

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

Sub-Committee of Experts on the
Transport of Dangerous Goods
(Twentieth session, 3-12 December 2001,
agenda item 2)

ADDITIONAL PROVISIONS FOR THE TRANSPORT OF GASES

Proposals by the European Liquefied Petroleum Gas Association (AEGPL)

➤ Proposal 1 :

To include in Part 1 (general provisions) or in Part 4 (general provisions of Packing Instructions) :
“Empty uncleaned pressure receptacles which have contained substances of class 2 are not subject to the conditions of the UN Regulation if adequate measures have been taken to nullify any hazard. Hazards are nullified if adequate measures have been taken to nullify all hazards of class 2”.

➤ Proposal 2 : To change the UN number 2037 definition :

2037 *“Receptacles, Small, Containing Gas (Gas Cartridges) with or without a release device, non refillable”.*

➤ Proposal 3 : Amendment of chapter 6.2 :

6.2.1.1.1. (general) → to add : *“... and during normal use”.*

6.2.1.2.2 → to add: *“The product or the range of products to be contained in the pressure receptacle shall be compatible with the material”.*

6.2.1.3.2 → to add: *“For liquefied gases cylinders, the number of openings shall be preferably the minimum necessary for the service and shall be located where possible in the vapor phase”.*

6.2.1.4 Initial inspection & test :

6.2.1.4.1 *“in addition, for class 2 gases cylinders :*
→ to insert after (e) : *(f) a burst test under hydraulic pressure”*
→ to insert after (i) the following dispositions :
“in addition, for class 2 gases cylinders :
(k) a radiographic or macro examination of the welds
(l) a visual examination of the surface of the welds”.

6.2.1.5 Periodic inspection & test :

- 6.2.1.5.1. → to add in the 1st sentence a *reference to the relevant periodicities* :
 → to add after “inspections” , “*in accordance with the periodicities defined in the relevant packing instructions (P200 as far as class 2 gases are concerned)*”.
 → to modify Note 2 as follows : to change “... cylinders and tubes...” in “... cylinders or tubes...”.
 → to add at the end of the sentence of Note 2 : “... & other test procedures”.

➤ Proposal 4 for inclusion of general requirements for aerosols dispensers and small receptacles containing gas (gas cartridges).

6.2.4 General requirements for aerosol dispensers and small receptacles containing gas (gas cartridges)

6.2.4.1 *Design and construction*

6.2.4.1.1 Aerosol dispensers (UN No.1950 aerosols) containing only a gas or a mixture of gases, and small receptacles containing gas (gas cartridges) (UN No.2037), shall be made of metal. This requirement shall not apply to aerosols and small receptacles containing gas (gas cartridges) with a maximum capacity of 100 ml for UN No. 1011 butane. Other aerosol dispensers (UN No.1950 aerosols) shall be made of metal, synthetic material or glass. Receptacles made of metal and having an outside diameter of not less than 40 mm shall have a concave bottom.

6.2.4.1.2 The capacity of receptacles made of metal shall not exceed 1000 ml; that of receptacles made of synthetic material or of glass shall not exceed 500 ml.

6.2.4.1.3 Each model of receptacles (aerosol dispensers or cartridges) shall, before being put into service, satisfy a hydraulic pressure test carried out in conformity with 6.2.4.2.

6.2.4.1.4 The release valves and dispersal devices of aerosol dispensers (UN No.1950 aerosols) and the valves of UN No.2037 small receptacles containing gas (gas cartridges) shall ensure that the receptacles are so closed as to be leakproof and shall be protected against accidental opening. Valves and dispersal devices which close only by the action of the internal pressure are not to be accepted.

6.2.4.2 Initial testing

6.2.4.2.1 The internal pressure to be applied (test pressure) shall be 1.5 times the internal pressure at 50 °C, with a minimum pressure of 1 MPa (10 bar).

6.2.4.2.2 The hydraulic pressure tests shall be carried out on at least five empty receptacles of each model:

- (a) until the prescribed test pressure is reached, by which time no leakage or visible permanent deformation shall have occurred; and
- (b) until leakage or bursting occurs; the dished end, if any, shall yield first and the receptacle shall not leak or burst until a pressure 1.2 times the test pressure has been reached or passed.

➤ Proposal 5 : Introduction of Packing Instruction P204 for aerosols dispensers & small cartridges.

P204	PACKING INSTRUCTION	P204
This packing instruction applies to UN No. 1950 aerosols and UN No. 2037 receptacles, small, containing gas (gas cartridges)		
<p>(1) The special packing provisions of 4.1.6 shall be met when applicable.</p> <p>(2) Receptacles shall be so closed and leakproof as to prevent escape of the gases.</p> <p>(3) For UN No. 1950 aerosols and UN No. 2037 receptacles, small, containing gas (gas cartridges) :</p> <p style="padding-left: 20px;">(a) the internal pressure at 50 °C shall exceed neither two-thirds of the test pressure nor 1.32 MPa (13.2 bar).</p> <p style="padding-left: 20px;">(b) they shall be so filled that at 50 °C the liquid phase does not exceed 95 % of their capacity.</p> <p style="padding-left: 20px;">(c) they shall satisfy a tightness (leakproofness) test in a hot-water bath:</p> <ul style="list-style-type: none"> - The temperature of the bath and the duration of the test shall be such that the internal pressure of each receptacle reaches at least 90% of the internal pressure that would be reached at 55 °C; - However, if the contents are sensitive to heat or if the receptacles are made of a plastics material which softens at this temperature, the temperature of the bath shall be from 20 °C to 30 °C; in addition, one receptacle out of every 2000 shall be tested at the temperature prescribed in the foregoing indent; - No leakage or permanent deformation shall occur. The provision concerning permanent deformation is not applicable to receptacles which, being made of plastics material, soften. <p>(4) For UN No. 1950 aerosols, only non-pyrophoric and non-toxic gases may be used as propellants, as constituents of propellants, or as filler gases.</p> <p>(5) All compressed and liquefied gases, except the pyrophoric gases and very toxic gases (gases with an LC₅₀ lower than 200 ppm), shall be accepted as filling gases for UN No. 2037 gas cartridges.</p> <p>(6) Aerosols and gas cartridges shall be placed in wooden boxes or strong fibreboard or metal boxes; UN No. 1950 aerosols made of glass or synthetic material and liable to shatter shall be separated from one another by interposed sheets of fibreboard or of another suitable material.</p> <p>(7) A package shall not weigh more than 50 Kg if fibreboard boxes are used or more than 75Kg, if other packagings are used.</p> <p>(8) In the case of carriage by full load, metal articles may also be packed as follows: the articles shall be grouped together in units on trays and held in position with an appropriate plastics cover; these units shall be stacked and suitably secured on pallets.</p>		

➤ Proposal 6 :

To amend § 6.2.2.6.1. as follows :

(b) to add at the end of the sentence : “... *or the approval number*”.

To amend § 6.2.2.6.2. as follows :

(g) to add after “Kg” : “*with the exception of pressure receptacles of UN 1965, hydrocarbon gas mixture, liquefied, n.o.s., the tare weight*”.

(h) to insert in the 2nd sentence : “*This mark is not required for pressure receptacles of UN 1965, hydrocarbon gas mixture, liquefied, n.o.s.*”.

To amend § 6.2.2.6.3. as follows :

(m) to add : “*This mark is not required for pressure receptacles of UN 1965, hydrocarbon gas mixture, liquefied, n.o.s.*”.

To amend § 6.2.2.6.6. as follows :

To replace “... (year & month) ...” by “... year (2 digits) followed by the month (2 digits) separated by a slash (i.e. “/”)...”.

➤ Proposal 7 : 6.2.3. Requirements for non-UN certified pressure receptacles :

To add : “*For LPG refillable pressure receptacles, the minimum burst ratio shall be 2.25 and the burst pressure shall be not less than 50 bar*”.
