

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

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LISTING, CLASSIFICATION AND PACKING

Packing Instruction P200

Transmitted by Germany, the European Industrial Gases Association (EIGA) and
the Compressed Gas Association (CGA)

Background

1. As stated by the experts from Germany in the transmitted document ST/SG/AC.10/C.3/2008/16, subsection 4.1.4.1 Packing Instruction P200 paragraph (4) has special packing provision “k” for valves for toxic substances with an LC₅₀ less than or equal to 200 ml/m³ (ppm) and special packing provision “q” for valves for pyrophoric gases or flammable mixtures of gases containing more than 1 % of pyrophoric compounds. Such valves shall be fitted with gas-tight plugs or caps.
2. However, the requirements for gas-tightness of these plugs or caps are not specified nor quantified in Packing Instruction P 200 or elsewhere in the UN Model Regulations.
3. The intend of gas-tight plugs or caps is to provide a secondary closure to the cylinder valve to prevent the escape of toxic substances or pyrophoric gases.
4. In UN/SCETDG/33/INF.53 the European Industrial Gases Association has proposed an improvement on the German paper. There EIGA proposed to have the cap or plug conform to the same dimensions as the user connector for which the valve outlet is intended, and in that way it shall ensure that the same degree of integrity is assured for the cap or plug as when the valve is connected to a user’s process.
5. The maximum leakage rate for the testing of cylinder valves quantified in standards is a minimum general requirement for all valves. A much lower leakage rate is appropriate for toxic substances and pyrophoric gases.

6. The experts from Germany, EIGA and CGA agreed on future work to review the leakage rates of used valves for toxic substances and pyrophoric gases and recommend appropriate leakage rates for valves to be incorporated in regulations or standards.

7. The following proposal would clarify and strengthen the requirements for the sixteenth revised edition of the Orange Book. The connection between a gas cylinder valve outlet and the use connector is a well proven connection, and as such conformance of a plug or cap to the same overall requirements will ensure the same level of integrity in transport as in use.

Proposals

8. It is proposed to amend the proposal from the expert of Germany as follows for special packing provisions “k” and “q” in paragraph (4) of P200 as below. (Amended text is underlined):

“k Valve outlets shall be fitted with pressure retaining gas-tight caps or plugs having threads that match those of the valves outlets.”

Each cylinder within a bundle shall be fitted with an individual valve that shall be closed during transport. After filling, the manifold shall be evacuated, purged and plugged.

(remainder unchanged)”.

Because the plugs or caps are fitted to the valve outlet an amendment should be introduced in special packing provision “q” at the same time.

“q Valve outlets of pressure receptacles for pyrophoric gases or flammable mixtures of gases containing more than 1% of pyrophoric compounds shall be fitted with gas-tight plugs or caps. When these pressure receptacles are manifolded in a bundle, each of the pressure receptacles shall be fitted with an individual valve that shall be closed during transport, and the outlet of the manifold outlet valve shall be fitted with pressure retaining gas-tight caps or plugs having threads that match those of the valves outlets.”
