



## 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

#### Sixty-first session

Geneva, 28 November-6 December 2022

Item 3 of the provisional agenda

#### Listing, classification and packing

### The application of special provision 28

#### Transmitted by the expert from China\*

#### Introduction

1. At the sixtieth session of the Sub-Committee, the following amendments to special provision 28 (see ST/SG/AC.10/C.3/120, paragraph 29) have been adopted:

“28 This substance may be transported under the provisions of **Class 3** or Division 4.1, only if it is so packed that the percentage of diluent will not fall below that stated, at any time during transport (see **2.3.1.4** and 2.4.2.4).”

2. With the exception of UN 3555, there is no special provision 28 for other liquid desensitized explosives entries, including UN 1204, UN 2059, UN 3064, UN 3343, UN 3357, and UN 3379.

UN No.	Name and description	Class or division	UN packing group	Special Provisions
1204	NITROGLYCERIN SOLUTION IN ALCOHOL with not more than 1 %, nitroglycerin	3	II	
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose	3	I	198
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose	3	II	198
2059	NITROCELLULOSE SOLUTION, FLAMMABLE with not more than 12.6 % nitrogen, by dry mass, and not more than 55 % nitrocellulose	3	III	198 223
3064	NITROGLYCERIN, SOLUTION IN ALCOHOL with more than 1 % but not more than 5 % nitroglycerin	3	II	359

\* A/75/6 (Sect.20), para. 20.51

UN No.	Name and description	Class or division	UN packing group	Special Provisions
3343	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30 % nitroglycerin, by mass	3		274 278
3357	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, N.O.S. with not more than 30 % nitroglycerin, by mass	3	II	274 278
3379	DESENSITIZED EXPLOSIVE, LIQUID, N.O.S.	3	I	274 311

3. Solid desensitized explosives, including UN 1310, UN 1320, UN 1321, UN 1322, UN 1336, UN 1337, UN 1344, UN 1347, UN 1348, UN 1349, UN 1354, UN 1355, UN 1356, UN 1357, UN 1517, UN 1571, UN 2852, UN 3317, UN 3364, UN 3365, UN 3366, UN 3367, UN 3368, UN 3369, UN 3370, UN 3376 are subject to the requirement of special provision 28. But there is no special provision 28 for UN 2555, UN 2556, UN 2557, UN 2907, UN 3319, UN 3344, UN 3380, and UN 3474.

UN No.	Name and description	Class or division	UN packing group	Special Provisions
2555	NITROCELLULOSE WITH WATER (not less than 25 % water, by mass)	4.1	II	394
2556	NITROCELLULOSE WITH ALCOHOL (not less than 25 % alcohol, by mass, and not more than 12.6 % nitrogen, by dry mass)	4.1	II	394
2557	NITROCELLULOSE, with not more than 12.6 % nitrogen, by dry mass, MIXTURE WITH or WITHOUT PLASTICIZER, WITH or WITHOUT PIGMENT	4.1	II	241 394
2907	ISOSORBIDE DINITRATE MIXTURE with not less than 60 % lactose, mannose, starch or calcium hydrogen phosphate	4.1	II	127
3319	NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2 % but not more than 10 % nitroglycerin, by mass	4.1	II	272 274
3344	PENTAERYTHRITOL TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10 % but not more than 20 % PETN, by mass	4.1	II	272 274
3380	DESENSITIZED EXPLOSIVE, SOLID, N.O.S.	4.1	I	274 311 394
3474	1-HYDROXYBENZOTRIAZOLE MONOHYDRATE	4.1	I	

4. From the definition of desensitized explosives, it can be seen that both liquid and solid desensitized explosives generally contain diluents. The concentration of diluents plays an important role in controlling the risk of desensitized explosives. Therefore, the amount of diluents needs to be controlled in a suitable range at any time during transport.

5. Special provision 311 assigned to UN 3379 and UN 3380 also sets out the requirement for controlling the percentage of diluents similar to those in the special provision 28:

311 Substances shall not be transported under this entry unless approved by the competent authority on the basis of the results of appropriate tests according to Part I of the *Manual of Tests and Criteria*. Packaging shall ensure that the percentage of diluent does not fall below that stated in the competent authority approval, at any time during transport.

6. UN 3474 1-HYDROXYBENZOTRIAZOLE MONOHYDRATE is a thermally stable compound. It is homogeneously distributed and does not form a separate layer or phase as in many other desensitized explosives where the organic molecules and water form a heterogeneous system of two microphases (ST/SG/AC.10/C.3/2008/41). In 2008, the Sub-Committee discussed the modification of the proper shipping name for UN 3474 and agreed to delete special provision 28 (see ST/SG/AC.10/C.3/66, paragraph 17 (d)).

7. Although liquid desensitized explosives are generally mutually homogeneous solutions, the crystals may precipitate as the diluent content decreases or the temperature changes, which may present additional risks. Therefore, other liquid desensitized explosives should also add special provision 28, similar to the reasons for the special provision 28 to UN 3555. At the same time, the requirement of special provision 28 is already sufficient, additional testing should not be required for liquid desensitized explosives.

8. Considering the above, it is recommended to assign special provision 28 to UN 1204, UN 2059, UN 3064, UN 3343, UN 3357, UN 2555, UN 2556, UN 2557, UN 2907, UN 3319, and UN 3344.

## **Proposal**

9. The amendments proposed below are needed:

In 3.2.2 Dangerous Goods List add special provision 28 in column (6) for UN 1204, UN 2059, UN 3064, UN 3343, UN 3357, UN 2555, UN 2556, UN 2557, UN 2907, UN 3319 and UN 3344.

---