



**Secretariat**

Distr.  
GENERAL

ST/SG/AC.10/C.3/2000/12  
14 April 2000

ORIGINAL : ENGLISH

---

**COMMITTEE OF EXPERTS ON THE TRANSPORT  
OF DANGEROUS GOODS**

**Sub-Committee of Experts on the  
Transport of Dangerous Goods**  
(Eighteenth session, 3-14 July 2000,  
agenda item 5 (a), (d))

**MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS  
ON THE TRANSPORT OF DANGEROUS GOODS**

**Listing, classification and packaging**

**Air bag inflators, air bag modules and seat-belt pretensioners**

**Transmitted by the experts from Germany, Norway, Sweden and the United Kingdom**

**1. BACKGROUND**

Under the present Model Regulations, air bag inflators, air bag modules and seat-belt pretensioners are classified according to their hazardous properties to classes 1, 2 or 9 respectively. These classifications have evolved over time based on the actual articles in use. The development of these articles is an ongoing process, and new substances and combinations of substances reflecting hazards of different classes are coming into use. Recent developments include various combinations of pyrotechnic compositions, compressed gases – inert, flammable or oxidising - as well as flammable liquids, as can be seen in Appendix A.

Already various competent authorities are interpreting current classification provisions in differing ways, creating difficulties for industry.

GE.00-

These developments may lead to a situation where there will be a proliferation of entries in the dangerous goods list for these kinds of articles to address the various dangerous goods used in them. Given this situation the experts preparing this document are of the opinion that a new approach to the classification of these articles is needed.

## **2. GUIDING PRINCIPLES FOR CLASSIFICATION OF AIRBAG INFLATORS, AIRBAG MODULES AND SEAT-BELT PRETENTIONERS**

The guiding principles for this approach is:

- **Based on hazards in transport**  
It is important that the classification system in the Model Regulations is based on the actual hazards in transport, taking into account the amount of dangerous goods that are contained in the articles. Furthermore, it is important that the classification is related to the actual needs of the transport legislation, and that problems related to manufacture, storage, handling and dismantling is addressed within the relevant legislation governing such activities. Thought should nevertheless be given to the possibility of also applying the classification system of the Model Regulations for these other purposes.
- **Principles of classification**  
As with the life saving appliances assigned to Class 9, these articles do not fit easily into the existing classification scheme. Analogy may be drawn with the entries already in use for the life saving appliances. They too include dangerous goods of different classes and divisions, and often in much larger quantities than those used in air bag inflators, air bag modules and seat-belt pretensioners.
- **Future technical developments**  
New substances and combinations of substances are being used with varying designs of articles as activators. The future classification system for these articles must be such that it will not be necessary to introduce a new UN-number every time the industry develops a new design.
- **Avoiding unnecessary testing**  
With the number of articles manufactured, as well as the number of variations of the same design, it is important that the classification system in accordance with the new approach to the Global Harmonisation of classification of chemicals does not require unnecessary testing and re-testing when very similar articles are transported world wide.
- **Simplicity**  
The classification of these articles must be on the basis that they can be readily understood and applied by an industry whose main activity is not to transport dangerous goods. Clear cut-off points should be established without complex testing requirements.

### 3. JUSTIFICATION

In developing these proposals and applying the guiding principles it was felt that air bag inflators, air bag modules and seat-belt pretensioners could be classified into just the classes 1 and 9.

A need for a cut-off point between entries for UN 3268 and UN 0503 was identified. Certain Competent Authorities experience suggests that 2 grams of explosive substance is the appropriate limit. The proposal also includes a default mechanism for assigning these articles that meet the criteria of Division 1.4S to the Class 9 entry

### 4. PROPOSAL

#### 4.1 The present entry for UN 3268 in Table A of Chapter 3 shall be amended to read:

UN No.	Name and description	Class or Division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBC's		Portable tanks	
							Packing instruction	Special provision	Portable tank instruction	Portable tank special provision
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
0503	AIR BAG INFLATORS, PYROTECHNIC or AIR BAG MODULES, PYROTECHNIC or SEAT-BELT PRETENSIONERS, PYROTECHNIC	1.4G			235 289	NONE	P135			
3268	AIR BAG INFLATORS, containing dangerous goods or AIR BAG MODULES, containing dangerous goods or SEAT-BELT PRETENSIONERS, containing dangerous goods	9		III	280 289	NONE	P902 LP902			

#### 4.2 Delete the entry for UN 3353

#### 4.3 Amend special provision 235 as follows:

This entry applies to articles containing 2 grams, or more, of explosive substances.

#### 4.4 Amend special provision 280 as follows:

This entry applies to articles containing dangerous goods with none or with less than 2 grams of pyrotechnic material, which are used as life saving vehicle air bag inflators or air bag modules or seat-belt pretensioners. For units with 2 grams pyrotechnic material or more, initiated explosive effects shall be contained within the article or the pressure vessel such that the article may be excluded from Class 1 in accordance with 2.1.1.1 (b), in conjunction with 16.6.1.4.7(a)(ii) of the *Manual of Tests and Criteria*, Part I. In addition, articles shall be designed or packaged for transport so that when engulfed in a fire there will be no fragmentation of any pressure vessel or projection hazard. This shall be determined by analysis.

This entry may also apply to articles which may be classified in division 1.4 S in accordance with 2.1.1.1, 2.1.1.2 2.1.1.3 and 2.1.1.4, which are used as life saving vehicle air bag inflators or air bag modules or seat-belt pretensioners, when transported as component parts and when these articles as presented for transport have been tested in accordance with test series 6 (c) of part I of the *Manual of Tests and Criteria*, with no explosion of the device, no fragmentation of device casings, and no projection hazard or thermal effect which would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity.

**5. Consequential amendments to the packing instructions**

As a consequence of the proposed classification procedure, amendments to the packing instructions is necessary. All existing elements of the existing P202 are reflected in the proposed new P902. Amend the packing instructions as follows:

**5.1 \* Delete P202**

**5.2 \* Amend P902 to read:**

P902	Packing instructions	P902
This instruction applies to UN 3268		
The following packagings are authorised, provided the general provisions of 4.1.1 and 4.1.3 are met:		
Packagings conforming to the packing group III performance level. Each packaging shall conform to special provision 280 (see 3.3.1). The packaging shall be designed and constructed to prevent movement of the articles and inadvertent operation during normal conditions of transport.		
The articles may also be carried unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.		
<b>Additional requirement:</b>		
Any pressure vessel shall be in accordance with the requirements of the competent authority for the substance(s) contained in the pressure vessel(s).		

It was also felt necessary in order to provide a comprehensive approach to the packaging of such articles assigned to Class 9 to introduce the possibility of using Large Packaging as follows:

**5.3 \* Add new LP902 to read**

<b>LP902</b>	<b>Packing instructions</b>	<b>LP902</b>
This instruction applies to UN 3268		
The following large packagings are authorised, provided the general provisions of 4.1.1 and 4.1.3 are met:		
Large packagings conforming to the packing group III performance level. Each large packaging shall conform to special provision 280 (see 3.3.1). The large packaging shall be designed and constructed to prevent movement of the articles and inadvertent operation during normal conditions of transport.		
The articles may also be carried unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.		
<b>Additional requirement:</b>		
Any pressure vessel shall be in accordance with the requirements of the competent authority for the substance(s) contained in the pressure vessel(s).		

**5.4** As a consequence of reviewing the packing instructions for these articles the following editorial change is proposed in Packing Instruction P135:

In the column for outer packagings, under drums, add “plywood, (1D)”

**APPENDIX A****DEVELOPMENT OF HYBRID ARTICLES**

<b>Pyrotechnic</b>	<b>Pressure vessel 1</b>	<b>Pressure vessel 2</b>
Igniter.	Compressed inert gas	-
Igniter	Compressed flammable gas,	-
Igniter	Flammable fuel	Compressed inert gas
Igniter	Compressed flammable gas	Compressed inert gas
Igniter	Compressed Nitrous oxide	Compressed inert gas
Igniter	Compressed flammable gas	Compressed oxidising gas
Pyrotechnic charge	Compressed inert gas	-
Pyrotechnic charge	Compressed inert gas	-
Pyrotechnic charge	Compressed oxidising gas	-
Pyrotechnic charge	Compressed flammable fuel	-
Pyrotechnic charge	Compressed flammable fuel	Compressed inert gas