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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 (h) of the provisional agenda
Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: portable tanks

Transport of lithium (UN 1415) in portable tanks

Transmitted by the expert from the United States of America[1]

Introduction

1. At present, the Dangerous Goods List entry for lithium (UN 1415) does not indicate a portable tank instruction in Column 10. Consequently, lithium is not permitted to be transported in UN portable tanks. Nevertheless, IBCs in accordance with IBC04 (any type of metal IBC) are authorized. Further, according to the Sub-Committee's Guiding Principles for the Model Regulations as they relate to assignment of portable tank instructions, solid Division 4.3 substances of Packing Group I, such as lithium, are in principle considered suitable for transport in portable tanks conforming to portable tank instruction "T9". For example, dangerous goods of Division 4.3, Packing Group I properly described as UN 1428 SODIUM and UN 2257 POTASSIUM are currently authorized for transport in portable tanks conforming to portable tank instruction T9, subject further to the requirements of portable tank special provisions TP7 and TP33. Therefore, based on these precedents, transport of lithium in a UN portable tank would appear to be deemed not only safe, but consistent with the level of safety contemplated by the Model Regulations.

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

Discussion

2. In the United States, lithium has been transported for many years in portable tanks made to a Department of Transportation specification. Typically the lithium, which exhibits the relatively low melting point of approximately 179 degrees C, is filled into the tank in a liquid state and the contents allowed to cool and completely solidify before the tank is offered for transport. The design temperature range of the portable tanks employed is appropriate to this practice as required by existing provisions within the Model Regulations. However, since at present no portable tank instruction is indicated in Column 10 of the Dangerous Goods List entry for UN 1415 in the Model Regulations or the modal transport regulations based on the Model Regulations, the possibility for international transport of lithium in portable tanks is precluded. As the global demand for lithium, which is now employed in a wide variety of applications, increases, and owing to the potential economies of scale associated with transporting this material in portable tanks, the need has arisen for the international transport of lithium in portable tanks.

3. In summary, taking account of the current provisions in the Model Regulations allowing the use of metal IBCs for the transport of lithium, the Guiding Principles governing assignment of portable tank instructions and tank special provisions to Division 4.3 solids, and the excellent safety record accrued in transporting lithium in portable tanks in accordance with the United States' domestic regulations, assignment of a portable tank instruction to the Dangerous Goods List entry for lithium (UN1415) is considered not only appropriate, but consistent with the level of safety contemplated by the Model Regulations and the international modal regulations based on those UN provisions.

Proposal

4. Consistent with the Guiding Principles for assignment of portable tank instructions and tank special provisions, and by analogy to the portable tank instruction and tank special provisions assigned to UN 1428 and UN 2257, Packing Group I, it is proposed to insert "T9" in Column 10 and "TP7 and "TP33" in Column 11 of the Dangerous Goods List entry for Lithium (UN1415).