



**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 4 (c) of the provisional agenda

Electric storage systems: transport provisions**Assignment of a new UN number to lithium battery powered
vehicles****Submitted by the International Air Transport Association (IATA)*****Introduction**

1. At the sixtieth session of the Sub-Committee, IATA submitted an informal document INF.9 (sixtieth session) that sought comments on potential options for improving the hazard communication for vehicles powered by lithium batteries, particularly for personal mobility devices, such as e-bikes, e-scooters, e-skateboards and other lightweight vehicles, which are typically packed in fibreboard boxes when offered for transport.
2. The informal document sought discussion on whether there should be consideration of a new or amended special provision such that vehicles powered by lithium batteries when in a packaging, the hazard label applied to the package should be Model No. 9A to identify the presence of lithium batteries, or if it would be better to consider a new UN number and proper shipping name for vehicles powered by lithium batteries.
3. In the discussion during the sixtieth session there was a clear preference from the members of the Sub-Committee to consider the possibility of a new entry specifically for vehicles powered by lithium batteries.
4. This working document presents the results of consideration from the discussions at the last session as well as discussions with a number of experts and observers following the last session.
5. It is proposed that a new UN number and proper shipping name be added to the Dangerous Goods List for vehicles powered by lithium batteries. This would then provide the opportunity for the modal bodies to consider appropriate hazard communication aligned to that for the other entries for lithium batteries, UN Nos. 3090, 3091, 3480 and 3481.
6. It is also proposed to add a new packing instruction for vehicles powered by lithium batteries, based in part on the requirements in packing instruction P903 for lithium batteries contained in equipment. However, recognising that a vehicle may be anything from an

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

electric skateboard to a passenger car, or larger, registered for use on public roads, it is proposed to provide an exception from the need for packagings where the vehicle has a net mass of 30 kg or more.

7. Based on the proposed new UN number and proper shipping name there are consequential amendments proposed to special provisions 360 and 388 to address the adoption of the new UN number and proper shipping name.

8. The changes adopted by the Sub-Committee at the fifty-ninth session to bring into the Model Regulations detailed provisions for sodium ion batteries has meant that the proposals in this paper have also had to consider those revisions.

9. Specifically, the changes agreed to special provision 360 at the fifty-ninth session assumes that there may be vehicles powered by sodium ion batteries. As such, it is proposed that the new UN 35XX includes two proper shipping names, “VEHICLE, LITHIUM BATTERY POWERED” and “VEHICLE, SODIUM ION BATTERY POWERED”.

10. The other additional change proposed in this document is to add an exception into the wording of special provision 388. The current wording allows, where vehicles are transported in a packaging, for certain parts of the vehicle to be removed and placed in the packaging.

11. While it may be appropriate for parts of a vehicle, such the seat(s), handlebars or even wheels to be removed to fit into the packaging, it is believed that if the battery is removed, that changes the classification. This particularly the case for vehicles powered by lithium or sodium ion batteries, where if the battery is removed, then the vehicle entry is no longer valid and the applicable entry shall be UN 3091, LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT or UN 3552, SODIUM ION BATTERIES PACKED WITH EQUIPMENT.

Proposal

12. The Sub-Committee is invited to assign a new UN number and proper shipping name to vehicles powered by lithium or sodium ion batteries, as shown below. This would provide a clear differentiation between lithium or sodium ion battery-powered vehicles and other battery powered vehicles.

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)
35XX	VEHICLE, LITHIUM BATTERY POWERED (lithium ion or lithium metal battery) or VEHICLE, SODIUM ION BATTERY POWERED	9			384 388	0	E0	P9xx			

13. In 3.3 amend special provisions 360 and 388, as follows (new text is underlined, deleted text in strikethrough):

“360 Vehicles only powered by lithium metal, lithium ion or sodium ion batteries shall be assigned to the entry ~~UN 3171 BATTERY POWERED VEHICLE UN 35XX VEHICLE, LITHIUM BATTERY POWERED~~ or VEHICLE, SODIUM ION BATTERY POWERED, as applicable. Lithium batteries installed in cargo transport units, designed only to provide power external to the transport unit shall be assigned to entry UN 3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT.”

“388 UN No. 3166 entries apply to vehicles powered by flammable liquid or gas internal combustion engines or fuel cells.

...

Entry UN 3171 only applies to vehicles and equipment powered by wet batteries, or sodium batteries, ~~lithium metal batteries or lithium ion batteries~~ and equipment powered by wet batteries or sodium batteries transported with these batteries installed.

Entry UN 35XX only applies to vehicles powered by lithium metal, lithium ion or sodium ion batteries transported with the batteries installed.

For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with a motor) and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheelchairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft. This includes vehicles transported in a packaging. ~~In this case~~ some parts of the vehicle, other than the battery, may be detached from its frame to fit into the packaging.

...”

14. In 4.1.4.1 add the following new packing instruction:

P9XX	PACKING INSTRUCTION	P9XX
This packing instruction applies to UN No. 35XX.		
The vehicle shall be secured in a strong, rigid outer packaging constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use. They shall be constructed in such a manner as to prevent accidental operation during transport. Packagings need not meet the requirements of 4.1.1.3. The vehicle shall be secured by means capable of restraining the vehicle in the outer packaging to prevent any movement during transport which would change the orientation or cause the battery in the vehicle to be damaged.		
<i>NOTE: The packagings may exceed a net mass of 400 kg (see 4.1.3.3).</i>		
Vehicles with an individual net mass of 30 kg or more:		
(a) may be loaded into crates or secured to pallets; or		
(b) may be transported unpackaged providing that the vehicle is capable of remaining upright during transport without additional support and the vehicle provides adequate protection to the battery so that no damage to the battery can occur; or		
(c) where the vehicle has the potential to topple over during transport (e.g. motor cycles), may be transported unpackaged in a cargo transport unit fitted out with the means to prevent toppling in transport, such as by the use of bracing, frames or racking.		

15. If the above is agreed, then there are the following consequential amendments:

Chapter 2.9

2.9.2 In the section for “**Other substances or articles presenting a danger during transport, but not meeting the definitions of another class**”, add the following new entries after “UN 3548 ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS N.O.S.”:

“35XX VEHICLE, LITHIUM BATTERY POWERED (lithium ion or lithium metal battery)

35XX VEHICLE, SODIUM ION BATTERY POWERED”.

Alphabetical index

Add the following new entries in alphabetical order:

VEHICLE, LITHIUM BATTERY POWERED (lithium ion or lithium metal battery)	9	35XX
VEHICLE, SODIUM ION BATTERY POWERED	9	35XX
