



Main Changes made to the
European Agreement Concerning
the International Carriage of
Dangerous Goods by Road (ADR)
2017 Edition

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INTRODUCTION

This report identifies what are considered to be the most significant changes made to the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) for the 2017 edition.

As with each new edition of the ADR, a significant quantity of the amendments to the text have already been published in the UN Recommendations on the Transport of Dangerous Goods - [Model Regulations](#) (19th revised edition, 2015), others have arisen from in-depth discussions at the Joint Meetings of the RID Committee of Experts (transport by rail) and the Working Party on the Transport of Dangerous Goods (transport by road), and others that apply only to the ADR itself arise from discussions at the meetings of the Working Party for the transport of dangerous goods (WP15). Reports from such meetings are accessible on the UNECE website in the [Dangerous Goods](#) section. The changes that arise from the Model Regulations will also be incorporated into the next revisions of the IMDG Code and the ICAO Technical Instructions.

For the most part, minor editorial changes have not been included, unless such editorial changes alter the meaning of the subsection or paragraph to a significant extent. Many of the changes have been made to ensure greater consistency in application among the contracting parties to the agreement and are thus clarifications in the text rather than amendments that alter the actual provisions.

Some significant changes that have been made include the following:

- It was agreed at WP15 to allow the use of **LNG** (Liquefied Natural Gas), **CNG** (Compressed Natural Gas) and **LPG** (Liquefied petroleum gas) as the fuel for vehicles carrying dangerous goods. Various text changes have thus been made to subsections 1.1.3.2, 1.1.3.3, 9.2.4.3 and 9.2.4.4 to accommodate such use.
- **Polymerising substances** have been added to the list of substances in **Class 4.1**
- A new lithium battery mark and Class 9 hazard label has been added in Section 5.2
- Provisions for a new type of container called a **flexible bulk container, BK3**, have been introduced in Chapters 6.11, 7.3 and 7.5.
- On foot of a substantial amount of work carried out by an informal working group of WP15, there has been a complete revamp of the requirements for the **electrical system of vehicles** in Chapter 9.2, including the introduction of a more logical grouping of the requirements of the electrical system.

The provisions of the ADR 2017 are applicable from 1 January 2017 and will become mandatory by means of national regulations on 1 July 2017. Details of all amendments made to Annexes A and B of the ADR adopted by the Working Party are available in the report [ECE/TRANS/WP.15/231](#) along with the relevant addenda and corrigenda. Articles detailing many of the changes and how they may affect industry are also available in various issues of the Hazardous Cargo Bulletin (HCB) throughout 2016.

Note: Throughout the text, when reference is made to 'Table A', it can be taken to mean 'Table A of Chapter 3.2'.

Part 1: General Provisions

Chapter 1.1 Scope and applicability

Exemptions related to the carriage of gases (ADR 1.1.3.2) and liquid fuels (ADR 1.1.3.3):

Sub-section 1.1.3.2 (a) had been amended to include provisions for the amount of gaseous fuel which can be carried in fixed fuel tanks or cylinders, when such gases are performing a transport operation or for the operation of its equipment used during carriage.

This amended wording reflects the wording provided in sub-section 1.1.3.3 (a) relating to the carriage of liquid fuels.

Notes have been added in sub-section 1.1.3.2 (a) and sub-section 1.1.3.3 (a) to clarify the calculations for and ensure that the total capacity of the fuel tanks does not exceed the amount of energy (MJ) or mass (Kg) corresponding to 54 000 MJ energy-equipment. Also included in the exemption are the fuels necessary to operate equipment fitted for use during carriage, i.e. equipment that is fitted in containers and secured on the vehicle.

Note: *The amendments to subsection 1.1.3.2 and 1.1.3.3 were rendered necessary resulting from agreement at WP15 to include LPG, LNG (liquefied natural gas) and CNG (compressed natural gas) as fuels for vehicles carrying dangerous goods. See also amendments to Section 9.2, Construction of Vehicles, Prevention of Fire risks for more detail.*

Small load exemption

Under the small load exemption 1.1.3.6, and specifically in the table in paragraph 1.1.3.6.3, amendments have been made to the second column for Transport Categories 2, 3 and 4 (some amendments to the text and some new UN numbers have been added - it is recommended that you check to see if any of these UN numbers apply to your operations).

Chapter 1.2 Definitions

The address under the definition of “CGA”, Compressed Gas Association, has been updated.

The definition of “cargo transport unit” has been amended, as has the definition of “maximum working pressure (gauge pressure)”.

The following **new definitions** have been added:

- “flexible bulk container” has been added under the definition of “bulk container”
- “Compressed Natural Gas (CNG)”
- “Design life”
- “holding time”
- “loading”
- “Liquefied Natural Gas (LNG)”
- “self-accelerating polymerization temperature (SAPT)”
- “Service life”
- “unloading”

Chapter 1.4 Safety obligations of the participants

A new paragraph has been added in subsection 1.4.2.2.6 to ensure that the carrier provides the vehicle crew with the instructions in writing.

Chapter 1.6 Transitional Measures

Deleted transitional measures

A number of transitional measures have been deleted at the end of their transition period:

- 1.6.1.20 in relation to dangerous goods packed in limited quantities
- 1.6.1.28 accreditations in accordance with EN ISO/IEC 17020:2004 for the purposes of certain provisions no longer recognised
- 1.6.1.31 in relation to the size of letters on overpacks
- 1.6.1.32 in relation to the size of letters on salvage packagings and salvage pressure receptacles
- 1.6.3.40 and 1.6.4.41 relating to the tank codes for substances that are toxic by inhalation
- 1.6.4.19 due to expiry of the transitional measure which allowed the continued use of tank containers with tank code L1.5BN for the carriage of certain substances of class 3, PGI
- 1.6.4.36 for substances assigned portable tank instruction TP37 in column (11) of Table A

New transitional measures

New **general** transitional measures 1.6.1.38 to 1.6.1.43 have been added in relation to:

- Training certificates for DGSA's applicable to 31 Dec 2016, which may continue to be issued until 31 Dec 2018, and may continue in use to the end of their 5 year validity
- The requirements of special provision 188 relating to lithium cells or batteries in force up to 31 Dec 2016, which may continue to apply until 31 Dec 2018
- Labelling requirements for articles of UN Nos. 0015, 0016 and 0303 containing smoke-producing substances toxic by inhalation
- The continued use until 31 Dec 2022 of special packaging provision L2 of packing instruction LP02 applicable until 31 Dec 2016 for aerosols (UN 1950)
- The Class 9 labelling requirements for lithium cells and batteries (UN Nos. 3090, 3091, 3480 and 3481), which may continue to be used until 31 Dec 2018
- Vehicles defined in special provisions 240 (amended), 385 (new) and 669 (new), brought into service before 1 July 2017 and carried as a load

The following new transitional measures in relation to **tanks and tank containers** have been added:

- 1.6.3.46 to allow the continued use of fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2017 and not in conformance with the requirements of 6.8.2.1.23
- 1.6.4.47 to allow the continued use, until the next inspection after 1 July 2017, of tank containers for refrigerated liquefied gases constructed before 1 July 2017 and not in conformance with the requirements of 6.8.3.4.10, 6.8.3.4.11 and 6.8.3.5.4
- 1.6.4.48 to allow the continued use of tank containers constructed before 1 July 2017 and not in conformance with the requirements of 6.8.2.1.23

To reflect the changes in Chapters 9.1 and 9.2, five new **vehicle** transitional measures, 1.6.5.16 to 1.6.5.20 have been added in relation to:

- EX/II, EX/III, FL and OX vehicles registered before 1 April 2018
- Vehicles registered or entering into service before 1 April 2018 which do not comply for cables of sub-section 9.2.2.2.1
- OX vehicles registered or entering into service before 1 April 2018 used for the carriage of UN No. 2015 (aq. hydrogen peroxide)
- the annual technical inspection of OX vehicles registered or entering into service before 1 April 2018
- certificates of approval for OX vehicles

Amended transitional measures

A number of transitional measures have been amended:

- 1.6.1.25 to limit the provisions of the transitional measure to those for cylinders of 60 litres water capacity or less, which may continue to be used no later than 30 June 2018
- 1.6.1.30 to limit the provisions of the transitional measure to labels not meeting the requirements of 5.2.2.2.1.1, which may continue to be used until 30 June 2019

Chapter 1.8 Safety Adviser

Various editorial amendments have been made in section 1.8.3, the most significant being in subsection 1.8.3.12.

Paragraph 1.8.3.12.2 has been expanded to include more specific provisions for invigilation of examinations by competent authorities or their designates, authentication of candidates, and record keeping.

A new paragraph 1.8.3.12.5 has been added to include detailed conditions for the performance of examinations electronically, which may be recorded and evaluated using electronic data processing (EDP) processes.

Note: *Similar amendments have been made in Chapter 8.2 w.r.t. the training of the vehicle crew.*

Chapter 1.9 Tunnel restrictions

Some editorial amendments have been made to paragraph 1.9.5.2.2 for Tunnel categories D and E as follows:

- Tunnel category D, amendments to the first row of the table,
- Tunnel category E, text simplified and clarified by removing the list of UN numbers which are not restricted in category E tunnels and replacing such list with ‘those for which ‘(-)’ is marked in column (15) of Table A’.

Part 2: Classification

Chapter 2.1 Classification – general provisions

2.1.1.1 **Polymerising substances** have been added to the general list of substances in Class 4.1.

Subsection 2.1.2.2 has been amended to refer to specific conditions of classification as provided in a new subsection 2.1.2.8 provided below.

A **new subsection 2.1.2.8** has been added to include provisions for consignors who, on the basis of test data, determine that a substance that is listed by name in Table A meets classification criteria for a class that is not identified in column 3a or 5. Such consignors may consign the substance with the approval of the CA subject to certain conditions. A reference is made to a new paragraph 5.4.1.1.20 to ensure that such consignments carried out under CA approval are mentioned in the transport document.

Two **new entries** have been added to the list of Class 9 substances in paragraph 2.1.3.4.2:

- UN No.3151 halogenated monomethyldiphenylmethanes, liquid
- UN NO. 3152 halogenated monomethyldiphenylmethanes, solid

The footnote for paragraph 2.1.3.5.5 referring to the pertinent environmental legislation in force has been updated.

Chapter 2.2 Class specific provisions

ADR 2.2.1 Class 1 Explosives

Some editorial changes have been made in subsection 2.2.1.1, the most significant of which are as follows.

2.2.1.1.7 Assignment of fireworks to divisions:

The text has been reorganised in paragraph 2.2.1.1.7.1., with the addition of a new subparagraph (a) in relation to ‘waterfalls’.

A new entry for ‘Waterfall’ has been added to the table in paragraph 2.2.1.1.7.5, which is defined as ‘pyrotechnic fountain intended to produce a vertical cascade or curtain of sparks’.

A new paragraph 2.2.1.1.9 has been added to provide a new set of provisions for ‘classification documentation’, including a detailed list of examples of the information that may be provided in the classification documents.

ADR 2.2.2 Class 2 Gases

2.2.2.2 Gases not accepted for carriage

Paragraph 2.2.2.2.1 has been amended to permit the carriage of chemically unstable gases in accordance with special packing provision (r) of packing instruction P200 (10) of 4.1.4.1, and to refer to new special provision 386 (see later under Chapter 3.3) which provides the precautions necessary to prevent polymerisation.

List of collective entries

On the list of collective entries in subsection 2.2.2.3, under ‘other articles containing gas under pressure’, four new rows have been added for UN No. 3529, to reflect the new entry in Table A for UN No. 3529 for gas powered engines and machinery.

ADR 2.2.3 Class 3 Flammable Liquids

The text has been reorganised in paragraph 2.2.3.1.5, with the addition of a new 2.2.3.1.5.2 for the conditions under which viscous liquids which are also environmentally hazardous can be excluded from the other provisions of ADR.

Paragraph 2.2.3.2.2 has been amended to refer to new special provision 386 (see later under Chapter 3.3) which provides the precautions necessary to prevent polymerisation.

List of collective entries

The list of collective entries in subsection 2.2.3.3 has been amended to include four new entries under ‘F3 articles’ for UN No. 3528, to reflect the new entry in Table A for UN No. 3528 for flammable liquid powered engines and machinery.

ADR 2.2.41 Class 4.1 Polymerising substances (new)

The heading has been amended to include ‘polymerising substances’.

Various editorial amendments have been made to subsections 2.2.41.1.1 and 2.2.41.1.2 to include polymerising substances (PM), with the introduction of two new subdivisions under Class 4.1.; PM1 (not requiring temperature control) and PM2 (requiring temperature control).

A new subdivision F4, for ‘articles’, has been added to the subdivision for ‘flammable solids, without subsidiary risk’.

Two new paragraphs 2.2.41.1.20 and 2.2.41.1.21 have been added to provide ‘definitions and properties’ and ‘temperature control requirements’ relating to polymerising substances.

The list of collective entries in subsection 2.2.41.3 has been amended to include arms for F4, PM1 and PM2.

ADR 2.2.52 Class 5.2 Organic Peroxides

The table in 2.2.52.4 has been amended as indicated below:

<i>Organic peroxide</i>		<i>Column</i>	<i>Amendment</i>
DIBENZOYL PEROXIDE	(first row)	Concentration (%)	Replace ">51 – 100" by ">52 – 100"
tert-BUTYL CUMYL PEROXIDE	(first row)	Number (Generic entry)	Replace "3107" by "3109"
DICETYL PEROXYDICARBONATE	(first row)	Packing Method	Replace "OP7" by "OP8"
DICETYL PEROXYDICARBONATE	(first row)	Number (Generic entry)	Replace "3116" by "3120"
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(first row)	Concentration (%)	Replace ">32-100" by ">37-100"
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(third row)	Concentration (%)	Replace "≤ 32" by "≤37"
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(third row)	Diluent type B (%)	Replace "≥ 68" by "≥ 63"

ADR 2.2.61 Class 6.1 Toxic Substances

Paragraph 2.2.61.1.14 has been amended to refer to the CLP Regulation (EC) No. 1272/2008 and remove references to legislation which has been repealed.

Paragraph 2.2.61.2.1 has been amended to refer to new special provision 386 (see later under Chapter 3.3) which provides the precautions necessary to prevent polymerisation.

ADR 2.2.62 Class 6.2 Infectious Substances

Note 1 in paragraph 2.2.62.1.1 has been amended to include a note in relation to the carriage of unintentionally or naturally infected live animals.

Intentionally infected live animals are provided for in paragraph 2.2.62.1.12.1, which has been amended to remove the footnote and to include a note regarding competent authority approval.

ADR 2.2.8 Class 8 Corrosive Substances

Paragraph 2.2.8.1.9 has been amended to refer to the CLP Regulation (EC) No. 1272/2008 and remove references to legislation which has been repealed.

Paragraph 2.2.8.2.1 has been amended to refer to new special provision 386 (see later under Chapter 3.3) which provides the precautions necessary to prevent polymerisation.

ADR 2.2.9 Class 9 Miscellaneous dangerous substances and articles

The first paragraph of 2.2.9.1.7 has been replaced by a new more simplified text, and the last note has been deleted (on account of amendments to the Dangerous Goods List, i.e. amendments to UN 3166 and 3171 and new entries UN 3528 and 3529).

The notes in paragraph 2.2.9.1.11 on genetically modified microorganisms or organisms have been amended; note 2 with regard to the associated footnote, and a new note 3 has been added in relation to genetically modified live animals, which are not subject to the provisions of ADR if they have no known pathogenic effect on humans, animals and plants and are carried in suitable receptacles.

The list of miscellaneous substances assigned to class 9 in 2.2.9.1.14 has been amended to include 'engines and machinery, internal combustion (to reflect new entry in Table A, UN No. 3530) and to delete in the note the entries for flammable liquid powered and flammable gas powered vehicles UN 3166 and 3171, which had previously been exempt but are now subject to the provisions of ADR.

The list of entries in 2.2.9.3 has been amended to include in M2, entries for halogenated monomethyldiphenylmethanes (UN 3151 and UN 3152) and in M11, entries for flammable liquid powered and flammable gas powered vehicles (UN 3166 and 3171) and internal combustion engines and machinery (UN 3530).

Part 3: Dangerous Goods List, Special Provisions, LQ and EQ

Chapter 3.1 General

3.1.2 Proper shipping name:

Some editorial amendments have been made to subsection 3.1.2.6 and 3.1.2.6(a) in relation to substances that require **temperature control**, including a reference to the self-accelerating polymerization temperature (SAPT) newly defined in 1.2.1, and a reference to associated special provisions including the new special provision 386 of Chapter 3.3 which provides the precautions necessary to prevent polymerisation.

Chapter 3.2 Dangerous Goods List

In section 3.2.1, some editorial amendments have been made to the description for column (17), "special provisions for carriage in bulk".

As is generally the case, a significant number of changes have been made to the dangerous goods list, including **9 new entries**, and in addition there have been various amendments to existing entries, which are provided below under the headings 'changes to proper shipping names' and 'miscellaneous changes'.

New Entries

Rocket Motors

A new entry has been added for UN 0510, ROCKET MOTORS, Class 1, and classification code 1.4C.

Polyester Resin Kit

A new entry has been added for UN No. 3527 POLYESTER RESIN KIT, solid base material, 4.1, PGs II and III, is accompanied by amended special provision 236 (amended to include class 4.1 for such kits) and a new packing instruction P412 has been drawn up specifically for this entry (see Chapter 4.1).

Engines and machinery

Three new entries, UN Nos. 3528 to 3530, have been added for various types of engines and machinery:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)
3528	ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED	3			3	363 667 669	0	E0	P005
3529	ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED	2			2.1	363 667 669	0	E0	P005
3530	ENGINE, INTERNAL COMBUSTION or MACHINERY, INTERNAL COMBUSTION	9			9	363 667 669	0	E0	P005

All of these entries are accompanied by amended special provision 363 and new special provisions 667 and 669 in Chapter 3.3.

Polymerising substances

Four new entries, UN Nos. 3531 to 3534, have been added for various types of polymerising substances

- Solid, stabilised, UN No. 3531
- Liquid, stabilised, UN No. 3532
- Solid, temperature controlled, UN No. 3533
- Liquid, temperature controlled, UN No. 3534

All belong to Class 4.1, with new classification codes PM1 for the stabilised substances not requiring temperature control and PM2 for the temperature controlled substances. All have associated with them a new special provision 386 (see later under Chapter 3.3) which provides the precautions necessary to prevent polymerisation. The polymerizing solids are subject to packing instruction P002 and new special packing provision PP92 to ensure the packagings are designed and constructed to release gas and vapour to prevent the build-up of pressure. The polymerizing liquids are subject to packing instruction P001 and new special packing provision PP93, again to ensure the packagings are designed and constructed to release gas and vapour to prevent the build-up of pressure. Similarly, the relevant IBC packing instructions IBC07 (solid substances) and IBC03 (liquid substances) have associated new special packing provisions B19 and B18 respectively.

Amended Entries

Proper shipping name (PSN) changes

The proper shipping name for UN Nos. 3151 and 3152 have been amended to

- POLYHALOGENATED BIPHENYLS, LIQUID or HALOGENATED MONOMETHYLDIPHENYLMETHANES, LIQUID or POLYHALOGENATED TERPHENYLS, LIQUID, and
- POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYLDIPHENYLMETHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID.

Vehicles and Equipment

The entries for UN Nos. 3166 and 3171 have been amended to

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a) to (20)
3166	VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED	9	M11			312 385 666 667 669	
3171	BATTERY POWERED VEHICLE or BATTERY POWERED EQUIPMENT	9	M11			240 666 667 669	

These two entries had previously not been subject to ADR. UN No. 3166 had previously included internal combustion engines, flammable gas powered and flammable liquid powered fuel cell engines. These have however, been given their own new entries UN Nos. 3528 to 3530, see above under ‘new entries’.

These amended entries for UN Nos. 3166 and 3171 have various amended and new special provisions associated with them; for UN No. 3166, amended special provision 312 and new special

provisions 385, 666 667 and 669, and for UN No. 3171, amended special provision 240 and new special provisions 666, 667 and 669, see Chapter 3.3 Special Provisions.

Miscellaneous Changes

A new row has been added for UN Nos. 0015, 0016 and 0303 (AMMUNITION, SMOKE) to include ammunition, smoke that contains toxic by inhalation substances, with the code for the label in column (5) provided as 1 (+6.1) accordingly.

Chapter 3.3 Special Provisions

A total of **11 new special provisions** have been added to this chapter, and there have been many substantial and editorial amendments. Details regarding new and substantially amended special provisions are provided below according to the relevant substances or groups of substances, and some miscellaneous new and amended special provisions are provided under ‘miscellaneous new special provisions and special provision changes’.

Vehicles and equipment (UN Nos. 3166 and 3171)

Special provision 240 has been amended essentially to move the text in relation to battery powered vehicles and equipment (**UN No. 3171**) from the note at the end of 2.2.9.1.7 to the body of the special provision. This provision provides a definition of the vehicles to which it applies, and gives examples of different types of vehicles and equipment included in the definition. Dangerous goods which they contain that are necessary for their operation or the operation of their equipment are not generally subject to the requirements of ADR, with the exception of lithium batteries which must meet the requirements of 2.2.9.1.7.

Special provision 312, previously reserved, applies to vehicles assigned to entry **UN 3166**, i.e.

- Vehicles which contain an internal combustion engine, including **hybrid electric vehicles** powered by both an internal combustion engine with wet batteries, sodium batteries, lithium metal or lithium ion batteries (carried with the batteries installed), and
- Vehicles which contain a **fuel cell**, and to hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal or lithium ion batteries (carried with batteries installed).

A **new special provision 385** has been added to apply to vehicles assigned to entry **UN 3166**. This provision provides a definition of the vehicles to which it applies, and gives examples of different types of vehicles included in the definition. Dangerous goods which they contain that are necessary for their operation or the operation of their equipment are not generally subject to the requirements of ADR, with the exception of lithium batteries which must meet the requirement of 2.2.9.1.7.

A **new special provision 666** has been added for vehicles assigned to UN Nos. 3166 and 3171 when carried as a load, which are not subject to the provisions of ADR provided certain conditions are met.

A **new special provision 667** provides conditions under which the requirements of 2.2.9.1.7 will not apply to lithium cells or batteries in the vehicle ((see below under ‘Lithium cells and batteries’)).

A **new special provision 669** has been added to include in this classification (UN Nos. 3166 and 3171), trailers fitted with equipment (powered by liquid or gaseous fuel or by electric energy storage

and production system) intended for use during carriage, provided that the trailer and equipment are carried as a load and subject to certain quantity limits for the fuel tanks.

Engines and machinery (UN Nos. 3528, 3529 and 3530)

Special provision 363 has been amended to clarify which types of engine or machinery the provision applies, i.e. those **powered by fuels** classified as dangerous goods via internal combustion systems or fuel cells and present in quantities above those specified in column (7a) of Table A.

The special provision lists the conditions under which the engines and machinery are not subject to any other requirements of ADR, such as when they are empty of liquid or gaseous fuel and do not contain any other dangerous goods. Dangerous goods which the engines or machinery contain that are necessary for their functioning or safe operation are not generally subject to the requirements of ADR, with the exception of lithium batteries which must meet the requirements of 2.2.9.1.7 except where provided for in special provision 667, below.

New special provision 667, mentioned above for vehicles, provides conditions under which the requirements of 2.2.9.1.7 will not apply to lithium cells or batteries in the engine or machinery (see below under 'Lithium cells and batteries').

New special provision 669 provides that trailers fitted with equipment intended for use during carriage, provided that the trailer and equipment are carried as a load and subject to certain quantity limits for the fuel tanks, shall be assigned to UN Nos. 3166 and 3171 (see above).

Polyester Resin Kits

Special provision 236 has been amended to include Class 4.1 in the base material, and reflects the new entry in Table A, UN No. 3527, POLYESTER RESIN KIT, solid base material.

Lithium Cells and Batteries

Special provision 188 has been amended to remove part (g) and to include a new paragraph at the end to clarify what is meant by a single cell battery.

Special provision 310, which applies to the testing requirements for particular production runs of lithium cells and batteries, has been amended to refer to **new packing instruction P910 of 4.1.4.1**, provisions for the transport document for such production runs, and cross references to other special provisions for damaged and defective cells and batteries and those carried for disposal or recycling.

The last sentence of **special provision 376**, in relation to damaged or defective lithium cells and batteries, has been amended to allow a competent authority of an ADR contracting party to recognise an approval (for conditions of carriage of the batteries) provided by a competent authority of a country which is not an ADR contracting party so long as the approval has been granted in accordance with the correct procedures applicable in ADR, RID, ADN, IMDG Code or ICAO Technical Instructions.

Special provision 636(b), for the carriage of lithium cells and batteries up to the intermediate processing facility, has been amended to provide for lithium cells and batteries contained in equipment from **private households**. A definition of what is meant by 'equipment from private households' is provided by means of a note. Subparagraph (iii) has been amended to provide for the marking of equipment containing lithium cells and batteries that is carried unpackaged.

New special provision 667 provides conditions under which the requirements of 2.2.9.1.7 will not apply, i.e.

- a) When pre-production prototype lithium cells and batteries are installed in a vehicle, engine, or machinery
- b) When the lithium cells or batteries are installed in damaged or defective vehicles, engines or machinery, subject to specific conditions.

Radiation Detectors

New special provision 378 provides the conditions under which radiation detectors containing gases in non-refillable pressure receptacles, not conforming to Chapter 6.2 and packing instruction P200, can be carried. If the capacity of the detector receptacles is below 50ml, and the detectors meet the listed conditions, they are not subject to any other requirements of ADR.

Polymerising Substances

New special provision 386 provides the conditions for carriage of substances when they are stabilised by temperature control. Such temperature control may be required when chemical stabilisation becomes ineffective at lower temperatures within the anticipated duration of carriage. The factors that must be taken into consideration for making this determination are provided.

Miscellaneous new special provisions and special provision changes

Special provision 317 has been amended to provide a new reference to define as to what is meant by 'fissile-excepted' for fissile material and packages.

The first and third paragraphs of **special provision 369** have been amended to cover radioactive material with both toxic and corrosive properties, which now will be classified as Class 6.1 with radioactivity and corrosivity subsidiary risks.

New special provision 379 lists the conditions under which anhydrous ammonia adsorbed or absorbed in a solid contained in ammonia dispensing systems or receptacles can be carried without being subject to the provisions of ADR.

New special provision 382 refers to the test, contained in the Manual of Tests and Criteria, Part III, sub-section 38.4.4 (polymeric beads, expandable) which can be used when de-classification of certain polymeric beads is considered.

New special provision 383 applies to table tennis balls manufactured from celluloid, which can be exempted from the provisions of the ADR when the mass of each ball does not exceed 3.0g and the total net mass of each package does not exceed 500g.

Special provision 581, in relation to mixtures of propadiene and methylacetylene, has been amended to display the chemical content limits by volume by means of a table, to improve clarity.

Special provision 655 has been amended to include reference to Directive 2014/68/EC related to the making available on the market of pressure equipment (PED).

A **new special provision 665** has been added for the carriage of unground hard coal, coke and anthracite, which when meeting the classification criteria of Class 4.2, PGIII, is not subject to the requirement of ADR.

New special provision 668 applies to elevated temperature substances for the purposes of applying road-markings, which are not subject to ADR provided that certain conditions are met.

Chapter 3.4 Limited Quantities

Section 3.4.11 has been amended to clarify the provisions regarding the **use of overpacks** containing dangerous goods packaged in limited quantities.

Section 3.4.15 has been amended to include the requirement to remove or cover the marks specified in 3.4.13 when goods in limited quantities are no longer being carried.

Chapter 3.5 Excepted Quantities

Section 3.5.2 (b) has been amended to clarify the text regarding the different layers of packaging and use of cushioning and absorbent material for liquid dangerous goods packaged in excepted quantities.

Section 3.5.4.3 has been amended to clarify the provisions regarding the **use of overpacks** containing dangerous goods packaged in excepted quantities.

Part 4: Packing and Tank Provisions

Chapter 4.1 Packing provisions – use of packagings

Paragraph 4.1.1.20.2, in relation to the use of salvage pressure receptacles, has been amended to introduce a quantity limit (water capacity of 1000 litres) with regard to the placed pressure receptacle(s).

New packing instructions

The following new packing instructions have been added to subsection 4.1.4.1:

P005 applies to engines and machinery with newly assigned UN Nos. 3528, 3529 and 3530.

P412 applies to polyester resin kits assigned to new UN No. 3527.

P910 applies to lithium cell and battery (UN Nos. 3090, 3091, 3480 and 3481) production runs of not more than 100 cells or batteries or pre-production prototypes that are carried for testing.

Miscellaneous amendments to packing instructions

P001 has been amended to include a new special packing provision **PP93** which applies to packagings for **liquid polymerising substances** (UN Nos. 3532 and 3534), which must be designed and constructed to permit the release of gas or vapour to prevent the build-up of pressure in the event of loss of stabilisation.

Similarly, **P002** has been amended to include a new special packing provision **PP92** to prevent the build-up of pressure in packagings for **solid polymerising substances** (UN Nos. 3531 and 3533) in the event of loss of stabilisation.

Special packaging provision **PP48**, associated with **P112 (c)**, **P114 (b)** and **P406**, has been amended to include a new last sentence to clarify what is meant by metal packagings.

Packing instruction **P200** has been amended in several sections, as follows:

- The note in P200 (3) (d)
- The text of P200 (3) (f)
- P200 (5) – new subparagraph (e) added for calculating the internal pressure in the pressure receptacle for liquefied gases charged with compressed gases
- P200 (7)(a) – editorial amendments
- Last paragraph of P200 (9)
- P200 (10), special provisions p and u amended to update references to standards
- P200 (11) – five new rows added to the table, referencing ISO standards, and the last two rows were deleted
- P200 Table 2, special packing provision z added for UN No. 1058
- P200 Table 3, line corresponding to UN No. 1790 deleted

Packing instruction **P206 (3)** for chemicals under pressure (UN Nos. 3500 to 3505) has been amended to include provisions for calculating the internal pressure in the pressure receptacle for liquids charged with compressed gases.

Packing instruction **P502**, special packing provision **PP28**, has been amended to clarify the text for packagings suitable for the carriage of perchloric acid, UN No. 1873.

Packing instruction **P906 (1)** and **(2)** has been amended to update/clarify the list of chemicals concerned (PCBs etc.).

IBCs and Large Packagings

Various minor editorial amendments have been made to the packaging provisions for IBCs (ADR 4.1.4.2) and large packagings (ADR 4.1.4.3), and the more significant amendments are listed below.

IBC03 has been amended to include a new special packing provision **B19** which applies to IBC packagings for liquid polymerising substances (UN Nos. 3532 and 3534), which must be designed and constructed to permit the release of gas or vapour to prevent the build-up of pressure in the event of loss of stabilisation.

IBC07 has been amended to include a new special packing provision **B18** to prevent the build-up of pressure in packagings for solid polymerising substances (UN Nos. 3531 and 3533) in the event of loss of stabilisation.

IBC520 for organic peroxides and self-reactive substances of type F, has been amended to include two new entries, under UN Nos. 3109 and 3119 respectively, and a new row has been added in the entry for 'Di-(2-ethylhexyl) peroxydicarbonate, not more than 62%, stable dispersion, in water.

A **new large packing instruction, LP200**, has been added for UN No. 1950, aerosols, with special packing provision L2.

Chapter 4.3 Use of ADR tanks

4.3.2 Provisions applicable to all classes

A new sub-paragraph 4.3.2.3.7 has been added to clarify the deadlines for use of fixed tanks (tank-vehicles), demountable tanks, battery-vehicles, tank containers, tank swap bodies and MEGCs in relation to the dates of periodic inspection.

4.3.3 Special provisions applicable to class 2

A new sub-section 4.3.3.5 has been added for the determination of the actual holding time for each journey for tank-containers carrying refrigerated liquefied gas, and the conditions under which tank containers cannot be offered for carriage.

4.3.4 Special provisions applicable to classes 1 and 3 to 9

Special provisions for tanks (tank codes) have been added in subsection 4.3.4.1.3(b) for both solid and liquid polymerizing substances, UN Nos. 3531 and 3533, and for UN Nos. 3532 and 3534, respectively (Class 4.1).

4.3.5 Special provisions

Editorial amendments have been made to special provisions TU16 and TU21 to clarify the conditions under which **protective agents** (nitrogen or water or mixtures of both) may be used in empty uncleaned tanks and for the protection of the substance, respectively.

Part 5: Consignment Procedures

Chapter 5.1 General Provisions

The **overpack provisions** of subsection 5.1.2.1 (a) have been amended to provide additional clarification in the text in relation to the application of the 'OVERPACK' mark, and to clarify the provisions for applying additional labelling and marking.

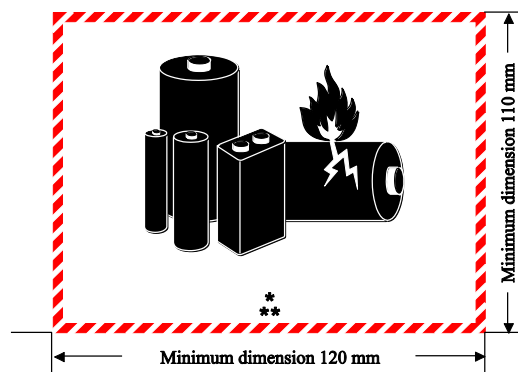
Some editorial amendments have been made to the table in subsection 5.1.5.5, summary of approval and prior notification requirements for radioactive material of Class 7, and two new rows have been added.

Chapter 5.2 Marking and Labelling

Lithium battery mark

A new subsection 5.2.1.9 has been added for the **lithium battery mark**, which is further subdivided into 5.2.1.9.1 and 5.2.1.9.2, which provides for the inclusion of the relevant UN number(s) in the mark. Subsequent subsections have been renumbered accordingly.

Figure 5.2.1.9.2



Lithium battery mark

* Place for UN number(s)

** Place for telephone number for additional information

The mark shall be in the form of a rectangle with hatched edging. The dimensions shall be a minimum of 120 mm wide x 110 mm high and the minimum width of the hatching shall be 5 mm. The symbol (group of batteries, one damaged and emitting flame, above the UN number for lithium ion or lithium metal batteries or cells) shall be black on white. The hatching shall be red. If the size of the package so requires, the dimensions/line thickness may be reduced to not less than 105 mm wide x 74 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown.”.

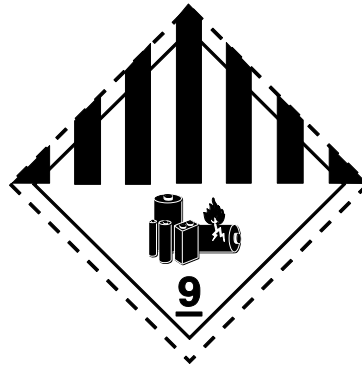
Provisions for labels

A new note has been added to subsection 5.2.2.2.1.2 after the first paragraph, to allow reduced sized labels to be displayed on the cylindrical part of cylinders for Class 2 if the diameter of the cylinder is too small to permit it on the non-cylindrical upper part.

New class 9 label

A new paragraph has been added after subparagraph (c) in subsection 5.2.2.2.1.3 to provide a description of what must be included in the upper half and the lower half of label model No. 9A (below).

A new label has been added in subsection 5.2.2.2.2 for **CLASS 9 HAZARD**, as follows:



(No.9A)

Symbol (seven vertical black stripes in upper half; battery group, one broken and emitting flame in lower half): black; Background: white; Figure “9” underlined in bottom corner”.

Chapter 5.3 Placarding and marking

A new subsection 5.3.1.1.4 has been added to provide for placarding which corresponds to label model No. 9 of 5.2.2.2.2, with the provision that **label model No. 9A shall not be used** for placarding purposes.

A new sentence has been added to the end of 5.3.1.2 to clarify that when tank containers or portable tanks have multiple compartments, and all have to bear the same placard, then only one placard along each side and at each end is required.

New sentences have been added to 5.3.3 and 5.3.6.2 to allow a reduction of the dimensions of, respectively, the elevated temperature substance placard and environmentally hazardous substance placard, for tank containers or portable tanks with a capacity of not more than 3000 litres.

Chapter 5.4 Documentation

A new indent has been added to 5.4.1.1.1(c) to indicate how the class number for lithium batteries must be displayed on the transport document.

The last paragraph of 5.4.1.1.6.2.1 has been amended to clarify what information is required on the transport document for **empty packagings**, uncleaned, which contain residues of dangerous goods, in particular the information required in 5.4.1.1.1.(c).

ADR 5.4.1.1.11 has been amended to be more inclusive as to what the provision relates to, i.e. special provisions for the carriage of **IBCs, tanks, battery-vehicles, portable tanks and MEGCs** after the date of expiry of the last periodic inspection.

A new paragraph 5.4.1.1.20 has been added to ensure that the transport document includes a reference to dangerous goods that are classified in accordance with **ADR 2.1.2.8** (see Chapter 2.1, classification, general provisions).

A new paragraph 5.4.1.1.21 has been added to ensure, for the carriage of **engines and machinery** classified as UN Nos. 3528, 3529 and 3530, that the transport document contains a statement to indicate that such carriage is in accordance with **special provision 363** of Chapter 3.3.

Editorial amendments have been made to Note 2 and the footnote in 5.4.1.2.1, special provisions for Class 1.

Two new subparagraphs (c) and (d) have been added to the additional provisions for Class 2, ADR 5.4.1.2.2, the first reserved and the second to indicate the expiry date of the holding time for refrigerated liquefied gases carried in tank-containers.

ADR 5.4.1.2.3 has been amended to include ‘polymerising substances’ in the title and in the subsequent text of 5.4.1.2.3.1, including a reference to new paragraph 2.2.41.1.21 on temperature control requirements for polymerising substances.

Some editorial amendments have been made throughout the text of ADR 5.4.2 on container/vehicle packing certificates, including the text in the footnotes.

Instructions in Writing

The model instructions in writing in ADR 5.4.3.4 have been amended to include a reference to ‘polymerising substances’ in the description of the hazards of label 4.1 in column 1, and to include the **new danger model number 9A** for lithium batteries, along with some other minor editorial amendments.

Note that there is **no transitional measure** in relation to these amendments and so all instructions in writing provided to drivers and vehicle crew will need to be in compliance with ADR 2017 by 1 July 2017.

A new paragraph 5.4.3.5 has been added to instruct Contracting Parties to provide the official translation of the instructions in writing in their national languages to the UNECE Secretariat, who will in turn make all language versions available to all Contracting Parties.

Chapter 5.5 Special Provisions

Significant changes have been made to Section 5.5.3 on special provisions applicable to packages and containers containing substances presenting a **risk of asphyxiation**. Among various editorial amendments, the following three paragraphs have been amended:

5.5.3.1.1 – to clarify the provisions in this paragraph in relation to dry ice (UN No. 1845)

5.5.3.3.3 – to distinguish the provisions for vehicles and containers that are **well ventilated** (where marking in accordance with 5.5.3.6 is not required) from those for vehicles and containers where **ventilation is not required** (where marking according to 5.5.3.6 is required). A new note provides a definition of what is meant by “well ventilated”, with specific concentration limits.

5.5.3.6.1 – to clarify that marking is required for vehicles that are not well ventilated, and to embellish on the precautions that must be taken as long as the vehicle is marked, including the requirement for training of those persons who will carry out the evaluation of the adequacy of the ventilation.

Part 6: Requirements for Construction and Testing of Packagings, Tanks and Bulk Containers

Chapter 6.2 Construction and testing of pressure receptacles

UN Pressure Receptacles

The table in 6.2.2.1.1 has been amended to include a new entry for ISO 9809-4:2014, to update the entry for ISO 7866:2012, and to replace the three last entries with six replacement entries. Note 2 has been amended to update the provisions for **composite cylinders** with a design life of more than 15 years.

Four new entries have been added to the table in 6.2.2.1.2 (UN tubes), and two new notes have been added to include provisions for **composite tubes** with a design life of more than 15 years.

One new row has been added to the table in 6.2.2.1.3 (acetylene cylinders), to include ISO 3807:2013.

New entries have been added to the tables in 6.2.2.2 (materials), 6.2.2.3 (service equipment) and 6.2.2.4 (periodic inspection and test).

In subsection 6.2.2.7.4 relating to the marking of UN pressure receptacles, **two new manufacturing marks** have been added [sub-paragraphs (q) and (r)] and an associated note, the former for composite cylinders and tubes having a limited design life, and the latter those have with a design life greater than 15 years or a non-limited design life. Such marks must appear adjacent to the periodic inspection and test marks of 6.2.2.7.7, in accordance with 6.2.2.7.5, first indent.

Non-UN Pressure Receptacles

Two new notes have been added to 6.2.3.5.1, periodic inspection and test, to allow alternative procedures to be used for checking the internal conditions of the pressure receptacle and the hydraulic pressure test provided for in 6.2.1.6.1 (b) and (d) respectively.

Variations in marking for refillable non-UN pressure receptacles (from those for UN pressure receptacles in 6.2.2.7)

ADR 6.2.3.9.2 has been amended to include the provision that the new manufacturing marks of 6.2.2.7.4 (q) and (r) shall **not be applied**.

The first paragraph of 6.2.4.1 has been amended to refer to Section 1.8.7, *Procedures for conformity assessment and periodic inspection* and Section 1.1.5, *Application of standards*. A note has been added to the table for EN 1251-2:2000, and new rows have been added to the table to include EN 14140:2014+AC:2015, EN 13175:2014, EN ISO 17871:2015, EN 13953:2015, EN ISO 11118:2015, EN ISO 10297:2014 and EN ISO 11623:2015.

Under periodic inspection and test of non-UN pressure receptacles, subsection 6.2.4.2 has been amended to refer to Section 1.1.5, *Application of standards*, and new rows have been added to the table to include EN 14912:2015, EN ISO 11623:2015, EN 14402016 (except Annex C) and EN 16728:2016 (except clause 3.5, Annex F and Annex G).

Aerosol dispensers, gas cartridges and fuel cell cartridges

Paragraph 6.2.6.1.5 has been amended to include test pressure and water capacity limits for liquefied gases and compressed gases.

Subsection 6.2.6.4 has been amended to include a new reference to a standard for UN No. 2037 small receptacles containing non-toxic, non-flammable, compressed or liquefied gases.

Chapter 6.5 Construction and testing of IBCs

A new note has been added to paragraph 6.5.2.2.4 to indicate that the date of manufacture of the inner receptacle of composite IBCs may be different from the date of manufacture, repair or remanufacture of the composite IBC.

Chapter 6.8 ADR Tanks

Welding and inspection of welds

Primarily in response to recent issues in the UK and Ireland in relation to certain imported tanks, paragraph 6.8.2.1.23 has been substantially amended with respect to the verification and confirmation of a manufacturer's ability to perform welding operations. Detail is now provided of additional steps which must be taken when the presence of an unacceptable defect is detected in a portion of a weld, which involves incremental increases in the amount of non-destructive checks that must be performed of the surrounding welds on the tank.

Inspections and Tests

Subsection 6.8.2.4.3 has been amended to clarify what pressure must be used for the leakproofness test for tanks equipped with breather devices and a safety device to prevent content spill if the tank overturns.

Requirements for tanks

Editorial amendments have been made to the text and to the tables in 6.8.2.6.1 (design and construction) and 6.8.2.6.2 (inspection and test).

The table in 6.8.2.6.1 has been restructured, with the number of headings reduced to two.

- Under the first heading, *For design and construction of tanks*, the standards are listed and three new standards have been added: EN 14025:2013 + A1:2016 (except Annex B), EN 13094:2015, EN12493:2013 + A1:2014 + AC:2015 (except Annex C), and
- Under the second heading, *For equipment*, five new standards have been added: EN 14432:2014, EN 14433:2014, EN 12252:2014, EN13648-1:2008 and EN 13175:2014.

A new standard has been added to the table in 6.8.2.6.2: EN 14334:2014.

Special requirements applicable to Class 2

Inspections and tests

Two new paragraphs have been added, 6.8.3.4.10 and 6.8.3.4.11 to provide for the determination of the **holding times** for tank-containers carrying refrigerated liquefied gases, and the testing regime for determining of the **effectiveness of the insulation system**.

Requirements for battery vehicles and MEGCs

Editorial amendments have been made to the text and the table in 6.8.3.6.

Chapter 6.11 Bulk Containers

A new type of **flexible bulk container, BK3**, has been added to the table in 6.11.2.3.



On foot of this, a whole **new section, ADR 6.11.5**, has been added to the chapter to provide the requirements for **the design, construction, inspection and testing of BK3 flexible bulk containers**, with subsections as follows:

- Design and construction requirements
- Service equipment and handling devices
- Inspection and testing
- Test report
- Marking

Part 7: Conditions of Carriage, Loading, Unloading and Handling

Chapter 7.2 Provisions concerning carriage in packages

The special provision V2 (1) of ADR 7.2.4 has been amended to include a new sentence to clarify the quantity limits which can be used where a transport unit consists of an EX/II vehicle and an EX/III vehicle, both carrying explosive substances and articles.

Special provision V8(4) has been amended to include ‘polymerising substances’ throughout the text.

Chapter 7.3 Provisions concerning carriage in bulk

Flexible bulk containers, with code BK3, have been added to subsection 7.3.2.1.

A whole **new subsection 7.3.2.10** has been added to cover the provisions relating to the **use** of flexible bulk containers.

Chapter 7.4 Provisions concerning carriage in tanks

Vehicles designated by the code ‘OX’ have been removed from the text of this chapter (for further clarification see later in Chapter 9.1).

Chapter 7.5 Loading, unloading and handling

Various editorial amendments have been made to this chapter, in particular to sections 7.5.1 and 7.5.2 and 7.5.11 (CV22 and CV37).

A **new subsection, 7.5.7.6**, has been added to include provisions for the **loading of flexible bulk containers**.

Special provision CV36 in ADR 7.5.11 has been amended to include an exemption from this provision for UN Nos 2211 (polymeric beads) and 3314 (plastics moulding compound) when the container is already marked in accordance with special provision 965 of the IMDG Code, with the IMDG special provision provided by means of a footnote.

Part 8: Requirements for vehicle crews, equipment, operation and documentation

Chapter 8.2 Training of vehicle crew

Paragraph 8.2.2.7.1.5 has been expanded to include more specific provisions for supervision by competent authorities, including the organisation of electronic examinations where necessary.

Two new paragraphs, 8.2.2.7.1.7 and 8.2.2.7.1.8, have been added, respectively, to include provisions for invigilation of examinations, authentication of candidates and record keeping, and to include detailed conditions for the performance of examinations electronically, which may be recorded and evaluated using electronic data processing (EDP) processes.

Part 9: Requirements for the construction and approval of vehicles

Chapter 9.1 Approval of vehicles

It was proposed by an informal working group of WP15 (see also Chapter 9.2) to harmonise and simplify the vehicle requirements in ADR, and as a result the category of 'OX vehicle' has been removed from the text of ADR. The definition of 'OX vehicle' has been subsumed as a sub-category of 'FL vehicle'.

Thus, in the definition of 'FL vehicle' in subsection 9.1.1.2 a new paragraph (d) has been added for vehicles intended for the carriage of hydrogen peroxide, and all references to 'OX vehicles' have been removed from the text of Chapter 9.1 and elsewhere in the text of the ADR where appropriate. Note that there are four transitional measures associated with this amendment, 1.6.5.16 and 1.6.5.18 to 1.6.5.20 (See Chapter 1.6)

Certificate of approval

A footnote has been added to subsection 9.1.3.1 to refer to the UNECE guidelines for completing the certificate of approval for vehicles.

Chapter 9.2 Construction of vehicles

Electrical Equipment

On foot of a substantial amount of work carried out by an informal working group of WP15 headed by the Dutch delegation, in three sessions throughout 2014 and 2015, there has been a complete revamp of the ADR requirements for the **electrical system of vehicles**, including the introduction of a more logical grouping of the requirements of the electrical system.

Chapter 9.2 has thus been substantially amended, in particular the Table of 9.2.1 which has been reorganised and rewritten, and the whole of Section 9.2.2, which provides for the electrical equipment of vehicles.




Note: Consequential amendments have been made to the references in 9.7.8.1 (electrical equipment).

Prevention of fire risks

Following an initial proposal at WP15 in November 2014 to use **LNG (Liquefied Natural Gas)** as the fuel for vehicles carrying dangerous goods by the European Liquefied Petroleum Gas Association (AEGPL) and the International Association for Natural Gas Vehicles (NGV Global), a further proposal was made in May 2015 to include **LPG (Liquefied petroleum gas) and CNG (Compressed Natural Gas)** as potential additional fuels. The proposals for text changes in the ADR to accommodate these fuels were debated at length, based on many papers and at several meetings of the WP15, before being finally agreed in November 2015 and May 2016.

Note: See also amendment to ADR subsection 1.1.3.2 and 1.1.3.3.

ADR subsections **9.2.4.3 (Fuel tanks and cylinders)** and **9.2.4.4 (Engine)** have thus been substantially amended to cater for the including of LNG, CNG and LPG as a fuel for vehicles carrying dangerous goods. Such amendments include specific references to ECE Regulation Nos. 34, 110 and 67 concerning, respectively, uniform provisions

-  for the approval of vehicles with regard to the prevention of fire risks,
-  for specific components for CNG and LNG propelled vehicles, and
-  for specific equipment for LPG propelled vehicles.

A new Section 9.2.7 has been added to provide for the prevention of other risks caused by fuels, e.g. due to the gas being refrigerated.

Chapter 9.3 Requirements for EX/II and EX/III vehicles

Section 9.3.7 with respect to electrical equipment has been substantially amended to reflect the amendments in Chapter 9.2, Sections 9.2.1. and 9.2.2.