

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

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Item 4 (e) of the provisional agenda

Electric storage systems:

Sodium-ion batteries

Transport of sodium ion batteries with organic electrolyte installed in cargo transport unit

Transmitted by the expert from China

I. Background

1. Sodium ion batteries with organic electrolyte have the advantages of strong low temperature performance, low price and abundant mineral resources, which have been used in many fields, especially in the energy storage industry. The Sub-Committee approved to include two entries of sodium ion batteries with organic electrolyte in the UN *Model Regulations* at its fifty-ninth session: *UN 3551 SODIUM ION BATTERIES with organic electrolyte* and *UN 3552 SODIUM ION BATTERIES with organic electrolyte CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES with organic electrolyte PACKED WITH EQUIPMENT*.

2. In the twenty-second revised edition of the UN *Model Regulations*, UN 3536 applies to lithium batteries installed in a cargo transport unit. While the transport demand of energy storage systems made of sodium ion batteries in cargo transport unit is increasing, there is not any entry which applies to this product. Considering the similar structure and transport risk of energy storage systems in cargo transport unit made of lithium ion batteries and sodium ion batteries, China suggests establishing a new entry for sodium ion batteries with organic electrolyte installed in cargo transport unit, referring to the transport requirements of UN 3536.

II. Proposals

3. Based on the above discussion, China suggests the following amendments to the UN *Model Regulations* (new text is underlined):

- (a) Add "UN XXXX SODIUM ION BATTERIES INSTALLED IN CARGO TRANSPORT UNIT with organic electrolyte" in chapter 2.9.2;
- (b) Add a new entry in chapter 3.2:

UN No.	Name and description	Class or division	Subsidiary hazard	UN packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
XXXX	<u>SODIUM ION BATTERIES INSTALLED IN CARGO TRANSPORT UNIT with organic electrolyte</u>	9			YYY	0	E0				

- (c) At the end of special provision 360, insert “Sodium ion batteries installed in cargo transport units with organic electrolyte, designed only to provide power external to the transport unit shall be assigned to entry UN XXXX SODIUM ION BATTERIES INSTALLED IN CARGO TRANSPORT UNIT with organic electrolyte.”;
- (d) In special provision 388, at the end of the seventh paragraph, insert “Sodium ion batteries installed in a cargo transport unit with organic electrolyte and designed only to provide power external to the cargo transport unit shall be assigned to the entry UN XXXX SODIUM ION BATTERIES INSTALLED IN CARGO TRANSPORT UNIT with organic electrolyte.”;
- (e) Add a new special provision in chapter 3.3:
“YYY This entry only applies to sodium ion batteries installed in a cargo transport unit with organic electrolyte and designed only to provide power external to the cargo transport unit. The sodium ion batteries with organic electrolyte shall meet the requirements of 2.9.5 (a) to (f), and contain the necessary systems to prevent overcharge and over discharge between the batteries.
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.”
- (f) In ALPHABETICAL INDEX OF SUBSTANCES AND ARTICLES, add “SODIUM ION BATTERIES INSTALLED IN CARGO TRANSPORT UNIT with organic electrolyte 9 XXXX” in alphabetical order.