

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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Item 5 (b) of the provisional agenda

Transport of gases: Miscellaneous

Comments on ST/SG/AC.10/C.3/2017/1 - Adsorbed Gases – exemption for gases of Class 2.2 (not toxic, not flammable)

Transmitted by the Compressed Gas Association (CGA)

Introduction

1. In ST/SG/AC.10/C.3/2017/1, Germany proposes to amend the exemption in 2.2.2.3 of the eighteenth edition of the United Nations Model Regulations that would result in adsorbed gases being excluded from the provisions of the exemption.
2. CGA cannot support the proposal in ST/SG/AC.10/C.3/2017/1 as written and would like to provide the following comments and proposal for consideration.

Rationale for position

3. The expert from Germany justifies the proposal by noting that liquefied and refrigerated liquefied gases are currently excluded from the exemption indicated in 2.2.2.3 as those types of 2.2 gases when heated or exposed to a fire may result in a sharp rise in pressure causing failure of the pressure receptacle.
4. The expert further explains that relatively large amounts of Division 2.2 adsorbed gases can be adsorbed and therefore by analogy should be treated similarly to liquefied and refrigerated liquefied gases. CGA disagrees; several Division 2.2 adsorbed gases do not present the level of danger cited in the justification portion of the proposed change to 2.2.2.3.
5. Certain gases, specifically argon, nitrogen, helium and air, due to their physical properties, do not appreciably adsorb on common adsorbents. When these gases are adsorbed, the comparative quantity of gas contained in the receptacle is much less than in the refrigerated liquefied state. For example, a 1 liter receptacle of refrigerated liquefied nitrogen contains approximately 800 grams of gas, whereas the same volume receptacle of nitrogen in the adsorbed state contains less than 20 grams of nitrogen. In the event the adsorbed gas receptacle is heated or exposed to a fire, the pressure rise and rate of rise is significantly less than in the refrigerated liquefied state.

New proposal

6. CGA recommends the following modification to the proposed language in ST/SG/AC.10/C.3/2017/1 to satisfy the concerns of all interested parties, (modifications shown in underscored or strikethrough text):

“Gases of Division 2.2 are not subject to these Regulations if they are transported at a pressure of less than 200 kPa at 20 °C and are not liquefied, refrigerated liquefied or adsorbed gases except adsorbed argon, nitrogen, helium or air.”
