

## Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

25 November 2021

### Sub-Committee of Experts on the Transport of Dangerous Goods

#### Fifty-ninth session

Geneva, 29 November-8 December 2021

Item 5 (b) of the provisional agenda

#### Transport of gases: limited quantities for division 2.2

## Increase of the limited quantity volume for Division 2.2 compressed gases

### Transmitted by the Council on Safe Transportation of Hazardous Articles (COSTHA)

#### Introduction

1. This informal document is submitted to continue the consideration of a proposal in ST/SG/AC.10/C.3/2021/26 as discussed in the fifty-eighth session of the Sub-Committee. As previously stated, the Model Regulations authorize the transport of Division 2.2 gases without subsidiary hazards to be transported in quantities not exceeding 120 ml per inner packaging and 30 kg per outer packaging. The rationale behind limited quantity provisions is that selected dangerous goods packed in small quantities and in good, robust packaging pose a lesser risk in transport than do the same goods packed in larger volumes, and on this basis some relief from specific requirements such as hazard labels is acceptable. During the previous biennium and in the fifty-eighth session, COSTHA and EIGA submitted proposals to provide for relief for specific Division 2.2 gases consistent with special provision 653 of the ADR.

2. During the previous discussions several experts indicated that they were supportive of addressing the provisions for limited quantities as they relate to Division 2.2 gases. Much of the remaining concern from the participants was related to ensuring that any limited quantity exceptions included pressure limits, as with compressed gases, potential energy was the main concern.

3. Non-toxic, non-flammable compressed gases, such as Carbon Dioxide (UN 1013), Argon (UN 1006) and other compressed gases with no subsidiary risks are required to be packaged in accordance with packing instruction P200, which is an established packaging regime with a proven transport history.

4. Shipments of compressed gases according to ADR's special provision 653 has provided a history of safe shipments of these 2.2 compressed gases, with volumes greater than the existing limited quantity limitations (120 ml). The increase in the limited quantity volume for these commodities is supported by the inclusion of SP 653 in the ADR, and the issuance of similar authorizations by the US DOT (DOT SP 20796, DOT SP 20936, etc.) and Transport Canada (TU 0715) through their regulatory approval processes. Currently, SP 653 requires a mark that consists of a 100 mm by 100 mm diamond mark, with the appropriate UN number inside. This marking requirement is unique to this special provision. Although this proposal would be in line with ADR SP 653, by requiring the LQ marking, this proposal would provide greater safety conditions than the existing, time-proven ADR provision.

4. The limited quantity limits for aerosols and gas receptacles other than those that contain toxic gases are 1000 ml/30 kg in accordance with special provision 277. Consistent with a previous comment from Canada, aerosols and gas receptacles containing a Division

2.1, 2.1(8), and 2.2(8) all have a limited quantity limit of 1000 ml. Cylinders do contain a higher pressure, but cylinders are significantly more robust than aerosol cans. We are aware of one company shipping millions of CO<sub>2</sub> cylinders across Europe under special provision 653 and under similar authorization through approvals in Canada and the USA.

5. COSTHA believes that the addition of a special provision for these gases, that would allow the LQ exception for cylinders up to 152 bar litre test pressure as allowed in ADR special provision 653, would be appropriate. In addition, it is not proposed to amend the limited quantity values for Division 2.2 articles because exceptions for these are addressed through specific special provisions.

6. It is COSTHA's intention to propose the following special provision (XXX) to be authorized for the gases listed in the appendix of this paper:

In the Dangerous Goods List, increase the limited quantity limit (column 7A) for Division 2.2 compressed gases, with no subsidiary hazards, from 120 ml to 1000 ml.

"XXX The carriage of this gas in cylinders having a test pressure capacity product of maximum 152 bar may be transported as LQ in accordance with Chapter 3.4, if the following conditions are met:

- The provisions for construction and testing of cylinders are observed;
- The cylinders are contained in outer packagings, which at least meet the requirements of Part 4 for combination packagings. The general provisions of packing of 4.1.1.1, 4.1.1.2 and 4.1.1.5 to 4.1.1.7 shall be observed;
- The cylinders are not packed together with other dangerous goods;
- The total gross mass of a package does not exceed 30 kg; and
- The gas within the cylinder is a Division 2.2 with no subsidiary risks. Liquified or refrigerated gases are not authorized under this special provision."

COSTHA is requesting feedback from the participants to strengthen our proposal for the sixtieth session of the Sub-Committee.

## Appendix

### List of Division 2.2, compressed gases under consideration for 1000 ml Limited Quantity limit.

1002 AIR, COMPRESSED  
1006 ARGON, COMPRESSED  
1013 CARBON DIOXIDE  
1056 KRYPTON, COMPRESSED  
1065 NEON, COMPRESSED  
1066 NITROGEN, COMPRESSED  
1080 SULPHUR HEXAFLUORIDE  
1952 ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with not more than 9% ethylene oxide  
1956 COMPRESSED GAS, N.O.S.  
1968 INSECTICIDE GAS, N.O.S.  
1973 CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUORO-ETHANE MIXTURE with fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502)  
2036 XENON  
2455 METHYL NITRITE  
3070 ETHYLENE OXIDE AND DICHLORODIFLUORO-METHANE MIXTURE with not more than 12.5% ethylene oxide  
3297 ETHYLENE OXIDE AND CHLOROTETRAFLUORO-ETHANE MIXTURE with not more than 8.8% ethylene oxide  
3298 ETHYLENE OXIDE AND PENTAFLUOROETHANE MIXTURE with not more than 7.9% ethylene oxide  
3299 ETHYLENE OXIDE AND TETRAFLUOROETHANE MIXTURE with not more than 5.6% ethylene oxide

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