United Nations ST/SG/AC.10/C.3/2012/8

Secretariat

Distr.: General
28 March 2012

Original: English

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

Forty-first session
Geneva, 25 June – 4 July 2012
Item 3 (a) of the provisional agenda
Listing, classification and packing: proposals of amendments to the list of dangerous goods of Chapter 3.2

Proposal for a new UN number and special provision for a new type of Heat Transfer Device, used as primary container for gases labelled as Dangerous Goods

Transmitted by the expert from Spain[1]

Background

1. At the fortieth session the expert from Spain presented informal document INF.37 giving reasoning and proposing to introduce a new United Nations number for Heat Pipes used as the primary container of gases labelled as Dangerous Goods for transportation purposes. Following the discussion and comments given, the expert from Spain asked delegations to send written comments and offered to submit a revised proposal for a future meeting.

Introduction

2. Current UN3363 "Dangerous Goods in Machinery/Apparatus" may only contain dangerous goods which are authorized to be transported in accordance with the provisions of Chapter 3.4 (limited quantities) (see special provision 301 in Chapter 3.3). This restricts the possibility of gases in machinery/apparatus to those of Division 2.2 without subsidiary risk and to UN Nos 1950 and 2037.

[1] In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

3. Basically, a heat pipe may be compared to other refrigeration devices under this UN3363 but, either by the nature of the working fluid or by the amount of this fluid inside the device, they may not be covered by the industrial regulations for pressure vessels. Because of this, heat pipes must be designed, manufactured and tested exceeding those “not applicable” industrial regulations in order to warranty the safety of the devices for any kind of working fluid and under any kind of environment, so a safe working life is granted when it becomes a consumer product at the end of the transport chain, but to avoid any hazardous scenario during its transport, storage and installation in a higher assembly as well.

4. This new UN number might be used for the transport of heat pipes containing certain divisions 2.1, 2.2 and 2.3 compressed gases. The gas is not transported as a raw material by its own, but as a working fluid primary contained inside the heat pipe.

5. Packaging and transport by any means must be in accordance with the UN Model Regulations as the basis for the Technical Instructions for the Safe Transport of Dangerous Goods by air.

Proposal

6. Add a new entry UN3XXX to the Dangerous Goods List, as follows:

UN No.	Name and description	Class or Division	Subsidiary Risk	UN Packaging Group	Special provisions	Limited and excepted quantities		Packaging and IBC's		Portable tanks and bulk containers	
								Packaging Instructions	Special Packaging Provisions	Instructions	Special Provisions
1	2	3	4	5	6	7a	7b	8	9	10	11
3XXX	Dangerous goods in heat pipes	9		II	3XX			P907	PPXX		

7. Add a new Special Provision 3XX in Chapter 3.3 as follows:

“3XX UN3XXX may include any class 2 gases, subject to the following conditions:

(a) Gas quantity: 1.0 net kilos per heat pipe and a total net 15.0 kilos per shipment;

(b) Manufacturing: the heat pipe shall be manufactured in such a way as to prevent the pressure receptacle from leakages of the working fluid under any circumstance;

(c) Testing: the heat pipe shall be leak proof tested during the manufacturing process and after the final assembly;

(d) Packaging: even when the heat pipe is acting as the primary container, it shall be packed in outer packagings constructed of suitable materials and adequate strength and design in relation to the packaging capacity and its intended use.

The provisions of Chapter 5.2 do not apply to the transport of UN 3XXX.

8. Add a new Special Packaging Provision PPXX at the end of the Packing provision P907 as follows:

"PPXX For Division 2.3 gases, the transport is only allowed when the cylinder or receptacle is acting as authorized primary container and marked as UN3XXX Dangerous goods in heat pipe".

Justification

9. "UN3XXX Dangerous goods in heat pipes" clearly defines the difference between a heat pipe, as heat transfer device, and any other type of refrigeration device. In addition, it avoids the misunderstanding of considering the working fluid as raw material transported as it is, but only as a part of a higher assembly.

10. It can be argued in general terms that SP 301 & 363 may be partially adapted, but the creation of new Special Provision specifically applied to heat pipes should be discussed.

11. The transport of heat pipes is currently limited to the requirements of regular refrigeration devices under UN3363, i.e., when the primary container does not avoid the subsidiary risk of the gas used as working fluid.

12. Creating a new UN3XXX number is appropriate and would be best suitable to ensure the safe transport of such articles without modifying the current UN3363.

13. The specific requirements for the production of the heat pipe to fulfil its own working purpose would agree to set it as a safe primary container as well, but by extension it shall avoid the risk of the working fluid contained inside as long as the Special Provision issued for the new UN3XXX is observed.