solutions Regulations 1934 are hereby revoked—

(a) in the case of the second proviso to the preamble, the definitions and Regulations 3, 4 and 17 as from 21st June 1974; and

(b) in the case of the remainder of those Regulations, as from 21st June 1973.

### *Interpretation*

2.—(1) The Interpretation Act 1889 shall apply to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament, and as if these Regulations and the Regulations hereby revoked were Acts of Parliament.

(2) In these Regulations, unless the context otherwise requires, the following expressions have the meanings hereby assigned to them respectively, that is to say—

“aqueous ammonia” means ammonia gas dissolved in water;

“commercial butane” means a hydrocarbon mixture consisting predominantly of butane, butylene or any mixture thereof;

“commercial propane” means a hydrocarbon mixture consisting predominantly of propane, propylene or any mixture thereof;

“dangerous concentration of vapours” means a concentration greater than the lower flammable limit of the vapours;

“factory” includes any premises and place to which these Regulations apply;

“fire resisting structure” means any of the following, that is to say, any building, part of a building, structure, cabinet and enclosure which is constructed in conformity with a specification for fire resisting structures being a specification approved for the time being for the purposes of these Regulations by certificate of the Chief Inspector;

“highly flammable liquid” means any of the following, other than aqueous ammonia, liquefied flammable gas and liquefied petroleum gas, that is to say, any liquid, liquid solution, emulsion or suspension which, when tested in the manner specified in Schedule 1 to these Regulations, gives off a flammable vapour at a temperature of less than 32 degrees Celsius and, when tested in the manner specified in Schedule 2 to these Regulations, supports combustion;

“liquefied flammable gas” means any substance which at a temperature of 20 degrees Celsius and a pressure of 760 millimetres of mercury would be a flammable gas, but which is in liquid form as a result of the application of pressure or refrigeration or both;

“liquefied petroleum gas” means commercial butane, commercial propane and any mixture thereof;

“undertaking” includes the Crown and any municipal or other public authority.

(3) References in these Regulations to any enactment shall be construed as references to that enactment as amended by or under any other enactment.

#### *Application of Regulations*

3.—(1) Except as provided in paragraphs (4) to (6) of this Regulation and in Regulations 12 and 17, these Regulations shall apply to—

(a) all factories; and

(b) all premises, places, processes, operations and works to which the provisions of section 50 (so far as the Secretary of State may make Regulations thereunder) and of Part IV (with respect to special regulations for safety and health) of the Factories Act 1961 are applied by any of the following provisions of that Act, namely, section 123 (which relates to electrical stations), section 124 (which relates to institutions), section 125 (which relates to certain dock premises and certain warehouses), section 126 (which relates to ships) and section 127 (which relates to building operations and works of engineering construction),

where any highly flammable liquid is present for the purposes of, or in connection with, any undertaking, trade or business.

(2) Except as provided in paragraphs (4) to (6) of this Regulation, Regulations 1 to 4, 7 and 18 shall apply to all factories and all such premises, places, processes, operations and works as are mentioned in paragraph (1) of this Regulation where any liquefied petroleum gas is present for the purposes of, or in connection with, any undertaking, trade or business.

(3) Where in any factory there is any highly flammable liquid or liquefied petroleum gas of which the occupier is not the owner and the highly flammable liquid or liquefied petroleum gas is used by or under the direction of some person other than the occupier or a person in the employment of the occupier, that other person or (if he is in the employment of the owner) the employer of that other person shall, in relation to that highly flammable liquid or liquefied petroleum gas, be deemed for the purposes of these Regulations to be the occupier of the factory.

(4) These Regulations shall not apply to any premises or parts of premises in respect of which a licence or a continuing certificate under the Explosives Act 1875—

(a) is in force; or

(b) would, but for the fact that the premises or parts of premises are under the control, or held for the service, of the Crown, be required to be in force.

(5) Nothing in these Regulations shall apply as respects any highly flammable liquid in a factory so long as it is present in such circumstances that provisions of the Factories (Testing of Aircraft Engines and Accessories) Special Regulations 1952 apply to or in relation to it or to anything done to, with or in relation to it.

(6) Nothing in these Regulations shall apply to any highly flammable liquid or liquefied petroleum gas stored (as fuel, cargo or otherwise) in any fixed storage tanks on a ship.

(7) The provisions of these Regulations shall be in addition to and not in substitution for or in diminution of other requirements imposed by or under the Factories Act 1961.

*Exemption certificates*

4. The Chief Inspector may (subject to such conditions as may be specified therein) by certificate in writing (which he may in his discretion revoke at any time) exempt from all or any of the requirements of these Regulations—

- (a) any factory or part of any factory; or
- (b) any class or description of factories or parts thereof; or
- (c) any machine, plant, apparatus, process, operation or work, or any class or description of machines, plant, apparatus, processes, operations or works; or
- (d) any highly flammable liquid or liquefied petroleum gas or any class or description of highly flammable liquids or liquefied petroleum gases, if he is satisfied that the requirements in respect of which the exemption is granted are not necessary for the protection of persons employed.

*Storage*

5.—(1) Except as provided in paragraph (4) of this Regulation and except in the case of highly flammable liquids present in any place in accordance with Regulation 8(3) or being conveyed within the factory, all highly flammable liquids shall be stored—

- (a) in suitable fixed storage tanks in safe positions; or
- (b) in suitable closed vessels kept in a safe position in the open air and, where necessary, protected against direct sunlight; or
- (c) in suitable closed vessels kept in a storeroom which either is in a safe position or is a fire resisting structure; or
- (d) in the case of a workroom where the aggregate quantity of highly flammable liquids stored does not exceed fifty litres, in suitable closed vessels kept in a suitably placed cupboard or bin being a cupboard or bin which is a fire resisting structure.

(2) Except in the case of tanks and vessels which have been emptied and made free of vapour from highly flammable liquids, all openings (other than those necessary for venting) in cupboards, bins, tanks and vessels which have at any time been used for storing highly flammable liquids (whether or not for the time being containing any highly flammable liquid) shall be kept closed except as necessary for the use, operation or maintenance of these cupboards, bins, tanks and vessels.

(3) Wherever highly flammable liquids are stored in accordance with paragraph (1)(a), (b) or (c) of this Regulation, all reasonably practicable steps shall be taken to ensure that any highly flammable liquid which leaks, is spilt or otherwise escapes shall be contained or immediately drained off to a suitable container or to a safe place, or otherwise treated to make it safe.

(4) Nothing in this Regulation shall apply to—

- (a) highly flammable liquids (being petroleum-spirit or any substance to which provisions of section 1 of the Petroleum (Consolidation) Act 1928 were applied by the Petroleum (Mixtures) Order 1929 and the Petroleum (Liquid Methane) Order 1957) authorised to be kept by a licence in force under the said Act of 1928 or which, but for the fact that

the highly flammable liquids are kept in premises occupied by the Crown, would be required to be so authorised;

- (b) highly flammable liquids in the fuel tanks of vehicles or engines for the purpose of operating the vehicles or engines;
- (c) any suitable small closed vessel containing not more than 500cc of highly flammable liquid.

*Marking of storerooms, tanks, vessels, etc.*

6.—(1) Except where it is impracticable to do so and except as provided in paragraph (3) of this Regulation, every storeroom, cupboard, bin, tank and vessel used for storing highly flammable liquid shall be clearly and boldly marked “Highly Flammable” or “Flashpoint below 32°C” or “Flashpoint in the range of 22°C to 32°C” or otherwise with an appropriate indication of flammability.

(2) Where it is impracticable to mark any storeroom, cupboard, bin, tank or vessel in accordance with the foregoing paragraph of this Regulation, the words “Highly Flammable Liquid” shall be clearly and boldly displayed as near to it as possible.

(3) Nothing in this Regulation shall apply to—

- (a) any of the following, that is to say, any cupboard, bin, tank or vessel, which contains spirits intended for human consumption;
- (b) the fuel tanks of vehicles or engines which contain any highly flammable liquid for the purpose of operating the vehicles or engines;
- (c) any suitable small closed vessel containing not more than 500cc of highly flammable liquid;
- (d) any aerosol dispenser in which the amount of highly flammable liquid contained is not in excess of either 45 per cent by weight of the total contents or 250 grammes in weight.

*Liquefied petroleum gas—storage and marking of tanks, vessels, cylinders, etc.*

7.—(1) Except as provided in paragraphs (2), (3) and (6)(a) of this Regulation, all liquefied petroleum gas not in use shall be stored—

- (a) in suitable underground reservoirs below ground the surface of which is wholly or mainly in the open air, or in suitable fixed storage tanks or suitable fixed storage vessels being tanks or vessels in safe positions either in the open air or below ground the surface of which is wholly or mainly in the open air; or
- (b) in suitable movable storage tanks or suitable movable storage vessels kept in safe positions in the open air; or
- (c) in the pipe-lines and pumps or other appliances forming part of a totally enclosed pipe-line system; or
- (d) in suitable cylinders kept in safe positions in the open air, or where this is not reasonably practicable, in a storeroom constructed of non-combustible material being a storeroom which is adequately ventilated, which either is in a safe position or is a fire resisting structure and which is not used for any purpose other than the storage of liquefied petroleum gas or acetylene cylinders.

(2) No liquefied petroleum gas other than in suitable cylinders or suitable pipe-lines shall be present in any workplace and the number of liquefied petroleum gas cylinders or pipe-lines present at any one time in any work-

place shall be as small as is reasonably practicable having regard to the processes or operations being carried on.

(3) Every liquefied petroleum gas cylinder shall be stored until such time before being first required for use or manipulation as is reasonable, and when its contents have been expended shall, as soon as reasonably practicable, be removed from the workplace and stored or refilled without delay.

(4) Except where it is impracticable to do so, and except as provided in paragraph (6) of this Regulation, every tank, vessel, reservoir, cylinder and storeroom used for storing liquefied petroleum gas shall be clearly and boldly marked "Highly Flammable—L.P.G." or otherwise to the like effect.

(5) Where it is impracticable to mark any tank, vessel, reservoir, cylinder or storeroom in accordance with the last foregoing paragraph of this Regulation, the words "Highly Flammable—L.P.G." shall be clearly and boldly displayed as near to it as possible.

(6) (a) Nothing in this Regulation shall apply to—

(i) liquefied petroleum gas in the fuel tanks of vehicles or engines for the purpose of operating the vehicles or engines;

(ii) any suitable small closed vessel containing not more than 500 cc of liquefied petroleum gas.

(b) Nothing in paragraphs (4) and (5) of this Regulation shall apply to any aerosol dispenser in which the amount of liquefied petroleum gas contained is not in excess of either 45 per cent by weight of the total contents or 250 grammes in weight.

(7) In this Regulation "cylinder" means any container designed, fabricated and tested in accordance with a pressure vessel code for the time being approved for the purpose of these Regulations by the Chief Inspector.

#### *Precautions against spills and leaks*

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

(2) A totally enclosed system used for such conveyance shall so far as is practicable be so designed, constructed, installed, placed and maintained as to avoid leakage.

(3) The quantity of any highly flammable liquid present at any one time in any workplace in course of manufacture or for use or manipulation and in the process tanks, process vessels, pipe-lines, pumps, plant, equipment and apparatus in the workplace shall be as small as is reasonably practicable having regard to the processes or operations being carried on.

(4) All reasonably practicable steps shall be taken to ensure that tanks or vessels containing any highly flammable liquid do not leak. Every such tank and vessel shall be kept closed except as necessary during the manufacture, use or manipulation of the highly flammable liquid therein, or for the operation or maintenance of the tank or vessel, and every such tank and vessel shall be so designed, constructed and placed as to avoid so far as is reasonably practicable the risk of spilling.

(5) 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.

(6) Any tank or vessel used to contain any highly flammable liquid, other than a fixed process tank, a fixed process vessel, a fixed storage tank or a fixed storage vessel, shall, when its contents have been expended, unless it has been made free of vapour from the liquid or is to be immediately re-used, be removed without delay to a safe place in the open air or to a suitably placed storeroom being a storeroom which is a fire resisting structure or be placed in a suitably placed cupboard or bin being a cupboard or bin which is a fire resisting structure.

(7) All such empty tanks and vessels as aforesaid which have not been made free of vapour from the liquid shall be kept in such a safe place or such a storeroom, cupboard or bin as aforesaid until next required for use or disposal, and any such tank or vessel shall be kept closed.

#### *Sources of ignition*

9.—(1) No means likely to ignite vapour from any highly flammable liquid shall be present where a dangerous concentration of vapours from highly flammable liquids may reasonably be expected to be present.

(2) Where in any place a dangerous concentration of vapours from highly flammable liquids may reasonably be expected to be present, any cotton waste or other material in that place which—

(a) has been used in such a manner as to render the cotton waste or other material liable to spontaneous combustion; or

(b) is contaminated with any highly flammable liquid,

shall be deposited without delay in a metal container having a suitable cover or be removed without delay to a safe place.

(3) Where any cellulose nitrate is present in any highly flammable liquid, all practicable steps shall be taken to prevent the deposit of any solid residue resulting therefrom on any surface which is liable to attain a temperature of 120 degrees Celsius.

(4) Nothing in paragraph (2) of this Regulation shall apply to lagging in position on pipework.

#### *Prevention of escape of vapours and dispersal of dangerous concentrations of vapours*

10.—(1) Where any highly flammable liquid is present in any workplace, steps shall be taken to prevent so far as is reasonably practicable the escape of vapours from any such highly flammable liquid into the general atmosphere of that or any other workplace.

(2) Except as provided in paragraph (5) of this Regulation, where a dangerous concentration of vapours from highly flammable liquids may reasonably be expected to be evolved in any process or operation, the process or operation shall, where reasonably practicable, be carried on within a cabinet or other enclosure which, in either case, is effective to prevent the escape of such vapours into the general atmosphere of the workroom or any other workroom, is adequately ventilated by mechanical means and is a fire resisting structure:

Provided that in the case of a batch-loaded box-type oven used to evaporate highly flammable liquid being an oven with a cubic capacity of less than one and a half cubic metres and having natural ventilation sufficient to prevent the occurrence of a dangerous concentration of vapours in the oven, the oven shall not be required to be ventilated by mechanical means.

(3) Except as provided in paragraph (5) of this Regulation, where it is not reasonably practicable to comply with the requirement of the last foregoing paragraph of this Regulation where in any workroom any such dangerous concentration of vapours may reasonably be expected to be evolved in any process or operation, the workroom shall have exhaust ventilation provided by mechanical means, being exhaust ventilation adequate to remove such vapours from the workroom.

(4) A workroom required by the last foregoing paragraph of this Regulation to have exhaust ventilation shall be a fire resisting structure with the exception of any of the following forming part of it, that is to say, any external doors, external windows and external walls, any openings provided for ventilation and any tops or ceilings of single storey buildings or of top floor rooms.

(5) Nothing in paragraphs (2) and (3) of this Regulation shall apply to any room if the only work with highly flammable liquids which is being carried on therein is work to the room and if there is secured natural or other ventilation of the room adequate to prevent the occurrence there of a dangerous concentration of vapours from the liquids.

(6) Ventilation provided or secured in pursuance of this Regulation shall be kept in operation or use at all necessary times.

(7) All ducts, trunks and casings used in connection with ventilation provided or secured in pursuance of this Regulation shall be fire resisting structures.

(8) In the case of electric motors used in connection with exhaust ventilation systems provided in pursuance of this Regulation which comprise ducts, being systems constructed or installed after the date of commencement of these Regulations or constructed or installed before that date and substantially reconstructed after that date, such electric motors shall not be situated in the path of vapours from any highly flammable liquids being exhausted by the systems.

(9) All venting devices of fixed tanks and fixed vessels containing highly flammable liquids shall discharge to a safe place and, where necessary, shall be provided with a suitable wire gauze effective as a flame arrestor or other suitable flame arrestor.

*Explosion pressure relief of fire resisting structures*

**11.—**(1) Where in accordance with provisions of Regulations 5, 8 or 10 a storeroom, workroom, cabinet or enclosure is a fire resisting structure provision may be made in its structure for pressure relief in the case of explosion and, in the case of a storeroom, for adequate natural ventilation notwithstanding, in either case, anything contained in any specification approved for the purposes of the definition of the expression “fire resisting structure” contained in Regulation 2.

(2) Where in pursuance of the foregoing paragraph of this Regulation provision is made in a fire resisting structure for pressure relief in the case of explosion such provision shall be so arranged that any pressure will vent to a safe place.



*Means of escape in case of fire*

**12.**—(1) There shall be adequate and safe means of escape in case of fire from every room in which any highly flammable liquid is manufactured, used or manipulated.

(2) This Regulation shall not apply to factories other than premises and places to which provisions of the Factories Act 1961 are applied by section 125 (which relates to certain dock premises and certain warehouses) or section 127 (which relates to building operations and works of engineering construction) of that Act.

*Prevention and removal of solid residues*

**13.**—(1) Without prejudice to Regulation 9(3), whenever as a result of any process or operation involving any highly flammable liquid a deposit of any solid waste residue liable to give rise to a risk of fire is liable to occur on any surface—

- (a) steps shall be taken where reasonably practicable to prevent as far as possible the occurrence of all such deposits; and
- (b) where any such deposit occurs, effective steps shall be taken, as often as necessary to prevent danger, to remove all such residues as aforesaid and put them in a safe place.

(2) No removal of any such residue containing cellulose nitrate shall be effected by the use of an iron or steel implement.

*Smoking*

**14.**—(1) No person shall smoke in any place in which any highly flammable liquid is present and the circumstances are such that smoking would give rise to a risk of fire.

(2) The occupier shall take all reasonably practicable steps to ensure compliance with the foregoing paragraph of this Regulation and such steps shall include—

- (a) the display at or as near as possible to every place to which the said paragraph applies of a clear and bold notice indicating that smoking is prohibited in that place; or
- (b) the display at every entrance to the factory at which employed persons enter of a clear and bold notice indicating that smoking is prohibited throughout the factory except at those places where there is displayed a notice indicating that smoking is permitted.

*Control of ignition and burning of highly flammable liquids*

**15.**—(1) Except where the sole purpose is to dispose of it as waste by burning it and except as provided in paragraph (3) of this Regulation, no highly flammable liquid shall be ignited except in plant or apparatus suitable for the purpose of burning that highly flammable liquid safely and by the proper use of that plant or apparatus.

(2) Where the sole purpose is to dispose of any highly flammable liquid as waste by burning it, it shall be burnt either—

- (a) in plant or apparatus suitable for the purpose of burning that highly flammable liquid safely; or
- (b) by a competent person, in a safe manner and in a safe place.

(3) The prohibition contained in paragraph (1) of this Regulation shall not apply where highly flammable liquid is burnt in order to provide persons with training in fighting fire if—

- (a) it is burnt by a competent person, in a safe manner and in a safe place; and
- (b) the training is carried out under the direct and continuous supervision of a competent person.

#### *Power to take samples*

**16.—**(1) An inspector may at any time after informing the occupier or, if the occupier is not readily available, a foreman or other responsible person, take for testing sufficient samples of any material in the factory which in his opinion may prove on testing to be a highly flammable liquid.

(2) The occupier or the foreman or other responsible person may, at any time when a sample is taken under this Regulation, and on providing the necessary appliances, require the inspector to divide the sample into three parts, to mark and seal up each part and—

- (a) to deliver one part to the occupier, or the foreman or other responsible person;
- (b) to retain one part for future comparison;
- (c) to submit one part to testing,

and any test under this Regulation shall, if so required, be carried out by a government department.

(3) The provisions of this Regulation are without prejudice to the provisions of section 78 of the Factories Act 1961.

#### *Fire fighting*

**17.—**(1) There shall in every factory where any highly flammable liquid is manufactured, used or manipulated be provided and maintained appropriate means for fighting fire, which shall be so placed as to be readily available for use.

(2) This Regulation shall not apply to factories other than premises and places to which provisions of the Factories Act 1961 are applied by section 125 (which relates to certain dock premises and certain warehouses) or section 127 (which relates to building operations and works of engineering construction) of that Act.

#### *Duties of persons employed*

**18.** It shall be the duty of every person employed in a factory to which any of these Regulations apply to comply with such of the requirements of the Regulations as relate to the doing of or refraining from an act by him and to the use by him of any plant, equipment or appliance and to co-operate in carrying out these Regulations. If a person employed as aforesaid discovers any defect in the plant, equipment or appliances, it shall be his duty to report such defect without delay to the occupier, manager or other responsible person.

SCHEDULE 1

Scope. This schedule gives the method of test by flashpoint. (Closed cup method). The method describes a procedure for determining if a flammable liquid when maintained at the specified temperature of 32°C and under the conditions of test, gives off sufficient flammable vapour at this temperature to cause ignition on application of an external source of flame applied in a standard manner.

SCHEDULE 2

Scope. This schedule gives the method of test for combustibility. The method describes a procedure for determining if the product when heated under the conditions of test and exposed to an external source of flame applied in a standard manner supports combustion.

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EXPLANATORY NOTE

*(This Note is not part of the Order.)*

This Order prescribes the form of abstract of the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 for posting up in factories and other places to which the Factories Act 1961 applies in which any highly flammable liquid or liquefied petroleum gas is present for the purposes of, or in connection with, any undertaking, trade or business.

As respects highly flammable liquids, the regulations contain requirements as to the manner of their storage, the marking of storage accommodation and vessels, the precautions to be taken for the prevention of fire and explosion, the provision in certain cases of fire-fighting apparatus and the securing in certain cases of means of escape in case of fire.

As respects liquefied petroleum gases, the regulations contain requirements as to the manner of their storage and the marking of storage accommodation and vessels.

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STATUTORY INSTRUMENTS

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