



**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****Thirty-eighth session**

Geneva, 29 November– 7 December 2010

Item 4 of the provisional agenda

Listing, classification and packing**Proposal for a new UN number and special provision for a
new type of confetti-shooters****Transmitted by the expert from Germany¹****Background**

1. A new type of confetti-shooters has been developed containing a receptacle with pressurized gas instead of pyrotechnics. The shooter consist in principle of a jacket of cardboard, the pressurized receptacle filled with compressed air or nitrogen, a lock mechanism made of plastics, a plug of rubber and a metal cap for closing the receptacle and different types of confetti (see Figures 1, 2, 3, 4 and 5).
2. By turning a ring or the bottom part of the shooter a mechanism is unlocked, a clack opened and the pressurized gas is discharged so that the confetti is shot away for a few metres.
3. The Federal Institute of Materials Research and Testing (BAM), Germany, has analysed two types of shooters (50 cm and 80 cm length) with a small metal pressure receptacle pressurized at 2,3 MPa (23 bar) with inner volumes of 190 ccm and 330 ccm and has carried out several test as described in the following clauses. The test reports will be provided in an informal document in order to inform about the details of the test.
4. The burst pressure of the receptacles was determined and amounts to about 140 bars for both volumes.

¹ In accordance with the programme of work of the Sub-Committee for 2009–2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (b) and ST/SG/AC.10/36, para. 14).

5. In a fire test (similar to test UN 6 (b)) with 25 shooters it was demonstrated that the confetti-shooter relieves its pressure in a smooth way by melting the plastic lock mechanism. There were no fragments of the pressure receptacles and the articles as such or their pressure receptacles do not rocket more than 5 meters.
6. In a single package test (similar to test UN 6 (d)) it was shown that - after initiating one shooter – there was no domino effect inside the package but a disruption of the package in front of the initiated shooter. After reinforcing the front side of the box with additional pieces of cardboard the penetration was prevented.
7. This type of shooters does not contain any amount of explosives, class 1, and therefore cannot be assigned to class 1. On the other hand the shooters do not meet the criteria of the existing UN numbers as 1002 “Air compressed”, 1066 “Nitrogen, compressed” or 3164 “Articles, pressurized pneumatic” and do not meet the requirements for gas cartridges or small pressure receptacles either. As no flammable gas is used, they also cannot be assigned to UN 3150. So currently, there is no suitable UN entry to assign such shooters correctly.
8. In order to consider these types of shooters appropriately it is proposed to add a new UN number, systematically similar to the way used for UN 3164.
9. Furthermore it is proposed to assign a new Special Provision which is very similar to SP 283. This special provision would lay down suitable basic requirements to ensure safe construction and handling of such shooters and provide for an exemption in limited amounts and packaged form from the Dangerous Goods Regulations.
10. Such an provisions and the exemption are considered to be justified because the shooters as described above are of no high risk and can be considered less dangerous than similar pyrotechnic articles or pressurised articles assigned to UN 3164 meeting SP 283 taking into account their lower volume and pressure.

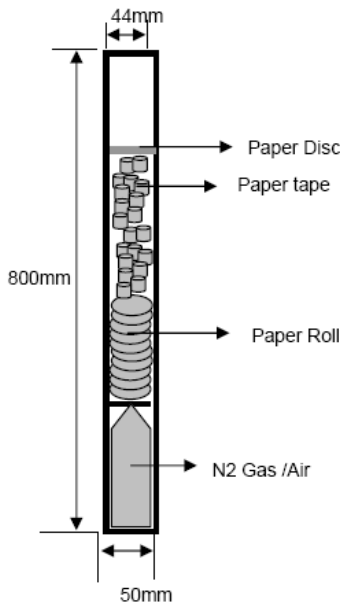


Fig. 1: Scheme of confetti-shooter

Fig. 2: Confetti-Shooters of 50 cm and 80 cm length



Fig. 3: Pressurized receptacle made of steel, contained in 80 cm shooters



Fig 4: Rubber plug and metal clack to seal the receptacle



Fig. 5: Lock mechanism for opening by turning a plastic ring

Proposal

Create a new entry (UN 3XXX) in Class 2:

- (a) Add a new entry to the Dangerous Goods List, as follows:

UN No.	Name and description	Class or division	Subsidiary risk	UN Packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instructions	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
3XXX	Articles containing pressurized receptacles	2.2			3XX	0	E0	P003			

(b) Add a new Special Provision 3XX in Chapter 3.3:

“3XX (1) Articles, containing small pressure receptacles, intended to function as confetti-shooters, shall meet the following requirements:

(a) The pressure receptacle shall be filled with compressed air or nitrogen only;

(b) The gas space capacity of the pressure receptacle shall not exceed 0.5 litres and the charge pressure shall not exceed 25 bar;

(c) The minimum burst pressure of the pressure receptacle shall be at least four times the charge pressure of the gas at 20 °C;

(d) Each article shall be manufactured in such a way that unintentional firing is avoided under normal conditions of handling, packing, transport and use. This may be fulfilled by a locking device in addition to the usual activator (e.g. slewable ring or bottom part);

(e) Each article shall be manufactured in such a way to prevent that the pressure receptacle can rocket backward through the bottom of the article and that the metal clack or fragments of the pressure receptacle can catapult during activation of the article;

(f) Each pressurised receptacle shall be manufactured from material which will not fragment upon rupture;

(g) The design type of the article shall be subjected to a fire test (similar to UN test 6 (b)). It shall be demonstrated that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, in such a way that the article will not fragment and that the article or fragments do not rocket more than 10 metres; and

(h) The design type of the article shall be subjected to a single package test (similar to UN test 6 (d)). There shall be no hazardous effects outside the package from accidental activation of one article or initiation of the contents. Evidence of hazardous effects outside the package includes the disruption of the package, metal fragments or receptacles which pass through the packaging.

(2) The manufacturer shall produce technical documentation of the design type, manufacture as well as the tests and their results. He shall apply procedures to ensure that shooters produced in series are made of good quality, conform to the design type and are able to meet the requirements in (1). He shall provide such information to the Competent Authority on request.

(3) Articles conforming to the requirements in (1) and (2) are not subject to these Regulations if packed according to P 003 in packagings not exceeding 30 kg gross mass.”.