

**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals**

30 November 2022

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

Assignment of a new UN number to lithium battery powered vehicles

Submitted by the International Air Transport Association (IATA)

Introduction

1. Based on the discussions of ST/SG/AC.10/C.3/2022/70 submitted by IATA and informal document INF.45 submitted by the expert from the United Kingdom and the comments provided, the following revised proposal is submitted for the consideration of the Sub-Committee.

Proposal

2. The Sub-Committee is invited to assign new UN numbers and proper shipping names to vehicles powered by lithium ion batteries, lithium metal batteries and sodium ion batteries, as shown below. This would provide a clear differentiation between vehicles powered by lithium battery types, 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 ION BATTERY POWERED	9			384 388 4xy	0	E0	P9xx			
35XY	VEHICLE, LITHIUM METAL BATTERY POWERED	9			384 388 4xy	0	E0	P9xx			
35XZ	VEHICLE, SODIUM ION BATTERY POWERED	9			384 388 4xx 4xy	0	E0	P9xx			

3. Amend special provisions 360 and 388, as follows:

“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 ION BATTERY POWERED or UN 35XY VEHICLE, LITHIUM METAL BATTERY POWERED or UN 35YZ 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 metallic sodium batteries, ~~lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries~~ transported with these batteries installed.

UN 35XX VEHICLE, LITHIUM ION BATTERY POWERED, UN 35XY VEHICLE, LITHIUM METAL BATTERY POWERED and UN 35YZ VEHICLE, SODIUM ION BATTERY POWERED, as applicable, apply to vehicles powered by lithium ion, lithium metal 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.

...”

4. Add the following new Special Provisions to Chapter 3.3:

“4xx Vehicles powered by sodium ion batteries, with no other dangerous goods, are not subject to other provisions of these Regulations other than the requirement for a transport document, when the sodium ion battery has a 0 % state of charge and the battery is fitted with a short circuit device. The transport document shall state “Not dangerous goods, transported in accordance with Special Provision SP4xx.

4xy Vehicles are not subject to the marking or labelling requirements of Chapter 5.2 when they are not fully enclosed by packagings, crates or other means that prevent ready identification.”

5. Add the following new packing instruction:

P9XX	PACKING INSTRUCTION	P9XX
This packing instruction applies to UN No. 35XX, UN 35XY and UN 35XZ.		
<p>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.</p> <p><u>Vehicles transported in a packaging may have some parts of the vehicle, other than the battery, detached from its frame to fit into the packaging.</u></p> <p><i>NOTE: The packagings may exceed a net mass of 400 kg (see 4.1.3.3).</i></p> <p>Vehicles with an individual net mass of 30 kg or more:</p> <p>(a) may be loaded into crates or secured to pallets; or</p> <p>(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</p> <p>(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.</p>		

6. 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 ION BATTERY POWERED
35XY	VEHICLE, LITHIUM METAL BATTERY POWERED
35XZ	VEHICLE, SODIUM ION BATTERY POWERED”.

Alphabetical index

Add the following new entries in alphabetical order:

VEHICLE, LITHIUM ION BATTERY POWERED	9	35XX
VEHICLE, LITHIUM METAL BATTERY POWERED	9	35XY
VEHICLE, SODIUM ION BATTERY POWERED	9	35XZ