



**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****Fifty-sixth session**

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Item 3 of the provisional agenda

Listing, classification and packing**Provisions for batteries (wet, non-spillable) installed in cargo
transport units****Transmitted by the expert from China*****Introduction**

1. Nowadays, the manufacturing and transportation of cargo transport units (CTUs) equipped with batteries are becoming more and more common. A new entry UN 3536 (LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries) was added to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods Model Regulations and a special provision 389 was adopted accordingly, with a view to addressing the transport of large lithium battery systems installed in cargo transport unit and fitted with fire extinguishers and refrigerating machines. In accordance with special provision 389, dangerous goods necessary for the safe and proper operation of the cargo transport unit, e.g. fire-extinguishing systems and air-conditioning systems, shall be properly secured to or installed in the cargo transport unit and are not subject to these regulations. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

2 The UN 3536 describes only the transport regulation for lithium battery (lithium ion batteries or lithium metal batteries) installed in cargo transport unit, however, battery (wet, non-spillable, UN2800, when meeting the requirements of special provision 238, can be transported as normal cargo; different from UN 2794) systems are not included. Similar to

* In accordance with the programme of work of the Sub-Committee for 2019–2020 approved by the Committee at its ninth session (see ST/SG/AC.10/C.3/108, paragraph 141 and ST/SG/AC.10/46, paragraph 14).

UN 3536, battery (wet, non-spillable) are installed within a cargo transport unit together with fire suppression (fire extinguishers, UN1044) and air conditioning systems (refrigerating machines, UN2857). These dangerous goods, such as fire suppression and air conditioning systems, within the cargo unit are for safety or operational purposes.

3. The only difference is that the power supply systems included are batteries (wet, non-spillable) instead of lithium batteries (lithium ion batteries or lithium metal batteries). These batteries act as the power supply of the devices installed in the CTUs, and are not working during transportation.

4. At present, the Model Regulations do not clearly address the transport of large battery (wet, non-spillable) systems mentioned above. Thus, it is unclear how such large battery (wet, non-spillable) systems are to be transported.

Discussion

5. Considering the above, this document offers three options for consideration by the Sub-Committee. The first is to add a new special provision XXX to the current entry for batteries (UN 2800), which would prescribe the relevant requirements in much the same manner as special provision 389. The second is to modify the current entry UN3536 and add a new special provision, so that it applies to not only lithium batteries (lithium ion batteries or lithium metal batteries), but also batteries (wet, non-spillable) installed in cargo transport unit. The third option is to create a new entry “BATTERIES, WET, NON-SPILLABLE INSTALLED IN CARGO TRANSPORT UNIT” to which the new special provision XXX would be assigned. This new entry would be modelled after the “LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT” entry (UN3536) and “VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED” entry (UN3166) in that no packing instruction would be indicated and the relevant requirements prescribed via the new special provision XXX besides special provision 238.

6. As to the new special provision XXX, both “fire extinguishers” (UN1044) and “refrigerating machines” (UN2857) are permitted to be transported when packed in “suitable outer packaging”. For these ancillary dangerous goods, an approach similar to that taken in special provision 389 as assigned to UN3536 would be proposed. Dangerous goods necessary for the safety and proper operation of the cargo transport unit, e.g. fire-extinguishing systems and air-conditioning systems, shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to the provisions of the Model Regulations.

Proposal

7. Option 1:

In the Dangerous Goods List in Chapter 3.2, add special provision “XXX” in column (6) for UN2800.

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	
								Packing instructions	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2800	BATTERIES, WET, NON-SPILLABLE, electric storage	8			238 <u>XXX</u>	1L	E0	P003	PP16		

In Chapter 3.3, add a new special provision XXX (modelled after special provision 389):

XXX This entry applies when batteries (wet, non-spillable) installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations normally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to these Regulations. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport unit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2.

If wet, non-spillable batteries installed in a cargo transport unit meet all the requirements of special provision 238, the cargo transport units are not subject to these Regulations.

or

8. Option 2:

In the Dangerous Goods List in Chapter 3.2, modify the entry UN3536 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)
3536	LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries or BATTERIES, WET, NON-SPILLABLE INSTALLED IN CARGO TRANSPORT UNIT	9			389	0	E0				

In Chapter 3.3, modify special provision 389, as follows:

389 This entry ~~only~~ applies to lithium ion batteries or lithium metal batteries or batteries (wet, non-spillable) installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries shall meet the requirements of 2.9.4(a) to (g) and contain the necessary systems to prevent overcharge and over discharge between the batteries. The batteries (wet, non-spillable) shall meet the requirements of special provision 238 (a). The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations normally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to these Regulations. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport unit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2.

If wet, non-spillable batteries installed in a cargo transport unit meet all the requirements of special provision 238, the cargo transport units are not subject to these Regulations.

or

9. Option 3:

In the Dangerous Goods List in Chapter 3.2, add a new entry 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)
35XX	BATTERIES, WET, NON-SPILLABLE INSTALLED IN CARGO TRANSPORT UNIT	8			XXX	0	E0				

In Chapter 3.3, add a new special provision XXX (modelled after special provision 389):

XXX This entry applies only to batteries (wet, non-spillable) installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The batteries (wet,non-spillable) shall meet the requirements of special provision 238 (a). The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations normally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to these Regulations. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport unit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2.

If wet, non-spillable batteries installed in a cargo transport unit meet all the requirements of special provision 238, the cargo transport units are not subject to these Regulations.