

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

16 May 2024

Sixty-fourth session

Geneva, 24 June-3 July 2024

Item 5 (c) of the provisional agenda

Transport of Gases:

Miscellaneous

Carriage of different gases within a single bundle of cylinders

Submitted by the expert from the United Kingdom

I. Introduction

1. Following a request from a specific sector of our industry, the expert from the United Kingdom would be grateful for an opinion from the Sub-Committee on whether more than one gas may be carried within a single bundle of cylinders.
2. In general terms, the *Model Regulations* seem to be written such that only one gas should be carried but, in some areas, they seem to suggest it might be possible for bundle to be constructed in such a way that different gases can be carried. Likewise, the mandatory standards referenced in 6.2.2.1.6 and 6.2.2.4 would seem to indicate it might be possible for a single bundle of cylinders to be constructed such that more than one gas can be carried.

II. Consideration

3. The following text is included in the definition of a bundle of cylinders in 1.2.1 of the *Model Regulations* "...a pressure receptacle comprising an assembly of cylinders or cylinder shells that are fastened together, and which are interconnected by a manifold and carried as a unit...". As this seems to require all cylinders or cylinder shells to be interconnected by a single manifold, it would seem the intention is for a bundle to only carry one gas.
4. However, the following text is included within 6.2.1.5.4: "Additionally, all manifolds of bundle of cylinders shall undergo a hydraulic pressure test and all the completed bundles of cylinders shall undergo a leakproofness test". As this section indicates there may be more than one manifold, this would seem to indicate it might be possible for a bundle to be constructed in such a way that enables more than one gas to be carried.
5. Furthermore, the following text is included within Note 4 of 6.2.1.6.1 "For bundles of cylinders the hydraulic test specified in 6.2.1.6.1 (d) shall be carried out on the cylinder shells and on the manifolds". This would once again seem to indicate there could be more than one manifold which would seem to allow more than one gas to be carried.
6. The intention of the mandatory referenced standard for the design, manufacture, testing and inspection of cylinder bundles (EN ISO 10961:2019 as referenced in 6.2.2.1.6) would seem to be for a single gas to be carried in a bundle. However, in clause 4.7 the standard allows for more than one main connection and main valve in any bundle, and this could be seen to allow bundles to be constructed for more than one gas to be carried:
"4.7 Main Connection(s) and main valve(s) – The main connection(s) and main valve(s) shall be compatible with the gas (see 4.2) and the pressure for which the bundle is intended..."
7. The mandatory referenced standard for the periodic inspection and testing of cylinder bundles (ISO 20475:2018 as referenced in 6.2.2.4) would also seem to imply that only one gas should be carried in a bundle. However, in certain areas we believe it could be interpreted that more than one gas could be carried. For example, the definition of a

manifold in the standard also allows for more than one main valve or main connection to the bundle:

“3.11 manifold piping system for connecting pressure receptacle(s) valves or cylinder fittings (3.9) to the main valve(s) (3.4) or the main connection(s) (3.12)”

III. Discussion

8. The expert from the United Kingdom would appreciate the opinion of the Sub-Committee on whether a bundle of cylinders is permitted to carry more than one gas at the same time. If the consensus is that an amendment to the *Model Regulations* is necessary to clarify the requirements, the United Kingdom is willing to propose such an amendment for a future session.

IV. Implications

9. Providing clarity on whether bundles of cylinders is permitted to carry more than one gas at the same time is considered to support Sustainable Development Goal 9 “Industry, Innovation and Infrastructure” and could contribute to the UN Sustainable Development Goals 12 “Responsible Consumption and Production, Chemicals and Waste” and 13 “Climate Action, reducing greenhouse gas emissions”.
