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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

(Twenty-first session, 1-10 July 2002,
agenda item 3(a))

Comments on the Report of the Working Group on the Classification of Fireworks, 16-18 October 2001 (The Hague, Netherlands)

Transmitted by the experts from Germany

The expert from Germany have reviewed the report of the UN working group on the classification of fireworks, ST/SG/AC.10/C.3/2002/1 and offer the following comments for consideration by the Sub-Committee at the July 1 - 10, 2002 meeting. An amended version of the proposal of the working group can be found in the Annex to this paper.

General comments :

1. The default system for the classification of fireworks should only cover Divisions 1.1G, 1.2 G and 1.3G in a very conservative manner. Subdivisions 1.4G and 1.4S represents a relatively low hazard (no explosion, no excessive heat production). For these subdivisions it is unacceptable to do an assignment by default with the risk of having a real hazard which is higher than found through the default list. Commercial interests may also lead to incorrect interpretation of this list and to the misuse of the default system.
2. The default system has been developed to provide assistance for the classification of professional fireworks since its incorrect classification was one of the reasons for the accident in the Netherlands. Therefore it should be made clear that the default table is only applicable for professional fireworks.
3. Using different packagings can totally change the classification of fireworks. Therefore it is be clear that the default table is valid only for articles packed according to P 135/fibre board boxes (4G) up to a weight of 35 kg per packaging.
4. For inspection purposes it is necessary that the classification according to the list together with the agreement of the competent authority shall be a part of the transport documentation.
5. The agreement of the competent authority is also needed when fireworks are classified on the basis of test data.

Specific comments on the list:

1. Articles containing flash or report compositions other than black powder are suspect to mass explosions and therefore should be considered 1.1G unless tests have proved a different classification.

2. The presented default list does not take into account some specific details. E. g. the difference between spherical shells with a black powder charge (as propellant, black powder is considered 1.1D) fixed to the shells or without propelling charge is not taken into account.

Preloaded shells with a calibre of more than 50 mm have to be classified as 1.2G like the roman candles with a calibre of more than 50 mm because they represent the same hazard.

Numerous test in Germany have shown that shells with a propellant charge with a calibre less than 200 mm containing no report composition can be classified as 1.3G.

Cylindrical shells can not be covered by this list since the mass of explosives within a cylindrical shell cannot be correlated to their calibre (due to their variable length).

Annex

2.1.3.5 Assignment of fireworks to Hazard Divisions

2.1.3.5.1 Fireworks shall normally be assigned to hazard divisions 1.1, 1.2, 1.3, and 1.4 on the basis of test data derived from Test Series 6. However, since the range of such articles is very extensive and the availability of test facilities may be limited, assignment to hazard divisions may also be made in accordance with the procedure in 2.1.3.5.2. **The classification shall be made with the agreement of the competent authority.**

2.1.3.5.2 Assignment of fireworks to UN numbers 0333, 0334 **or** 0335, ~~0336 or 0337~~ may be made on the basis of analogy, without the need for Test Series 6 testing, in accordance with the default table in 2.1.3.5.7. Such assignment shall be made with the agreement of the competent authority. **It shall be a part of the transport documentation.**

2.1.3.5.3 Where fireworks of more than one Hazard Division are packaged in the same package they shall be classified on the basis of the highest Hazard Division unless test data derived from Test Series 6 indicate otherwise.

2.1.3.5.4 The addition of new types of fireworks to column 1 of the default list in 2.1.3.5.7. shall only be made on the basis of full test data submitted to the UN Sub-Committee on the Transport of Dangerous Goods for consideration.

2.1.3.5.5 Test data derived by competent authorities which validate, or contradict the assignment of firework types by calibre / weight in column 4 of the table in 2.1.3.5.7 to hazard divisions in column 5 shall be submitted to the UN Sub-Committee on the Transport of Dangerous Goods for information.

2.1.3.5.6 The Default table in 2.1.3.5.7 is only applicable for professional fireworks (fireworks which present a high hazard and which are intended for use by persons with specialist knowledge). The classification shown in the Default table in 2.1.3.5.6 applies only for articles packed according to P 135/fibre board boxes (4G) up to a weight of 35 kg per packaging.

2.1.3.5.7 Default table

Type	Includes: / Synonym:	Definition	Calibre /Weight	HD*
shell, spherical	display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell; report shell: maroon, salute, sound shell, thunderclap	device with propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic composition and designed to be projected from a mortar	shells containing report composition	1.1G
			colour shell: ? 200 mm	1.1G
			colour shell: < 200 mm	1.3G
	aerial shell kit, preloaded mortar, shell in mortar	assembly comprising a shell inside a mortar from which the shell is designed to be projected	shells containing report composition	1.1G
			colour shell: ? 50 mm	1.2G
			colour shell: < 50 mm	1.3G
shell, cylindrical	can not be covered by this list due to a	fundamentally different design		
			all	1.1G
combination/ batteries	barrage, bombardos, cakes, finale box, flowerbed, hybrid, multiple tubes	assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	with report	1.1G
			? 50 mm, containing no report composition	1.2G
			< 50 mm without report	1.3G
Roman candles	exhibition candle, candle, bombettes	tube containing alternate propellant charge(s), pyrotechnic unit(s) and transmitting fuse(s)	containing report composition	1.1G
			? 50 mm, containing no report composition	1.2G
			< 50 mm containing no report composition	1.3G
rocket	avalanche rocket, signal rocket, whistling rocket, bottle rocket, sky rocket, missile	tube containing pyrotechnic composition and/or pyrotechnic units, equipped with	containing report composition	1.1G

Type	Includes: / Synonym:	Definition	Calibre /Weight	HD*
	type rocket, table rocket	stick(s) or other means for stabilisation of flight, and designed to be propelled into the air	more than 75 g of pyrotechnic composition	1.2G
			Other	1.3G
mine	pot-a-feu	tube containing propellant charge and pyrotechnic units and designed to be placed on the ground or to be fixed in the ground	containing report composition	1.1G
			more than 50 g of pyrotechnic composition	1.2G
			Other	1.3G
	bag mine	bag containing propellant charge and pyrotechnic units and designed to be placed in a mortar	containing report composition	1.1G
			Other	1.3G
fountain	volcanos, gerbs, showers, falls, rains, lances, Bengal fire, flame projectors, flitter sparkle, cylindrical fountains, cone fountains, illuminating torch, tourbillions, strobes, whistle	non-metallic case containing sparks- and flame producing pyrotechnic composition	containing report composition	1.1G
			Other	1.3G
sparklers	non-handheld sparklers, wire sparklers, dipped sticks	rigid wire or thin stick partially coated (along one end) with slow burning pyrotechnic composition. with or without an ignition tip		1.3G
spinners	aerial spinners, helicopters, ground spinners	non-metallic tube or tubes containing gas- or spark-producing pyrotechnic composition, with or without noise producing composition, with or without aerofoils attached	containing report composition	1.1G
			other	1.3G
wheels	Catherine wheels, Saxon	assembly including a non-metallic tube or tubes containing pyrotechnic composition and provided with a means of attaching it to a support so that it can rotate	containing report composition	1.1G
			other	1.3G
aerial wheels	flying Saxon, UFO's, rising crown	tubes containing propellant charges and sparks- flame- and/ or noise producing pyrotechnic compositions, the tubes being fixed to a supporting ring	containing report composition	1.1G
			other	1.3G