

## **THE STATIC AND MOBILE PRESSURE VESSELS (UNFIRED) RULES, 1981**

**G.S.R. 45 (E), dated 4th February, 1981**— In exercise of the powers conferred by Sees. 5 and 7 of the Indian Explosives Act, 1884 (4 of 1884), the Central Government hereby makes the following rules, namely:

### **CHAPTER I**

#### **PRELIMINARY**

##### **1. Short title and commencement.--**

- (1) These rules may be called the Static and Mobile Pressure Vessels (Unfired) Rules, 1981.
- (2) They shall come into force on the date of their publication in the official Gazette.

##### **2. Definitions.—**

In these rules, unless the context otherwise requires ;

- (a) "Act" means the Indian Explosives Act, 1884 (4 of 1884);
- (b) "approved" means a drawing, design, specification on code approved by the Chief Controller;
- (bb) "bottling plant" means a premises where cylinders are filled with compressed gas;
- (c) "Chief Controller" means the Chief Controller of Explosives;
- (d) "Competent Person" means a person or an organisation recognised by the Chief Controller, for such gases and for such period as may be specified as competent for carrying out tests, examinations, inspections and certification for installations and transport vehicles as stipulated in these rules, if such a person or organisation possesses the qualifications, experience and other requirements as set out in Appendix II to these rules and is recognised as per procedure laid down in rule 11-A:

Provided that the Chief Controller may relax the requirements of qualifications in respect of a competent person if such a person is exceptionally experienced and knowledgeable, but not the requirements in respect of the facilities at his command;

- (e)<sup>1</sup>["compressed gas" means any permanent gas, liquefiable gas or gas dissolved in liquid or cryogenic liquid under pressure or gas mixture which in a closed pressure vessel exercises a pressure exceeding one atmosphere (gauge) at maximum working temperature and includes Hydrogen Fluoride. In case of vessel without insulation or refrigeration, the maximum working temperature shall be considered as 55°C;]
- (f) "Controller of Explosives" includes the Deputy Chief Controller of Explosives, Deputy Controller of Explosives and Assistant Controller of Explosives;
- (g) "corrosion" means all forms of wastage, and includes oxidation, scaling, mechanical abrasion and erosion;

(gg) "critical temperature" means the temperature above which gas cannot be liquefied by the application of pressure alone;

<sup>2</sup>[(gga) "cryogenic liquid" means liquid form of permanent gas having normal boiling point below minus 165° C.

(ggb) "cryogenic pressure vessel" means a pressure vessel intended for storage or transportation of cryogenic liquid and includes cold converters, vacuum insulated evaporators, vacuum insulated storage or transport tanks and thermosyphon tanks.]

(ggg) "cylinder" or "gas cylinder" means any closed metal container intended for storage and transport of compressed gas having the same means as assigned to it in Cl. (xvi) of Rule 2 of the Gas Cylinder Rules, 1981;

(h) "design" includes drawings, calculation, specifications, models, codes and all other details necessary for the complete description of the pressure vessel and its construction;

(i) "design pressure" means the pressure used in the design calculations of a vessel for the purpose of determining the minimum thickness of the various component/parts of the vessel;

(ii) "dispenser" means an equipment installed in liquefied petroleum gas dispensing station, meant for dispensing liquefied petroleum gas as automotive fuel to motor vehicles.

(j) "district authority" means--

(i) in towns having a Commissioner of Police, the Commissioner or a Deputy Commissioner of Police; and

(ii) in any other place, the District Magistrate;

(k) "filling density" means the ratio of weight of liquefiable gas allowed in a pressure vessel to the weight of water that the vessel will hold at 15 °C;

(kk) "fill point" means the point of the inlet pipe connection of a vessel where hose is connected for filling the compressed gas into the vessel.

(l) "flammability range" means the difference between the minimum and maximum percentage by volume of the gas in mixture with air that forms a flammable mixture at atmospheric pressure and ambient temperature;

(m) "flammable compressed gas" means gas 13 per cent, or less of which when mixed with air forms a flammable mixture or whose flammable range with air is greater than 12 per cent;

(n) "Form" means the Form appended to these rules;

(o) "gas free" in relation to a pressure vessel means the concentration of flammable or toxic gases or both if such pressure vessel is within the safe limits specified for persons to enter and carry out hot work in such vessels;

- (p) "Inspector" means a professional organisation recognised by the Chief Controller for certifying pressure vessels and their fittings after carrying out stage-wise inspection during fabrication as stipulated in the rules so as to ensure that the pressure vessels are designed and constructed in accordance with IS:2825 or any other Code approved by the Chief Controller, if the constituent members of the organisation possesses the qualifications and experience and other requirements as set out in Appendix II to these rules and the recognition is granted as per procedure laid in rule 11-A;
- (q) "installations" means any place which has been specially prepared for the storage of compressed gas in pressure vessels;
- (r) "liquefiable gas" means any gas that may be liquefied by pressure above 0°C, but will be completely vapourized when in equilibrium with normal atmospheric pressure (760 mm Hg) at 30°C;
- (r-a) "liquefied petroleum gas" includes hydrocarban gases in liquefied state at normal ambient temperature by the application of pressure, and conforming to the Indian Standard Specification No. IS: 4576;
- (r-b) "liquefied petroleum gas dispensing stations" means a premises used for storing and dispensing liquefied petroleum gas as automotive fuel to the motor vehicles;
- (r-c) "motor vehicle" means a vehicle having the meaning assigned to it in sub-section (28) of Sec. 2 of the Motor Vehicles Act, 1988 (59 of 1988);
- (r-d) "petroleum service station" means a premises used for storage of petroleum for the purpose of fuelling motor vehicles, and licensed in Form XII of the Petroleum Rules, 1976;
- (s) "permanent gas" means a gas whose critical temperature is lower than 10°C;
- (t) "Pressure vessel" means any closed metal container of whatever shape, intended for the storage and transport of any compressed gas which is subjected to internal pressure and whose water capacity exceeds one thousand litres and includes interconnecting parts and components thereof upto the first point of connection to the connected piping and fittings, but does not include containers wherein steam or other vapour is or is intended to be generated or water or other liquid is or is intended to be heated by the application of fire or the products of combustion or by electrical means, heat exchangers, evaporators, air receivers, steam type digestors, steam type sterilizers, autoclaves, reactors, calorifiers, pressure piping components, such as, separators, or strainers and vessels containing a liquid under a blanket of compressed inert gas;
- (u) "safety relief device" means an automatic pressure relieving device actuated by the pressure upstream of the valve and characterised by fully opened pop action, intended to prevent the rupture of a pressure vessel under certain conditions of exposure;
- (v) "source of ignition" means naked lights, fires, exposed incandescent material, electric welding arcs, lamps, other than those specially approved for use in flammable atmosphere, or a spark or flame produced by any means;
- (vv) "tank truck loading or unloading gantry" or "hard stand" means the position of parking of tank truck or mobile pressure vessel for loading or unloading of compressed gas into or from it;
- (w) "transport" means the transport of a pressure vessel filled with any compressed gas

from one place to another but does not include movement of the vessel from one place to another in the same premises;

(x) "vehicle" means a mechanically propelled carriage designed to transport by land compressed gas in a pressure vessel mounted thereon, and shall not include a vessel forming the barrel of a rail tank wagon;

(y) "vessel" means a pressure vessel;

(z) "water capacity" means capacity in litres of the pressure vessel when completely filled with water at 15°C;

### **3. General exemptions.—**

Nothing in these rules shall apply to vessels which form part of a processing plants. For the purpose of this rule vessels forming part of a processing plant shall mean vessel in which a unit process or unit operation is carried out and vessels which contain, as a process requirement, a compressed gas received from and consumed in the same processing plant, provided that the water capacity of the vessel (s) shall be such that the gas stored therein at the maximum working pressure shall not exceed the requirement for feeding the consuming point (s) for a period not exceeding 16 hours at the designed flow rate.

### **4. Restriction on filling, manufacture and import.—**

(1) No person shall fill any compressed gas in any vessel or transport any vessel filled with any compressed gas unless such vessel has been manufactured in accordance with a type or standard or code as specified under Rule 12.

(2) No person shall manufacture any vessel approved under sub-rule (1) without the prior approval of the Chief Controller.

(3) Any person seeking approval of the Chief Controller under sub-rule (2) shall submit to him--

(a) the particulars specified in Appendix I to these rules; and

(b) a scrutiny fee of rupees five hundred in the manner specified under Rule 11.

(4) No person shall import an vessel without the prior approval of the Chief Controller.

(5) Any person seeking the approval of the Chief Controller under sub-rule (4) shall submit to him--

(a) a test and inspection certificate of the vessel from the manufacturer or the inspecting agency of the country of origin;

(b) the design details of the vessel, its fittings and particulars of specifications of the materials used in construction thereof; and

(c) a scrutiny fee of rupees five hundred in the manner specified under Rule 11.

### **5. Restriction on delivery and despatch.—**

(1) No person shall deliver or despatch any compressed gas filled in a vessel to any person other than the holder of a storage licence issued under the these rules or to port authority or a railway administration.

(2) No compressed gas delivered or despatched under sub-rule (1) shall exceed the quantity which the person to whom it is delivered or despatched is authorised to store under the licence held by him.

#### **6. Repair to pressure vessels.—**

(1) No person shall carry out any repairs, additions or alterations to any vessel unless proposed repairs, additions or alterations and then method of execution have been approved by the Chief Controller. Any such repairs, additions or alteration approved by the Chief Controller shall be carried out in the manner and by practices acceptable under the design code referred in rule 12 :

Provided that nothing in this rule shall apply to the replacement of any of the fitments of the vessel which does not involve any hearing.

(2) Before any repairs, additions or alterations are carried out to any vessel, the same shall be completely emptied and purged with an inert gas.

(3) Complete record of repairs, additions or alterations referred to in sub-rule (1) shall be maintained and made available to the Chief Controller and his permission shall be obtained before recommissioning the vessel.

#### **7. Purging of pressure vessels used for flammable gases.—**

(1) Before using any new vessel or before the refilling of any existing vessel which has been made gas free, air contained therein shall be purged by an inert gas or by the gas for which the vessel is to be used.

(2) If the vessel is purged by means of flammable gas, the flammable mixture so formed shall be vented from the vessel only after taking adequate precautions to prevent its ignition.

#### **8. Prohibition of employment of children and intoxicated persons.—**

No person under the age of eighteen years or who is in a state of intoxication shall be employed for the loading, unloading or transport of any vessel containing compressed gas, or in any premises licensed under these rules.

#### **9. Prohibition of smoking, fires, lights, etc.—**

No person shall smoke and no matches, fires, lights or articles or substance, capable of causing ignition of any flammable gas shall be allowed, at any time in proximity to a place where any compressed gas is stored, handled or transported in a vessel.

#### **9-A. Supervision and operation within the licensed premises.—**

The operation of the licensed premises shall be under the supervision of persons having knowledge of the equipments being used in the premises and who is/are trained in handling the compressed gas, and other operators shall be conversant with the hazards associated with the compressed gas and fire fighting operations.]

#### **10. Special precautions against accidents.—**

(1) No person shall commit or attempt to commit any act which may tend to cause a fire or explosion in or about any place where any compressed gas is stored, handled or transported in a vessel.

(2) All empty vessels which has contained, any flammable or toxic gases, shall, except when they are opened for the purpose of filling or cleaning or for rendering the gas-free, be kept securely closed until they have been cleaned or freed of the gas, as the case may be.

(3) Every person storing compressed gas in a vessel and every person in charge of, or engaged in the storage, handling and transport of such gas in vessels, shall at all times—

(i) comply with the provisions of these rules and the conditions of any licence issue thereunder;

(ii) observe all precautions for the prevention of accident by fire or explosion; and

(iii) prevent any person from committing any act referred is sub-rule (1).

#### **11. Procedure for payment of fees.—**

All fees payable under these be paid through crossed demand draft on any nationalised bank in favour of the Chief Controller of Explosives, Nagpur and in cases where the amount payable does not exceed Rs. 100, the payment may be made by cash, money order, postal order or cheque drawn on a local bank.

#### **11-A. Procedure for grant and revocation of recognition to competent person and Inspector.—**

(i) Anybody intending to be recognised as Competent Person or Inspector shall submit to the Chief Controller an application in the form prescribed in Appendix III. Every application shall be accompanied by a scrutiny fee of Rs. 500 for application for Competent Person and Rs. 1000 for application for Inspector. The Chief Controller shall register such application and within a period of sixty days of the date of receipt of the application, either after having satisfied himself with regard to competence and professional ethics recognise the applicant as a competent person or any Inspector as the case may be or reject the application specifying the reasons therefor.

(ii) The Chief Controller may after giving an opportunity to the Inspector or Competent Person of being heard revoke the recognition--

(a) if he has reason to believe that an Inspector or Competent Person has violated any condition stipulated in the letter of recognition or has carried out a test, examination and inspection or has acted, in a manner inconsistent with the intent or the purpose or these rules; or

(b) for any other reason to be recorded in writing.

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1.Substituted by GSR372(E) dt.17.05.2002 for the following words:-

"Compressed gas" means any permanent gas, liquefiable gas or gas dissolved in liquid, under pressure or gas mixture, which in a closed pressure vessel exercises a pressure exceeding two atmosphere (gauge) at the maximum working temperature and includes Hydrogen Fluoride. In case of vessels without insulation or refrigeration, the maximum working temperature shall be considered as 55°C;

2. Inserted by GSR372(E) dt.17.05.2002

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