



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/25)**

Delhi, India, 21 to 25 April 2025

- Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods (REC-A-DGS-2027)**
1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2027-2028 Edition

DRAFT AMENDMENTS TO PART 3 OF THE TECHNICAL INSTRUCTIONS TO ALIGN WITH THE UN RECOMMENDATIONS

(Presented by the Secretary)

SUMMARY

This working paper contains draft amendments to Part 3 of the Technical Instructions to reflect the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals at its twelfth session (Geneva, 6 December 2024).

Action by the DGP-WG: The DGP-WG is invited to agree to the draft amendments in this working paper.

Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

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Chapter 2

ARRANGEMENT OF THE DANGEROUS GOODS LIST (TABLE 3-1)

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Table 3-1. Dangerous Goods List

Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4		6	7	8	9	10	11	12	13
UN Model Regulations, Chapter 3.2, dangerous goods list (see ST/SG/AC.10/52/Add.1)												
Ethylene oxide	1040	2.3	2.1 8		AU 1 CA 7 IR 3 NL 1 US 3 US 4	A2 A131				FORBIDDEN		FORBIDDEN
Ethylene oxide with nitrogen up to a total pressure of 1 MPa at 50°C	1040	2.3	2.1 8		AU 1 CA 7 IR 3 NL 1 US 3 US 4	A2				FORBIDDEN		FORBIDDEN
Ethylene oxide and carbon dioxide mixture with more than 9% but not more than 87% ethylene oxide	1041	2.1	8	Gas flammable & Corrosive	AU 1 CA 7 IR 3 NL 1 US 3	A1		E0		FORBIDDEN	200	25 kg
Ethylene oxide and carbon dioxide mixture, with more than 87% ethylene oxide	3300	2.3	2.1 8		AU 1 CA 7 IR 3 NL 1 US 3 US 4	A2				FORBIDDEN		FORBIDDEN
Petroleum gases, liquefied	1075	2.1		Gas flammable	AU 1 CA 7 IR 3 NL 1 US 3	A1 A237		E0		FORBIDDEN	200	150 kg
Hydrocarbon gas mixture, liquefied, n.o.s.*	1965	2.1		Gas flammable	AU 1 CA 7 IR 3 NL 1 US 3	A1 A237		E0		FORBIDDEN	200	150 kg

Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4		6	7	8	9	10	11	12	13
Ammonium hydrogendifluoride, solid	1727	8	<u>6.1</u>	Corrosive & Toxic	US 4		II	E2	859 Y844	15 kg 5 kg	863	50 kg
Chlorophenols, toxic, solid, n.o.s.*	2020	6.1		Toxic	US 4	A25	III	E1	670 Y645	100 kg 10 kg	677	200 kg
Chlorophenols, toxic, liquid, n.o.s.*	2021	6.1		Toxic	US 4		III	E1	655 Y642	60 L 2 L	663	220 L
Hydrazine, anhydrous	2029	8	3 6.1	Corrosive & Liquid flammable & Toxic	US 4	<u>A20</u>	I	E0	FORBIDDEN		854	2.5L
Butyl acrylates, stabilized	<u>2348</u>	<u>3</u>		<u>Liquid flammable</u>		<u>A209</u>	<u>II</u>	<u>E2</u>	<u>353 Y341</u>	<u>5L 1L</u>	<u>364</u>	<u>60 L</u>
1,2-Di-(dimethylamino) ethane	2372	3	<u>6.1 8</u>	Liquid flammable & Toxic & Corrosive			II	E2	353 Y341	5 L 1 L	364	60 L
Refrigerating machines containing non-flammable, non-toxic gases or ammonia solutions (UN 2672)	2857	2.2		Gas non-flammable		A26		E0	See 211		See 211	
Heating machines containing non-flammable, non-toxic gases or ammonia solutions (UN 2672)	<u>2857</u>	<u>2.2</u>		<u>Gas non-flammable</u>		<u>A26</u>		<u>E0</u>	<u>See 211</u>		<u>See 211</u>	
Refrigerating machines containing flammable, non-toxic, liquefied gas	3358	2.1				A103			FORBIDDEN		FORBIDDEN	
Heating machines containing flammable, non-toxic, liquefied gas	<u>3358</u>	<u>2.1</u>				<u>A103</u>			<u>FORBIDDEN</u>		<u>FORBIDDEN</u>	
Vanadium pentoxide, non-fused form, containing less than 10 % respirable particles	2862	6.1		Toxic			III	E1	670 Y645	100 kg 10 kg	677	200 kg
Vanadium pentoxide, non-fused form, containing not less than 10 % respirable particles	<u>2862</u>	<u>6.1</u>		<u>Toxic</u>			<u>II</u>	<u>E4</u>	<u>669 [?]</u>	<u>25 kg [0.5 L]</u>	<u>[676]</u>	<u>[100 kg]</u>
Fluoroanilines	2941	6.1		Toxic			III	E1	655 Y642	60 L 2 L	663	220 L

Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4		6	7	8	9	10	11	12	13
5-tert-Butyl-2,4,6-trinitro-m-xylene	2956	4.1					III		FORBIDDEN		FORBIDDEN	
Musk xylene	2956	4.1		Solid flammable		A300 A315	III		FORBIDDEN		FORBIDDEN	
Environmentally hazardous substance, liquid, n.o.s.*	3082	9		Miscellaneous	DE 5 US 4	A97 A158 A197 A215 A238 A239	III	E1	964 Y964	450 L 30 kg G	964	450 L
Lithium ion batteries (including lithium ion polymer batteries)	3480	9		Miscellaneous — Lithium or sodium ion batteries	US 3	A88 A99 A154 A183 A201 A213 A235		E0	FORBIDDEN		See 965	
Lithium ion batteries contained in equipment (including lithium ion polymer batteries)	3481	9		Miscellaneous — Lithium or sodium ion batteries	US 3	A48 A88 A99 A154 A181 A185 A213 A220 A235		E0	967	5 kg	967	35 kg
Lithium ion batteries packed with equipment (including lithium ion polymer batteries)	3481	9		Miscellaneous — Lithium or sodium ion batteries	US 3	A88 A99 A154 A181 A185 A213 A235		E0	966	5 kg	966	35 kg
Sodium ion batteries with organic electrolyte	3551	9		Miscellaneous — Lithium or sodium ion batteries		A88 A99 A154 A183 A201 A228 A235		E0	FORBIDDEN		See 976	
Sodium ion batteries contained in equipment with organic electrolyte	3552	9		Miscellaneous — Lithium or sodium ion batteries		A48 A88 A99 A154 A185 A228 A235		E0	978	5 kg	978	35 kg

Name	UN No.	Class or division	Subsidiary hazard	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger and cargo aircraft		Cargo aircraft only	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4		6	7	8	9	10	11	12	13
Sodium ion batteries packed with equipment with organic electrolyte	3552	9		Miscellaneous — Lithium or sodium ion batteries		A48 A88 A99 A154 A185 A228 <u>A235</u>		E0	977	5 kg	977	35 kg
Lithium ion batteries installed in cargo transport unit <small>lithium ion batteries or lithium metal batteries</small>	3536	9				<u>[A235]</u>			FORBIDDEN		FORBIDDEN	
Articles containing non-flammable, non toxic gas, n.o.s.*	3538	2.2	See 2;0.6			A2 A88 A225 <u>A236</u>			FORBIDDEN		FORBIDDEN	
<u>Chlorophenols, corrosive, toxic, solid, n.o.s.*</u>	<u>3561</u>	<u>8</u>	<u>6.1</u>	<u>Corrosive & Toxic</u>			<u>II</u>	<u>E2</u>	<u>859</u> <u>Y844</u>	<u>15 kg</u> <u>5 kg</u>	<u>863</u>	<u>50 kg</u>
<u>Chlorophenols, corrosive, solid, n.o.s.</u>	<u>3562</u>	<u>8</u>		<u>Corrosive</u>			<u>II</u>	<u>E2</u>	<u>859</u> <u>Y844</u>	<u>15 kg</u> <u>5 kg</u>	<u>863</u>	<u>50 kg</u>
<u>Lithium metal batteries installed in cargo transport unit</u>	<u>3563</u>	<u>9</u>				<u>[A235]</u>			<u>FORBIDDEN</u>		<u>FORBIDDEN</u>	
<u>Sodium ion batteries installed in cargo transport unit</u>	<u>3564</u>	<u>9</u>				<u>[A235]</u>			<u>FORBIDDEN</u>		<u>FORBIDDEN</u>	

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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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UN Model Regulations, Chapter 3.3, SP 145 (see ST/SG/AC.10/52/Add.1):

- A9 (≈145) Alcoholic beverages ~~containing~~ [with more than 24 per cent but] not more than 70 per cent alcohol by volume, when packed in receptacles of 5 litres or less, are not subject to these Instructions when carried as cargo.

UN Model Regulations, Chapter 3.3, SP 119 (see ST/SG/AC.10/52/Add.1):

- A26 (119) Refrigerating machines include air conditioning units and machines or other appliances which have been designed for the specific purpose of keeping food or other items at low temperature in an internal compartment. Heating machines include machines or other appliances which have been designed for the specific purpose of heating. Refrigerating or heating machines and ~~refrigerating machine~~ their components are considered not subject to these Instructions if containing less than 12 kg of a gas in Division 2.2 or if containing less than 12 L ammonia solution (UN 2672). Machines or other appliances that are used to perform heating and cooling functions may be transported either as "Refrigerating machines" or "Heating machines"

UN Model Regulations, Chapter 3.3, SP 172 (see ST/SG/AC.10/52/Add.1):

- A78 (≈172) Where a radioactive material has a subsidiary hazard(s):

- a) The substance must be allocated to Packing Group I, II or III, if appropriate, by application of the packing group criteria provided in Part 2 corresponding to the nature of the predominant subsidiary hazard.
- b) Packages must be labelled with subsidiary hazard labels corresponding to each subsidiary hazard exhibited by the material in accordance with the relevant provisions of 5;3.2; corresponding placards must be affixed to cargo transport units in accordance with the relevant provisions of 5;3.6.
- c) For the purposes of documentation and package marking, the proper shipping name must be supplemented with the name of the constituents which most predominantly contribute to ~~this~~ each subsidiary hazard(s) and which must be enclosed in parenthesis. However, where the constituent is listed by name in Table 3-1 and:
 - i) "forbidden" is shown in columns 10 and 11, the dangerous goods transport document must indicate Cargo Aircraft Only and the package must bear cargo aircraft only labels, except that the substance may be shipped on a passenger aircraft with the prior approval of the appropriate authority of the State of Origin and the State of the Operator under the conditions established by those authorities. A copy of the document of approval, showing the quantity limitations and the packaging requirements, must accompany the consignment; and
 - ii) "forbidden" is shown in columns 12 and 13, the substance is forbidden for transport by air except that the substance may be shipped on a cargo aircraft with the prior approval of the appropriate authority of the State of Origin and the State of the Operator under the conditions established by those authorities. A copy of the document of approval, showing the quantity limitations and the packaging requirements, must accompany the consignment.

TIs UN

Radioactive material with a subsidiary hazard of Division 4.2 in Packing Group I must be transported in Type B packages. These may be transported on passenger or cargo aircraft.

- d) The dangerous goods transport document must indicate the class or division of ~~the~~ each subsidiary hazard and, where assigned, the packing group as required by 5;4.1.4.1 d) and e).

UN Model Regulations, Chapter 3.3, SP 405 (see ST/SG/AC.10/52/Add.1):

UN is revising as follows:

405 Vehicles ~~are not subject to the marking or labelling requirements of chapter 5.2 when they~~ that ~~are not~~ fully enclosed by packagings, crates or other means that prevent ready identification are subject to the marking and labelling requirements of chapter 5.2.

Does it make sense to revise Technical Instructions?

UN assigns 405 to UN 3556, 3557 and 3558

A87 is assigned to the same entries as the UN plus UN 2990, 3072, 3166, 3171, 3528, 3529, 3530

A87 Articles which are not fully enclosed by packaging, crates or other means that prevent ready identification are not subject to the marking requirements of 5;2 or the labelling requirements of 5;3.

UN Model Regulations, Chapter 3.3, SP 291 (see ST/SG/AC.10/52/Add.1):

A103 (≈291) Flammable liquefied gases must be contained within refrigerating or heating machine components. These components must be designed and tested to at least three times the working pressure of the machinery. ~~The~~ Refrigerating or heating machines must be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure-retaining components during normal conditions of transport. Refrigerating or heating machines and ~~refrigerating machine~~ their components are considered not subject to these Instructions if containing less than 100 g flammable, non-toxic, liquefied gas. Machines that are used to perform heating and cooling functions may be transported either as "Refrigerating machines" or "Heating machines".

TIs UN

UN Model Regulations, Chapter 3.3, SP 301 (see ST/SG/AC.10/52/Add.1):

See also proposed amendment to Packing Instruction 962 in DGP-WG/25-WP/14

A107 (≈301) This entry only applies to articles such as machinery, apparatus or devices containing dangerous goods as a residue or as an integral element of the articles. It must not be used for articles for which a proper shipping name already exists in Table 3-1. Such articles may in addition contain lithium cells or batteries or sodium ion cells or batteries, provided that the cells or batteries:

a) provide electrical power for the operation of the article; and

b) meet the requirements of Section II of Packing Instruction 967 for lithium ion cells or batteries, 970 for lithium metal cells or batteries or 978 for sodium ion cells or batteries.

Articles containing no other dangerous goods than cells or batteries must be transported under UN 3091, UN 3481 or UN 3552, as appropriate.

Where the quantity of dangerous goods exceeds the limits permitted by Packing Instruction 962, and the dangerous goods meet the provisions of Special Provision 301 of the UN Model Regulations, the articles may be transported only with the prior approval of the appropriate authority of the State of Origin and the State of the Operator under the written conditions established by those authorities.

Notwithstanding the quantities specified in Packing Instruction 962, articles may also contain up to 5 kg of UN 3077 – **Environmentally hazardous substance, solid, n.o.s.** and/or 5 L of UN 3082 – **Environmentally hazardous substance, liquid, n.o.s.** The quantity of environmentally hazardous substance must not be indicated on the dangerous goods transport document.

Articles containing only UN 3077 – **Environmentally hazardous substance, solid, n.o.s.** and/or UN 3082 – **Environmentally hazardous substance, liquid, n.o.s.** in quantities not exceeding 5 kg or 5 L, respectively, are not subject to these Instructions.

Note.— Where the quantity of dangerous goods in the article exceeds the quantity permitted by Special Provision 301 of the UN Model Regulations, or the dangerous goods are not permitted as limited quantity by the UN Model Regulations, classification of the article must be in accordance with Part 2, Introductory Chapter, 6.1 to 6.6.

UN Model Regulations, Chapter 3.3, SP 280 (see ST/SG/AC.10/52/Add.1):

A115 (280) This entry applies to safety devices for vehicles, vessels or aircraft, such as air bag inflators, air bag modules, seat belt pretensioners, and pyromechanical devices and which contain dangerous goods of Class 1 or dangerous goods of other classes and when transported as component parts and if these articles as presented for transport have been tested in accordance with test series 6 (c) of Part I of the UN *Manual of Tests and Criteria*, with no explosion of the device, no fragmentation of the device casing or pressure receptacle, and no projection hazard or thermal effect which would significantly hinder firefighting or other emergency response efforts in the immediate vicinity.

This entry does not apply to life saving appliances described in Packing Instruction 955 (UN Nos. 2990 and 3072) or to fire suppressant dispersing devices (UN Nos. 0514 and 3559). However, this entry may be used for safety devices of Class 9 transported for installation in life-saving appliances (UN 2990) in accordance with Packing Instruction 955.

TIs UN

UN Model Regulations, Chapter 3.3, SP 360 (see ST/SG/AC.10/52/Add.1):

- A185 (360) Vehicles only powered by lithium metal, lithium ion or sodium ion batteries must be assigned to UN 3556 **Vehicle, lithium ion battery powered** or UN 3557 **Vehicle, lithium metal battery powered** or UN 3558 **Vehicle, sodium ion battery powered**, as applicable. Vehicles powered only by hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h) must be assigned to the entry UN 3556 Vehicle, lithium ion battery powered.

Lithium batteries, sodium ion batteries or hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h) installed in cargo transport units, designed only to provide power external to the transport unit must be assigned to UN 3536 **Lithium ion batteries installed in cargo transport unit**, UN 3563 Lithium metal batteries installed in cargo transport unit or UN 3564 Sodium ion batteries installed in cargo transport unit, as applicable.

UN Model Regulations, Chapter 3.3, SP 363 (see ST/SG/AC.10/52/Add.1):

- A208 (≈363) a) This entry applies to engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (such as combustion engines, generators, compressors, turbines, heating units).
- b) Engines and machinery containing fuels meeting the classification criteria of Class 3 must be consigned under the entries UN 3528 – **Engine, internal combustion, flammable liquid powered** or UN 3528 – **Engine, fuel cell, flammable liquid powered** or UN 3528 – **Machinery, internal combustion, flammable liquid powered** or UN 3528 – **Machinery, fuel cell, flammable liquid powered**, as appropriate.
- c) Engines and machinery containing fuels meeting the classification criteria of Division 2.1 must be consigned under the entries UN 3529 – **Engine, internal combustion, flammable gas powered** or UN 3529 – **Engine, fuel cell, flammable gas powered** or UN 3529 – **Machinery, internal combustion, flammable gas powered** or UN 3529 – **Machinery, fuel cell, flammable gas powered**, as appropriate.
- Engines and machinery powered by both a flammable gas and a flammable liquid must be consigned under the appropriate UN 3529 entry.
- d) Engines and machinery containing liquid fuels meeting the classification criteria for environmentally hazardous substances and not meeting the classification criteria of any other class or division, must be consigned under the entries UN 3530 – **Engine, internal combustion** or UN 3530 – **Machinery, internal combustion**, as appropriate.

UN Model Regulations, Chapter 3.3, SP 387 (see ST/SG/AC.10/52/Add.1):

- A213 (387) Lithium batteries in conformity with 2:9.3 f) containing both primary lithium metal cells and rechargeable lithium ion cells must be assigned to UN Nos. 3090 or 3091 as appropriate. When such batteries are transported in accordance with Section IB of Packing Instruction 968 or in accordance with Section II of Packing Instruction 969 or 970, the total lithium content of all lithium metal cells contained in the battery must not exceed 1.5 g, and the total capacity, watt-hour rating of all lithium ion cells contained in the battery must not exceed 10 Wh.

UN Model Regulations, Chapter 3.3, SP 388 (see ST/SG/AC.10/52/Add.1):

See also proposed amendment to Packing Instructions 950, 951 and 952 in DGP-WG/25-WP/14

- A214 (388) UN No. 3166 entries apply to vehicles powered by flammable liquid or flammable gas internal combustion engines or fuel cells.

TIs UN

Vehicles powered by a fuel cell engine must be assigned to UN 3166 **Vehicle, fuel cell, flammable gas powered** or UN 3166 **Vehicle, fuel cell, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, ~~sodium batteries, lithium metal batteries or lithium ion batteries~~ nickel-metal hydride batteries, metallic sodium batteries, sodium alloy batteries, lithium metal batteries, lithium ion batteries, hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h or sodium ion batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine must be assigned to UN 3166 **Vehicle, flammable gas powered** or UN 3166 **Vehicle, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, ~~sodium batteries, lithium metal batteries or lithium ion batteries~~ nickel-metal hydride batteries, metallic sodium batteries, sodium alloy batteries, lithium metal batteries, lithium ion batteries, hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h or sodium ion batteries, transported with the battery(ies) installed.

If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it must be assigned to UN 3166 **Vehicle, flammable gas powered**.

Entry UN 3171 only applies to vehicles and equipment powered by wet batteries, metallic sodium batteries or sodium alloy batteries transported with these batteries installed.

UN 3556 **Vehicle, lithium ion battery powered**, UN 3557 **Vehicle, lithium metal battery powered** and UN 3558 **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. Vehicles powered only by hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h must be assigned to the entry UN 3556 Vehicle, lithium ion battery powered.

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 (such as 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. When vehicles are transported in a packaging, some parts of the vehicle, other than the battery, may be detached from their frame to fit into the packaging.

Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries ~~or~~ lithium ion batteries or sodium ion batteries must be assigned to UN 3091 **Lithium metal batteries contained in equipment** or UN 3091 **Lithium metal batteries packed with equipment** or UN 3481 **Lithium ion batteries contained in equipment** or UN 3481 **Lithium ion batteries packed with equipment** or UN 3552 Sodium ion batteries contained in equipment or UN 3552 Sodium ion batteries packed with equipment, as appropriate. Lithium ion batteries ~~or~~ lithium metal batteries, hybrid batteries containing both lithium ion cells and sodium ion cells in accordance with 2:9.3 h or sodium ion batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit must be assigned to UN 3536 **Lithium ion batteries installed in cargo transport unit**, UN 3563 Lithium metal batteries installed in cargo transport unit or Sodium ion batteries installed in cargo transport unit, as appropriate.

Vehicles powered by a fuel cell engine must be assigned to UN 3166 **Vehicle, fuel cell, flammable gas powered** or UN 3166 **Vehicle, fuel cell, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine must be assigned to UN 3166 **Vehicle, flammable gas powered** or UN 3166 **Vehicle, flammable liquid powered**, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it must be assigned to UN 3166 **Vehicle, flammable gas powered**.

UN Model Regulations, Chapter 3.3, SP 393 (see ST/SG/AC.10/52/Add.1):

A216 (393) The nitrocellulose must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN *Manual of Tests and Criteria* Appendix 10. Tests of type 3 (c) need not be applied to dry or unmodified nitrocellulose.

TIs UN

UN Model Regulations, Chapter 3.3, SP 401 (see ST/SG/AC.10/52/Add.1):

A228 (401) Sodium ion cells and batteries with organic electrolyte must be transported as UN 3551 or UN 3552 as appropriate. Sodium ion batteries with aqueous alkali electrolyte must be transported as UN 2795 ~~Batteries, wet, filled with alkali, electric storage~~ Batteries containing metallic sodium or sodium alloy must be carried as UN 3292.

UN Model Regulations, Chapter 3.3, SP 405 (see ST/SG/AC.10/52/Add.1):

A230 (403) Nitrocellulose (NC) membrane filters covered by this entry with NC content not exceeding 53 g/m² and an NC net weight not exceeding 300 g per inner packaging, are not subject to the requirements of these Instructions if they meet the following conditions:

- a) they are packed with paper separators of minimum 80 g/m² placed between each layer of NC membrane filters;
- b) they are packed to maintain the alignment of the NC membrane filters and the paper separators in any of the following configurations:
 - 1) rolls tightly wound and packed in plastic foil of minimum 80 g/m² or aluminium pouches with an oxygen permeability of equal or less than 0.1 per cent ~~according to~~ in accordance with standard ISO 15105-1:2007;
 - 2) Sheets packed in cardboard of minimum 250 g per square metre or aluminium pouches with an oxygen permeability of equal or less than 0.1 per cent ~~according to~~ in accordance with standard ISO 15105-1:2007; or
 - 3) round filters packed in disc holders or cardboard packaging of minimum 250 g per square metre or single packed in pouches of paper and plastic material of total minimum 100 g per square metre.

UN Model Regulations, Chapter 3.3, SP 407 (see ST/SG/AC.10/52/Add.1):

A232 (407) Fire suppressant dispersing devices are articles that contain a pyrotechnic substance, are intended to disperse a fire extinguishing agent (or aerosol) when activated, and do not contain any other dangerous goods. These articles, as packaged for transport, must fulfil the criteria for Division 1.4S, when tested in accordance with test series 6(c) of Section 16 of Part 1 of the UN *Manual of Tests and Criteria*. The device must be transported with either the means of activation removed or equipped with at least two independent means to prevent accidental activation.

Fire suppressant dispersing devices must only be assigned to Class 9, UN 3559, if the following additional conditions are met:

- a) the device meets the exclusion criteria in 2;1.5.2.4 b), c) and d);
- b) the suppressant ~~must be~~ is deemed safe for normally-occupied spaces in compliance with international or regional standards (such as NFPA2010); and
- c) the article ~~must be~~ is packaged in a manner such that when activated, temperatures of the outside of the package ~~must do~~ do not exceed 200°C;

This entry must be used only with the approval of the appropriate national authority of the State of manufacture.

This entry does not apply to UN 3268 **Safety devices**, electrically initiated, described in Special Provision A115.

TIs UN

UN Model Regulations, Chapter 3.3, SP 410 (see ST/SG/AC.10/52/Add.1):

A235 410 Hybrid batteries in conformity with 2.9.3 h) containing both lithium ion cells and sodium ion cells must be assigned to UN 3480, UN 3481 or UN 3536, as appropriate. When such batteries are transported in accordance with Section IB of Packing Instruction 965, Section II of Packing Instruction 967 or Section II of Packing Instruction 968, the watt-hour rating must not exceed 100 Wh and must be marked on the outside case.

UN Model Regulations, Chapter 3.3, SP 411 (see ST/SG/AC.10/52/Add.1):

A236 411 Articles transported under this entry include magnetic resonance imaging (MRI) scanners containing non-flammable, non-toxic gas. The non-flammable, non-toxic gas must be contained within MRI scanner components. The MRI scanners must be designed and constructed to contain the gas and preclude the risk of bursting or cracking of the gas retaining components during normal conditions of transport. MRI scanners are not subject to these Instructions if they contain less than 12 kg of gas in Division 2.2.

UN Model Regulations, Chapter 3.3, SP 412 (see ST/SG/AC.10/52/Add.1):

A237 412 This entry may contain not more than 12% by mass of dimethyl ether.

UN Model Regulations, Chapter 3.3, SP 413 (see ST/SG/AC.10/52/Add.1):

A238 413 Liquid organic hydrogen carriers (LOHC) based on substances classified under this entry with physically dissolved hydrogen may only be transported under this entry when the content of physically dissolved hydrogen does not exceed the limit of 0.5 L(H₂)/kg(LOHC).

UN Model Regulations, Chapter 4.1, 4.1.3 (see ST/SG/AC.10/52/Add.1):

A239 For mixtures assigned to UN 3082 containing less than 1% of substances of highly toxic ingredients with an M factor of 10, 100, or 1000 (as described in 2.9.3.4.6.4 of the UN Model Regulations), plastics drums with removable heads containing quantities of more than 5 litres and not more than 20 litres per packaging are not subject to the performance tests in 6.4 for a transitional period until 31 December 2034, provided the packagings have successfully passed the stacking test in 6.4.6 for plastics drums intended for liquids and meet the general provisions of 4.1, except for 4.1.1.2, and 4.2.

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