UN/SCETDG/42/INF.26
UN/SCEGHS/24/INF.13

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

20 November 2012

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-second session

Geneva, 3– 11 December 2012

Item 9 of the provisional agenda

Programme of work for the biennium 2013–2014

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

Twenty-fourth session

Geneva, 12 – 14 December 2012

Item 7 of the provisional agenda

Programme of work for the biennium 2013–2014

Inclusion in the program of work 2013-2014: evaluation of classification criteria and flammability categories for certain refrigerants

Transmitted by the expert of Belgium

I. Introduction

1. Under the current classification criteria in GHS and in the Model Regulations, a gas is flammable when it has a flammable range with air at 20°C and a standard atmospheric pressure of 101.3 kPa. Additional criteria then subdivide these gases, e.g. as flammable or extremely flammable.

2. For certain refrigerants, such as ammonia (R717) or difluoromethane (R32) which have similar properties, these criteria would result in an extremely flammable classification as reflected in the Safety Data Sheets. However, ammonia (Cat.2) is exempted from this category as a special case for regulatory purposes (e.g. TDG), whereas difluoromethane (Cat.1) remains categorized as extremely flammable. This means that there are differences in assessing the lower flammability of similar substances, for which the reasons are unclear.

3. Additionally, the International Organization for Standardization (ISO) and other technical committees have been reviewing this lower flammability for some time. The revision of ISO 817 (refrigerants – number designation and safety classification) for instance led the TC86/SC8/WG5 to consider the criteria of burning velocity (BV) for flammable refrigerants and its impact on the flammability hazard. There seemed to be a clear cut-off value of 10 cm/s below which substances are difficult to ignite, have high minimum ignition energies and pose no significant pressure increase in a confined space. Certain technical bodies (e.g. the Amercian Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE 34)) used this to distinguish between low and very low flammability, leading to believe that this hazard is regarded and treated differently in standardization and regulatory contexts.

II. Proposal

4. It is proposed to include a study and evaluation concerning the flammability categories currently assigned to certain refrigerants in the program of work of the next biennium for both the TDG and GHS subcommittees.