

In the above table, "maximum total quantity per transport unit" means:

- For articles, total mass in kilograms of the articles without their packagings (for articles of Class 1, net mass in kilograms of the explosive substance; for dangerous goods in machinery and equipment specified in this Annex, the total quantity of dangerous goods contained therein in kilograms or litres as appropriate);
- For solids, liquefied gases, refrigerated liquefied gases and dissolved gases, net mass in kilograms;
- For liquids, the total quantity of dangerous goods contained in litres;
- For compressed gases, adsorbed gases and chemicals under pressure, the water capacity of the receptacle in litres.

1.1.3.6.4 Where dangerous goods of different transport categories are carried in the same transport unit, the sum of:

- The quantity of substances and articles of transport category 1 multiplied by "50";
- The quantity of substances and articles of transport category 1 referred to in note a to the table in 1.1.3.6.3 multiplied by "20";
- The quantity of substances and articles of transport category 2 multiplied by "3"; and
- The quantity of substances and articles of transport category 3;

shall not exceed a calculated value of "1 000".

1.1.3.6.5 For the purposes of this sub-section, dangerous goods exempted in accordance with 1.1.3.1 (a) and (d) to (f), 1.1.3.2 to 1.1.3.5, 1.1.3.7, 1.1.3.9 and 1.1.3.10 shall not be taken into account.

#### **1.1.3.7 *Exemptions related to the carriage of electric energy storage and production systems***

The provisions laid down in ADR do not apply to electric energy storage and production systems (e.g., lithium batteries, electric capacitors, asymmetric capacitors, metal hydride storage systems and fuel cells):

- (a) Installed in a vehicle, performing a transport operation and destined for its propulsion or for the operation of any of its equipment;
- (b) Contained in equipment for the operation of this equipment used or intended for use during carriage (e.g. a laptop), except for equipment such as data loggers and cargo tracking devices attached to or placed in packages, overpacks, containers or load compartments which are only subject to the requirements in 5.5.4.

1.1.3.8 *(Reserved)*

#### **1.1.3.9 *Exemptions related to dangerous goods used as a coolant or conditioner during carriage***

When used in vehicles or containers for cooling or conditioning purposes, dangerous goods that are only asphyxiant (which dilute or replace the oxygen normally in the atmosphere) are only subject to the provisions of section 5.5.3.

#### **1.1.3.10 *Exemptions related to the carriage of lamps containing dangerous goods***

The following lamps are not subject to ADR provided that they do not contain radioactive material and do not contain mercury in quantities above those specified in special provision 366 of Chapter 3.3:

- (a) Lamps that are collected directly from individuals and households when carried to a collection or recycling facility;

*NOTE: This also includes lamps brought by individuals to a first collection point, and then carried to another collection point, intermediate processing or recycling facility.*

(b) Lamps each containing not more than 1 g of dangerous goods and packaged so that there is not more than 30 g of dangerous goods per package, provided that:

(i) The lamps are manufactured according to a certified quality management system;

*NOTE: ISO 9001 may be used for this purpose.*

and

(ii) Each lamp is either individually packed in inner packagings, separated by dividers, or surrounded with cushioning material to protect the lamps and packed into strong outer packagings meeting the general provisions of 4.1.1.1 and capable of passing a 1.2 m drop test;

(c) Used, damaged or defective lamps each containing not more than 1 g of dangerous goods with not more than 30 g of dangerous goods per package when carried from a collection or recycling facility. The lamps shall be packed in strong outer packagings sufficient for preventing release of the contents under normal conditions of carriage meeting the general provisions of 4.1.1.1 and that are capable of passing a drop test of not less than 1.2 m;

(d) Lamps containing only gases of Groups A and O (according to 2.2.2.1) provided they are packaged so that the projectile effects of any rupture of the lamp will be contained within the package.

*NOTE: Lamps containing radioactive material are addressed in 2.2.7.2.2.2 (b).*

#### 1.1.4 **Applicability of other regulations**

##### 1.1.4.1 *(Reserved)*

##### 1.1.4.2 **Carriage in a transport chain including maritime or air carriage**

1.1.4.2.1 Packages, containers, bulk-containers, portable tanks, tank-containers and MEGCs, which do not entirely meet the requirements for packing, mixed packing, marking, labelling of packages or placarding and orange plate marking, of ADR, but are in conformity with the requirements of the IMDG Code or the ICAO Technical Instructions shall be accepted for carriage in a transport chain including maritime or air carriage subject to the following conditions:

(a) If the packages are not marked and labelled in accordance with ADR, they shall bear marks and danger labels in accordance with the requirements of the IMDG Code or the ICAO Technical Instructions;

(b) The requirements of the IMDG Code or the ICAO Technical Instructions shall be applicable to mixed packing within a package;

(c) For carriage in a transport chain including maritime carriage, if the containers, bulk-containers, portable tanks, tank-containers or MEGCs are not marked and placarded in accordance with Chapter 5.3 of this Annex, they shall be marked and placarded in accordance with Chapter 5.3 of the IMDG Code. In such case, only 5.3.2.1.1 of this Annex is applicable to the marking of the vehicle itself. For empty, uncleared portable tanks, tank-containers and MEGCs, this requirement shall apply up to and including the subsequent transfer to a cleaning station.

This derogation does not apply in the case of goods classified as dangerous goods in classes 1 to 9 of ADR and considered as non-dangerous goods according to the applicable requirements of the IMDG Code or the ICAO Technical Instructions.

1.1.4.2.2 Transport units composed of a vehicle or vehicles other than those carrying containers, portable tanks, tank-containers or MEGCs as provided for in 1.1.4.2.1 (c), which are not placarded in accordance with the provisions of 5.3.1 of ADR but which are marked and placarded in accordance with Chapter 5.3 of the IMDG Code, shall be accepted for carriage in a transport chain including maritime transport provided that the orange-coloured plate marking provisions of 5.3.2 of ADR are complied with.

1.1.4.2.3 For carriage in a transport chain including maritime or air carriage, the information required under 5.4.1 and 5.4.2 and under any special provision of Chapter 3.3 may be substituted by the transport document

and information required by the IMDG Code or the ICAO Technical Instructions respectively provided that any additional information required by ADR is also included.

*NOTE: For carriage in accordance with 1.1.4.2.1, see also 5.4.1.1.7. For carriage in containers, see also 5.4.2.*

**1.1.4.3      *Use of IMO type portable tanks approved for maritime transport***

IMO type portable tanks (types 1, 2, 5 and 7) which do not meet the requirements of Chapters 6.7 or 6.8, but which were built and approved before 1 January 2003 in accordance with the provisions of the IMDG Code (Amdt. 29-98) may continue to be used provided that they meet the applicable periodic inspection and test provisions of the IMDG Code<sup>1</sup>. In addition, they shall meet the provisions corresponding to the instructions set out in columns (10) and (11) of Table A in Chapter 3.2 and the provisions of Chapter 4.2 of ADR. See also 4.2.0.1 of the IMDG Code.

**1.1.4.4      *(Reserved)***

**1.1.4.5      *Carriage other than by road***

**1.1.4.5.1** If the vehicle carrying out a transport operation subject to the requirements of ADR is conveyed over a section of the journey otherwise than by road haulage, then any national or international regulations which, on the said section, govern the carriage of dangerous goods by the mode of transport used for conveying the road vehicle shall alone be applicable to the said section of the journey.

**1.1.4.5.2** In the cases referred to in 1.1.4.5.1 above, the involved ADR Contracting Parties may agree to apply the requirements of ADR to the section of a journey where a vehicle is conveyed otherwise than by road haulage, supplemented, if they consider it necessary, by additional requirements, unless such agreements between the involved ADR Contracting Parties would contravene clauses of the international conventions governing the carriage of dangerous goods by the mode of transport used for conveying the road vehicle on the said section of the journey, e.g. the International Convention for the Safety of Life at Sea (SOLAS), to which these ADR Contracting Parties would also be contracting parties.

These agreements shall be notified by the Contracting Party which has taken the initiative thereof to the Secretariat of the United Nations Economic Commission for Europe which shall bring them to the attention of the Contracting Parties.

**1.1.4.5.3** In cases where a transport operation subject to the provisions of ADR is likewise subject over the whole or a part of the road journey to the provisions of an international convention which regulates the carriage of dangerous goods by a mode of transport other than road carriage by virtue of clauses extending the applicability of that convention to certain motor-vehicle services, then the provisions of that international convention shall apply over the journey in question concurrently with those of ADR which are not incompatible with them; the other clauses of ADR shall not apply over the journey in question.

**1.1.4.6      *(Reserved)***

**1.1.4.7      *Refillable pressure receptacles authorized by the United States of America Department of Transportation***

*NOTE: For carriage in accordance with 1.1.4.7, see also 5.4.1.1.24.*

**1.1.4.7.1      *Import of gases***

Refillable pressure receptacles authorised by the United States of America Department of Transportation and constructed and tested in accordance with standards listed in Part 178, *Specifications for Packagings of Title 49, Transportation*, of the *Code of Federal Regulations* accepted for carriage in a transport chain in accordance with 1.1.4.2 may be carried from the location of the temporary storage at the end point of the transport chain to the end user.

<sup>1</sup> The International Maritime Organization (IMO) has issued "Guidance on the Continued Use of Existing IMO Type Portable Tanks and Road Tank Vehicles for the Transport of Dangerous Goods" as circular CCC.1/Circ.3. The text of this guidance can be found on the IMO website at: [www.imo.org](http://www.imo.org).

**1.1.4.7.2 *Export of gases and empty uncleared pressure receptacles***

Refillable pressure receptacles authorised by the United States of America Department of Transportation and constructed in accordance with standards listed in Part 178, *Specifications for Packagings of Title 49, Transportation, of the Code of Federal Regulations* may be filled and carried only for the purpose of exporting to countries which are not Contracting Parties to ADR provided the following provisions are met:

- (a) The filling of the pressure receptacle is in accordance with the relevant requirements of the *Code of Federal Regulations* of the United States of America;
- (b) The pressure receptacles shall be marked and labelled in accordance with Chapter 5.2;
- (c) The provisions of 4.1.6.12 and 4.1.6.13 shall apply to pressure receptacles. Pressure receptacles shall not be filled after they become due for periodic inspection but may be carried after the expiry of the time-limit for purposes of performing inspection, including the intermediate carriage operations.

**1.1.5 *Application of standards***

Where the application of a standard is required and there is any conflict between the standard and the provisions of ADR, the provisions of ADR take precedence. The requirements of the standard that do not conflict with ADR shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.

*NOTE: A standard provides details on how to meet the provisions of ADR and may include requirements in addition to those set out in ADR.*

## CHAPTER 1.2

### DEFINITIONS, UNITS OF MEASUREMENT AND ABBREVIATIONS

#### 1.2.1 Definitions

*NOTE: This section contains all general or specific definitions.*

For the purposes of ADR:

#### A

*"Aerosol or aerosol dispenser"* means an article consisting of any non-refillable receptacle meeting the requirements of 6.2.6, made of metal, glass or plastics and containing a gas, compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state;

*"Animal material"* means animal carcasses, animal body parts, foodstuffs or feedstuffs derived from animals;

*NOTE: Exceptionally a third party (for instance a tank-container operator in accordance with the definition of 1.2.1) may apply for the conformity assessment.*

*"Approval"*

*Multilateral approval*, for the carriage of radioactive material, means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable, and by the competent authority of each country through or into which the consignment is to be carried;

*Unilateral approval*, for the carriage of radioactive material, means an approval of a design which is required to be given by the competent authority of the country of origin of the design only. If the country of origin is not a Contracting Party to ADR, the approval shall require validation by the competent authority of a Contracting Party to ADR (see 6.4.22.8);

#### B

*"Bag"* means a flexible packaging made of paper, plastics film, textiles, woven material or other suitable material;

*"Battery-vehicle"* means a vehicle containing elements which are linked to each other by a manifold and permanently fixed to this vehicle. The following elements are considered to be elements of a battery-vehicle: cylinders, tubes, bundles of cylinders (also known as frames), pressure drums as well as tanks destined for the carriage of gases as defined in 2.2.2.1.1 with a capacity of more than 450 litres;

*"Body"* (for all categories of IBC other than composite IBCs) means the receptacle proper, including openings and closures, but does not include service equipment;

*"Box"* means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics or other suitable material. Small holes for purposes of ease of handling or opening or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during carriage;

*"Bulk container"* means a containment system (including any liner or coating) intended for the carriage of solid substances which are in direct contact with the containment system. Packagings, intermediate bulk containers (IBCs), large packagings and tanks are not included.

A bulk container is:

- Of a permanent character and accordingly strong enough to be suitable for repeated use;
- Specially designed to facilitate the carriage of goods by one or more means of transport without intermediate reloading;

- Fitted with devices permitting its ready handling;
- Of a capacity of not less than 1.0 m<sup>3</sup>;

Examples of bulk containers are containers, offshore bulk containers, skips, bulk bins, swap bodies, trough-shaped containers, roller containers, load compartments of vehicles;

**NOTE:** This definition only applies to bulk containers meeting the requirements of Chapter 6.11.

*"Closed bulk container"* means a totally closed bulk container having a rigid roof, sidewalls, end walls and floor (including hopper-type bottoms). The term includes bulk containers with an opening roof, side or end wall that can be closed during carriage. Closed bulk containers may be equipped with openings to allow for the exchange of vapours and gases with air and which prevent under normal conditions of carriage the release of solid contents as well as the penetration of rain and splash water;

*"Flexible bulk container"* means a flexible container with a capacity not exceeding 15 m<sup>3</sup> and includes liners and attached handling devices and service equipment;

*"Sheeted bulk container"* means an open top bulk container with rigid bottom (including hopper-type bottom), side and end walls and a non-rigid covering;

*"Bundle of cylinders"* means a pressure receptacle comprising an assembly of cylinders or cylinder shells that are fastened together and which are interconnected by a manifold and carried as a unit. The total water capacity shall not exceed 3 000 litres except that bundles intended for the carriage of toxic gases of Class 2 (groups starting with letter T according to 2.2.2.1.3) shall be limited to 1 000 litres water capacity;

## C

*"Calculation pressure"* means a theoretical pressure at least equal to the test pressure which, according to the degree of danger exhibited by the substance being carried, may to a greater or lesser degree exceed the working pressure. It is used solely to determine the thickness of the walls of the shell, independently of any external or internal reinforcing device (see also *"Discharge pressure"*, *"Filling pressure"*, *"Maximum working pressure (gauge pressure)"* and *"Test pressure"*);

**NOTE:** For portable tanks, see Chapter 6.7.

*"Capacity of shell or shell compartment"* for tanks, means the total inner volume of the shell or shell compartment expressed in litres or cubic metres. When it is impossible to completely fill the shell or the shell compartment because of its shape or construction, this reduced capacity shall be used for the determination of the degree of filling and for the marking of the tank;

*"Cargo transport unit"* means a vehicle, a wagon, a container, a tank-container, a portable tank or an MEGC;

*"Carriage"* means the change of place of dangerous goods, including stops made necessary by transport conditions and including any period spent by the dangerous goods in vehicles, tanks and containers made necessary by traffic conditions before, during and after the change of place.

This definition also covers the intermediate temporary storage of dangerous goods in order to change the mode or means of transport (trans-shipment). This shall apply provided that transport documents showing the place of dispatch and the place of reception are presented on request and provided that packages and tanks are not opened during intermediate storage, except to be checked by the competent authorities;

*"Carriage in bulk"* means the carriage of unpackaged solids or articles in vehicles, containers or bulk containers. The term does not apply to packaged goods nor to substances carried in tanks;

*"Carrier"* means the enterprise which carries out the transport operation with or without a transport contract;

*"Closed bulk container"*, see *"Bulk container"*;

*"Closed container"*, see *"Container"*;

*"Closed cryogenic receptacle"* means a thermally insulated pressure receptacle for refrigerated liquefied gases of a water capacity of not more than 1 000 litres;

*"Closed vehicle"* means a vehicle having a body capable of being closed;

*"Closure"* means a device which closes an opening in a receptacle;

**NOTE:** For pressure receptacles, closures are, for example, valves, pressure relief devices, pressure gauges or level indicators.

*"Collective entry"* means an entry for a defined group of substances or articles (see 2.1.1.2, B, C and D);

*"Combination packaging"* means a combination of packagings for carriage purposes, consisting of one or more inner packagings secured in an outer packaging in accordance with 4.1.1.5;

**NOTE:** The term *"inner packaging"* used for combination packagings shall not be confused with the term *"inner receptacle"* used for composite packagings.

*"Combustion heater"* means a device directly using liquid or gaseous fuel and not using the waste heat from the engine used for propulsion of the vehicle;

*"Competent authority"* means the authority or authorities or any other body or bodies designated as such in each State and in each specific case in accordance with domestic law;

*"Compliance assurance"* (radioactive material) means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the requirements of ADR are met in practice;

*"Composite IBC with plastics inner receptacle"* means an IBC comprising structural equipment in the form of a rigid outer casing encasing a plastics inner receptacle together with any service or other structural equipment. It is so constructed that the inner receptacle and outer casing once assembled form, and are used as, an integrated single unit to be filled, stored, transported or emptied as such;

**NOTE:** *"Plastics material"*, when used in connection with inner receptacles for composite IBCs, is taken to include other polymeric materials such as rubber.

*"Composite packaging"* means a packaging consisting of an outer packaging and an inner receptacle so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, carried and emptied as such;

**NOTE:** The term *"inner receptacle"* used for composite packagings shall not be confused with the term *"inner packaging"* used for combination packagings. For example, the inner of a 6HA1 composite packaging (plastics material) is such an inner receptacle since it is normally not designed to perform a containment function without its outer packaging and is not therefore an inner packaging.

Where a material is mentioned in brackets after the term *"composite packaging"*, it refers to the inner receptacle.

*"Compressed natural gas (CNG)"* means a compressed gas composed of natural gas with a high methane content assigned to UN No. 1971;

*"Confinement system"*, for the carriage of radioactive material, means the assembly of fissile material and packaging components specified by the designer and agreed to by the competent authority as intended to preserve criticality safety;

*"Conformity assessment"* means the process of verifying the conformity of a product according to the provisions of sections 1.8.6 and 1.8.7 related to type examination, supervision of manufacture and initial inspection and testing;

*"Consignee"* means the consignee according to the contract for carriage. If the consignee designates a third party in accordance with the provisions applicable to the contract for carriage, this person shall be deemed to be the consignee within the meaning of ADR. If the transport operation takes place without a contract for carriage, the enterprise which takes charge of the dangerous goods on arrival shall be deemed to be the consignee;

*"Consignment"* means any package or packages, or load of dangerous goods, presented by a consignor for carriage;

*"Consignor"* means the enterprise which consigns dangerous goods either on its own behalf or for a third party. If the transport operation is carried out under a contract for carriage, consignor means the consignor according to the contract for carriage;

*"Container"* means an article of transport equipment (lift van or other similar structure):

- Of a permanent character and accordingly strong enough to be suitable for repeated use;
- Specially designed to facilitate the carriage of goods, by one or more means of transport, without breakage of load;
- Fitted with devices permitting its ready stowage and handling, particularly when being transloaded from one means of transport to another;
- So designed as to be easy to fill and empty;
- Having an internal volume of not less than 1 m<sup>3</sup>, except for containers for the carriage of radioactive material.

In addition:

*"Small container"* means a container which has an internal volume of not more than 3 m<sup>3</sup>;

*"Large container"* means

- (a) A container which does not meet the definition of a small container;
- (b) In the meaning of the CSC, a container of a size such that the area enclosed by the four outer bottom corners is either
  - (i) At least 14 m<sup>2</sup> (150 square feet); or
  - (ii) At least 7 m<sup>2</sup> (75 square feet) if fitted with top corner fittings;

*"Closed container"* means a totally enclosed container having a rigid roof, rigid side walls, rigid end walls and a floor. The term includes containers with an opening roof where the roof can be closed during transport;

*"Open container"* means an open top container or a platform based container;

*"Sheeted container"* means an open container equipped with a sheet to protect the goods loaded;

A *"swap body"* is a container which, in accordance with EN 283:1991 has the following characteristics:

- From the point of view of mechanical strength, it is only built for carriage on a wagon or a vehicle on land or by roll-on roll-off ship;
- It cannot be stacked;
- It can be removed from vehicles by means of equipment on board the vehicle and on its own supports, and can be reloaded;

*NOTE: The term "container" does not cover conventional packagings, IBCs, tank-containers or vehicles. Nevertheless, a container may be used as a packaging for the carriage of radioactive material.*

*"Containment system"*, for the carriage of radioactive material, means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during carriage;

*"Control temperature"* means the maximum temperature at which the organic peroxide, the self-reactive substance or the polymerizing substance can be safely carried;

*"Conveyance"* means, for carriage by road or by rail, a vehicle or a wagon;

*"Criticality safety index (CSI) assigned to a package, overpack or container containing fissile material"*, for the carriage of radioactive material, means a number which is used to provide control over the accumulation of packages, overpacks or containers containing fissile material;

*"Crate"* means an outer packaging with incomplete surfaces;

*"Critical temperature"* means the temperature above which the substance cannot exist in the liquid state;

*"Cylinder"* means a pressure receptacle of a water capacity not exceeding 150 litres (see also *"Bundle of cylinders"*);

#### D

*"Dangerous goods"* means those substances and articles the carriage of which is prohibited by ADR, or authorized only under the conditions prescribed therein;

*"Dangerous reaction"* means:

- (a) Combustion or evolution of considerable heat;
- (b) Evolution of flammable, asphyxiant, oxidizing or toxic gases;
- (c) The formation of corrosive substances;
- (d) The formation of unstable substances; or
- (e) Dangerous rise in pressure (for tanks only);

*"Degree of filling"* means the ratio, expressed in %, of the volume of liquid or solid introduced at 15 °C into the means of containment and the volume of the means of containment ready for use;

*"Demountable tank"* means a tank, other than a fixed tank, a portable tank, a tank-container or an element of a battery-vehicle or a MEGC which has a capacity of more than 450 litres, is not designed for the carriage of goods without breakage of load, and normally can only be handled when it is empty;

*"Design"*, for the carriage of radioactive material, means the description of fissile material excepted under 2.2.7.2.3.5 (f), special form radioactive material, low dispersible radioactive material, package or packaging which enables such an item to be fully identified. The description may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation;

*"Design life"*, for composite cylinders and tubes, means the maximum life (in number of years) for which the cylinder or tube is designed and approved in accordance with the applicable standard;

*"Diameter"* (for shells of tanks) means the internal diameter of the shell;

*"Discharge pressure"* means the maximum pressure actually built up in the tank when it is being discharged under pressure (see also *"Calculation pressure"*, *"Filling pressure"*, *"Maximum working pressure (gauge pressure)"* and *"Test pressure"*);

*"Dose rate"* means the ambient dose equivalent or the directional dose equivalent, as appropriate, per unit time, measured at the point of interest;

*"Drum"* means a flat-ended or convex-ended cylindrical packaging made out of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, e.g. round, taper-necked packagings or pail-shaped packagings. Wooden barrels and jerricans are not covered by this definition;

#### E

*"EC Directive"* means provisions decided by the competent institutions of the European Community and which are binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods;

*"Emergency temperature"* means the temperature at which emergency procedures shall be implemented in the event of loss of temperature control;

*"Enterprise"* means any natural person, any legal person, whether profit-making or not, any association or group of persons without legal personality, whether profit-making or not, or any official body, whether it has legal personality itself or is dependent upon an authority that has such personality;

*"Exclusive use"*, for the carriage of radioactive material, means the sole use, by a single consignor, of a vehicle or of a large container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by ADR;

## F

*"Fibreboard IBC"* means a fibreboard body with or without separate top and bottom caps, if necessary, an inner liner (but no inner packagings), and appropriate service and structural equipment;

*"Fibre-reinforced plastics"* means material consisting of fibrous and/or particulate reinforcement contained within a thermoset or thermoplastic polymer (matrix);

*"Filler"* means any enterprise which fills dangerous goods into a tank (tank-vehicle, demountable tank, portable tank or tank-container) and/or into a vehicle, large container or small container for carriage in bulk, or into a battery-vehicle or MEGC;

*"Filling pressure"* means the maximum pressure actually built up in the tank when it is being filled under pressure (see also *"Calculation pressure"*, *"Discharge pressure"*, *"Maximum working pressure (gauge pressure)"* and *"Test pressure"*);

*"Filling ratio"* means the ratio of the mass of gas to the mass of water at 15 °C that would fill completely the means of containment fitted ready for use;

*"Fixed tank"* means a tank having a capacity of more than 1 000 litres which is permanently attached to a vehicle (which then becomes a tank-vehicle) or is an integral part of the frame of such vehicle;

*"Flammable component"* (for aerosols) means flammable liquids, flammable solids or flammable gases and gas mixtures as defined in notes 1 to 3 of sub-section 31.1.3 of Part III of the *Manual of Tests and Criteria*. This designation does not cover pyrophoric, self-heating or water-reactive substances. The chemical heat of combustion shall be determined by one of the following methods ASTM D 240, ISO/CDIS 13943:1999 (E/F) 86.1 to 86.3 or NFPA 30B;

*"Flash-point"* means the lowest temperature of a liquid at which its vapours form a flammable mixture with air;

*"Flexible bulk container"*, see *"Bulk container"*;

*"Flexible IBC"* means a body constituted of film, woven fabric or any other flexible material or combinations thereof, and if necessary, an inner coating or liner, together with any appropriate service equipment and handling devices;

*"Fuel cell"* means an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products;

*"Fuel cell engine"* means a device used to power equipment and which consists of a fuel cell and its fuel supply, whether integrated with or separate from the fuel cell, and includes all appurtenances necessary to fulfil its function;

*"Full load"* means any load originating from one consignor for which the use of a vehicle or of a large container is exclusively reserved and all operations for the loading and unloading of which are carried out in conformity with the instructions of the consignor or of the consignee;

**NOTE:** The corresponding term for radioactive material is *"exclusive use"*.

**G**

*"Gas"* means a substance which:

- (a) At 50 °C has a vapour pressure greater than 300 kPa (3 bar); or
- (b) Is completely gaseous at 20 °C under standard pressure of 101.3 kPa;

*"Gas cartridge"*, see *"Small receptacle containing gas"*;

*"Globally Harmonized System of Classification and Labelling of Chemicals"* means the tenth revised edition of the United Nations publication bearing this title (ST/SG/AC.10/30/Rev.10);

**H**

*"Handling device"* (for flexible IBCs) means any sling, loop, eye or frame attached to the body of the IBC or formed from the continuation of the IBC body material;

*"Hermetically closed tank"* means a tank that:

- Is not equipped with safety valves, bursting discs, other similar safety devices or vacuum valves; or
- Is equipped with safety valves preceded by a bursting disc according to 6.8.2.2.10, but is not equipped with vacuum valves.

A tank intended for the carriage of liquid substances with a calculation pressure of at least 4 bar or intended for the carriage of solid substances (powdery or granular) regardless of its calculation pressure is also considered hermetically closed if it:

- Is equipped with safety valves preceded by a bursting disc according to 6.8.2.2.10 and vacuum valves, in accordance with the requirements of 6.8.2.2.3; or,
- Is not equipped with safety valves, bursting discs or other similar safety devices, but is equipped with vacuum valves, in accordance with the requirements of 6.8.2.2.3.;

*"Holding time"* means the time that will elapse from the establishment of the initial filling condition until the pressure has risen due to heat influx to the lowest set pressure of the pressure limiting devices (s) of tanks intended for the carriage of refrigerated liquefied gases;

*NOTE: For portable tanks, see 6.7.4.1.*

**I**

*"IAEA Regulations for the Safe Transport of Radioactive Material"* means one of the editions of those Regulations, as follows:

- (a) For the 1985 and 1985 (as amended 1990) editions: IAEA Safety Series No. 6;
- (b) For the 1996 edition: IAEA Safety Series No. ST-1;
- (c) For the 1996 (revised) edition: IAEA Safety Series No. TS-R-1 (ST-1, Revised);
- (d) For the 1996 (as amended 2003), 2005 and 2009 editions: IAEA Safety Standards Series No. TS-R-1;
- (e) For the 2012 edition: IAEA Safety Standards Series No. SSR-6;
- (f) For the 2018 edition: IAEA Safety Standards Series No. SSR-6 (Rev.1);

*"ICAO Technical Instructions"* means the *Technical Instructions for the Safe Transport of Dangerous Goods by Air*, which complement Annex 18 to the Chicago Convention on International Civil Aviation (Chicago 1944), published by the International Civil Aviation Organization (ICAO) in Montreal;

*"IMDG Code"* means the *International Maritime Dangerous Goods Code*, for the implementation of Chapter VII, Part A, of the *International Convention for the Safety of Life at Sea*, 1974 (SOLAS Convention), published by the International Maritime Organization (IMO), London;

*"Inner packaging"* means a packaging for which an outer packaging is required for carriage;

*"Inner receptacle"* means a receptacle which requires an outer packaging in order to perform its containment function;

*"Inspection body"* means an independent inspection and testing body approved by the competent authority;

*"Intermediate bulk container"* (IBC) means a rigid, or flexible portable packaging, other than those specified in Chapter 6.1, that:

- (a) Has a capacity of:
  - (i) Not more than 3 m<sup>3</sup> for solids and liquids of packing groups II and III;
  - (ii) Not more than 1.5 m<sup>3</sup> for solids of packing group I when packed in flexible, rigid plastics, composite, fibreboard and wooden IBCs;
  - (iii) Not more than 3 m<sup>3</sup> for solids of packing group I when packed in metal IBCs;
  - (iv) Not more than 3 m<sup>3</sup> for radioactive material of Class 7;
- (b) Is designed for mechanical handling;
- (c) Is resistant to the stresses produced in handling and transport as determined by the tests specified in Chapter 6.5;

(see also *"Composite IBC with plastics inner receptacle"*, *"Fibreboard IBC"*, *"Flexible IBC"*, *"Metal IBC"*, *"Rigid plastics IBC"* and *"Wooden IBC"*).

*NOTE 1: Portable tanks or tank-containers that meet the requirements of Chapter 6.7 or 6.8 respectively are not considered to be intermediate bulk containers (IBCs).*

*NOTE 2: Intermediate bulk containers (IBCs) which meet the requirements of Chapter 6.5 are not considered to be containers for the purposes of ADR.*

*"Remanufactured IBC"* means a metal, rigid plastics or composite IBC that:

- (a) Is produced as a UN type from a non-UN type; or
- (b) Is converted from one UN design type to another UN design type.

Remanufactured IBCs are subject to the same requirements of ADR that apply to new IBCs of the same type (see also design type definition in 6.5.6.1.1);

*"Repaired IBC"* means a metal, rigid plastics or composite IBC that, as a result of impact or for any other cause (e.g. corrosion, embrittlement or other evidence of reduced strength as compared to the design type) is restored so as to conform to the design type and to be able to withstand the design type tests. For the purposes of ADR, the replacement of the rigid inner receptacle of a composite IBC with a receptacle conforming to the original design type from the same manufacturer is considered repair. However, routine maintenance of rigid IBCs is not considered repair. The bodies of rigid plastics IBCs and the inner receptacles of composite IBCs are not repairable. Flexible IBCs are not repairable unless approved by the competent authority;

*"Routine maintenance of flexible IBCs"* means the routine performance on plastics or textile flexible IBCs of operations, such as:

- (a) Cleaning; or
- (b) Replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification;

provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

*"Routine maintenance of rigid IBCs"* means the routine performance on metal, rigid plastics or composite IBCs of operations such as:

- (a) Cleaning;
- (b) Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, conforming to the original manufacturer's specifications, provided that the leaktightness of the IBC is verified; or
- (c) Restoration of structural equipment not directly performing a dangerous goods containment or discharge pressure retention function so as to conform to the design type (e.g. the straightening of legs or lifting attachments) provided that the containment function of the IBC is not affected;

*"Inner vessel"*, for a closed cryogenic receptacle, means the pressure vessel intended to contain the refrigerated liquefied gas;

*"Intermediate packaging"* means a packaging placed between inner packagings or articles, and an outer packaging;

## **J**

*"Jerrican"* means a metal or plastics packaging of rectangular or polygonal cross-section with one or more orifices;

## **L**

*"Large container"*, see *"Container"*;

*"Large packaging"* means a packaging consisting of an outer packaging which contains articles or inner packagings and which

- (a) Is designed for mechanical handling;
- (b) Exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3 m<sup>3</sup>;

*"Large salvage packaging"* means a special packaging which

- (a) Is designed for mechanical handling; and
- (b) Exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3 m<sup>3</sup>;

into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;

*"Leakproofness test"* means a test to determine the leakproofness of a tank, a packaging or an IBC and of the equipment and closure devices;

**NOTE:** For portable tanks, see Chapter 6.7.

*"Light-gauge metal packaging"* means a packaging of circular, elliptical, rectangular or polygonal cross-section (also conical) and taper-necked and pail-shaped packaging made of metal, having a wall thickness of less than 0.5 mm (e.g. tinplate), flat or convex bottomed and with one or more orifices, which is not covered by the definitions for drums or jerricans;

*"Liner"* means a tube or bag inserted into a packaging, including large packagings or IBCs, but not forming an integral part of it, including the closures of its openings;

*"Liquid"* means a substance which at 50 °C has a vapour pressure of not more than 300 kPa (3 bar), which is not completely gaseous at 20 °C and 101.3 kPa, and which

- (a) Has a melting point or initial melting point of 20 °C or less at a pressure of 101.3 kPa; or
- (b) Is liquid according to the ASTM D 4359-90 test method; or

(c) Is not pasty according to the criteria applicable to the test for determining fluidity ( penetrometer test) described in 2.3.4;

**NOTE:** "Carriage in the liquid state", for the purpose of tank requirements, means:

- *Carriage of liquids according to the above definition; or*
- *Solids handed over for carriage in the molten state.*

"Liquefied natural gas (LNG)" means a refrigerated liquefied gas composed of natural gas with a high methane content assigned to UN No. 1972;

"Liquefied petroleum gas (LPG)" means a low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN Nos. 1011, 1075, 1965, 1969 or 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases;

**NOTE 1:** Flammable gases assigned to other UN numbers shall not be regarded as LPG.

**NOTE 2:** For UN No. 1075 see NOTE 2 under 2F, UN No. 1965, in the table for Liquefied gases in 2.2.2.3.

"Loader" means any enterprise which:

- (a) Loads packaged dangerous goods, small containers or portable tanks into or onto a vehicle or a container; or
- (b) Loads a container, bulk-container, MEGC, tank-container or portable tank onto a vehicle.

"Loading" means all actions carried out by the loader, in accordance with the definition of loader;

## M

"Management system", for the carriage of radioactive material, means a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner;

"Manual of Tests and Criteria" means the eighth revised edition of the United Nations publication bearing this title (ST/SG/AC.10/11/Rev.8);

"Mass of package" means gross mass of the package unless otherwise stated. The mass of containers and tanks used for the carriage of goods is not included in the gross mass;

"Maximum capacity" means the maximum inner volume of receptacles or packagings including intermediate bulk containers (IBCs) and large packagings expressed in cubic metres or litres;

"Maximum net mass" means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof expressed in kilograms;

"Maximum normal operating pressure", for the carriage of radioactive material, means the maximum pressure above atmospheric pressure at mean sea-level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions in the absence of venting, external cooling by an ancillary system, or operational controls during carriage;

"Maximum permissible gross mass"

- (a) (For IBCs) means the mass of the IBC and any service or structural equipment together with the maximum net mass;
- (b) (For tanks) means the tare of the tank and the heaviest load authorized for carriage;

**NOTE:** For portable tanks, see Chapter 6.7.

*"Maximum working pressure (gauge pressure)"* means the highest of the following three pressures that may occur at the top of the tank in the operating position:

- (a) The highest effective pressure allowed in the tank during filling (maximum filling pressure allowed);
- (b) The highest effective pressure allowed in the tank during discharge (maximum discharge pressure allowed); and
- (c) The effective gauge pressure to which the tank is subjected by its contents (including such extraneous gases as it may contain) at the maximum working temperature.

Unless the special requirements prescribed in Chapter 4.3 provide otherwise, the numerical value of this working pressure (gauge pressure) shall not be lower than the vapour pressure (absolute pressure) of the filling substance at 50 °C.

For tanks equipped with safety valves (with or without bursting disc) other than tanks for the carriage of compressed, liquefied or dissolved gases of Class 2, the maximum working pressure (gauge pressure) shall however be equal to the prescribed opening pressure of such safety valves.

(See also *"Calculation pressure"*, *"Discharge pressure"*, *"Filling pressure"* and *"Test pressure"*);

**NOTE 1:** *Maximum working pressure is not applicable to gravity-discharge tanks according to 6.8.2.1.14 (a).*

**NOTE 2:** *For portable tanks, see Chapter 6.7.*

**NOTE 3:** *For closed cryogenic receptacles, see NOTE to 6.2.1.3.6.5.*

*"Member of a vehicle crew"* means a driver or any other person accompanying the driver for safety, security, training or operational reasons;

*"Metal hydride storage system"* means a single complete hydrogen storage system, including a pressure receptacle shell, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the carriage of hydrogen only;

*"Metal IBC"* means a metal body together with appropriate service and structural equipment;

*"Mild steel"* means a steel having a minimum tensile strength between 360 N/mm<sup>2</sup> and 440 N/mm<sup>2</sup>;

**NOTE:** *For portable tanks, see Chapter 6.7.*

*"Mobile explosives manufacturing unit"* (MEMU) means a unit, or a vehicle mounted with a unit, for manufacturing and charging explosives from dangerous goods that are not explosives. The unit consists of various tanks and bulk containers and process equipment as well as pumps and related equipment. The MEMU may have special compartments for packaged explosives;

**NOTE:** *Even though the definition of MEMU includes the expression "manufacturing and charging explosives" the requirements for MEMUs apply only to carriage and not to manufacturing and charging of explosives.*

*"Multiple-element gas container"* (MEGC) means a unit containing elements which are linked to each other by a manifold and mounted on a frame. The following elements are considered to be elements of a multiple-element gas container: cylinders, tubes, pressure drums or bundles of cylinders as well as tanks for the carriage of gases as defined in 2.2.2.1.1 having a capacity of more than 450 litres;

**NOTE:** *For UN MEGCs, see Chapter 6.7.*

## N

*"Net explosive mass (NEM)"* means the total mass of the explosive substances, without the packagings, casings, etc. (*net explosive quantity (NEQ)*, *net explosive contents (NEC)*, *net explosive weight (NEW)* or *net mass of explosive contents* are often used to convey the same meaning);

*"Neutron radiation detector"* means a device that detects neutron radiation. In such a device, a gas may be contained in a hermetically sealed electron tube transducer that converts neutron radiation into a measureable electric signal;

*"N.O.S. entry (not otherwise specified entry)"* means a collective entry to which substances, mixtures, solutions or articles may be assigned if they:

- (a) Are not mentioned by name in Table A of Chapter 3.2; and
- (b) Exhibit chemical, physical and/or dangerous properties corresponding to the Class, classification code, packing group and the name and description of the n.o.s. entry;

## O

*"Offshore bulk container"* means a bulk container specially designed for repeated use for carriage to, from and between offshore facilities. An offshore bulk container is designed and constructed in accordance with the guidelines for the approval of offshore containers handled in open seas specified by the International Maritime Organization (IMO) in document MSC/Circ.860;

*"Open container"*, see *"Container"*;

*"Open cryogenic receptacle"* means a transportable thermally insulated receptacle for refrigerated liquefied gases maintained at atmospheric pressure by continuous venting of the refrigerated liquefied gas;

*"Open vehicle"* means a vehicle the platform of which has no superstructure or is merely provided with side boards and a tailboard;

*"Outer packaging"* means the outer protection of the composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings;

*"Over-moulded cylinder"* means a cylinder intended for the carriage of LPG with a water capacity not exceeding 13 litres made of a coated welded steel inner cylinder shell with an over-moulded protective case made from cellular plastic, which is non-removable and bonded to the outer surface of the steel cylinder shell wall;

*"Overpack"* means an enclosure used (by a single consignor in the case of radioactive material) to contain one or more packages, consolidated into a single unit easier to handle and stow during carriage;

Examples of overpacks:

- (a) A loading tray such as a pallet, on which several packages are placed or stacked and secured by a plastics strip, shrink or stretch wrapping or other appropriate means; or
- (b) An outer protective packaging such as a box or a crate;

## P

*"Package"* means the complete product of the packing operation, consisting of the packaging or large packaging or IBC and its contents prepared for dispatch. The term includes receptacles for gases as defined in this section as well as articles which, because of their size, mass or configuration may be carried unpackaged or carried in cradles, crates or handling devices. Except for the carriage of radioactive material, the term does not apply to goods which are carried in bulk, nor to substances carried in tanks;

*NOTE: For radioactive material, see 2.2.7.2, 4.1.9.1.1 and Chapter 6.4.*

*"Packaging"* means one or more receptacles and any other components or materials necessary for the receptacles to perform their containment and other safety functions (see also *"Combination packaging"*, *"Composite packaging"*, *"Inner packaging"*, *"Intermediate bulk container (IBC)"*, *"Intermediate packaging"*, *"Large packaging"*, *"Light-gauge metal packaging"*, *"Outer packaging"*, *"Reconditioned packaging"*, *"Remanufactured packaging"*, *"Reused packaging"*, *"Salvage packaging"* and *"Sift-proof packaging"*);

*"Packer"* means any enterprise which puts dangerous goods into packagings, including large packagings and intermediate bulk containers (IBCs) and, where necessary, prepares packages for carriage;

*"Packing group"* means a group to which, for packing purposes, certain substances may be assigned in accordance with their degree of danger. The packing groups have the following meanings which are explained more fully in Part 2:

Packing group I: Substances presenting high danger;

Packing group II: Substances presenting medium danger; and

Packing group III: Substances presenting low danger;

*"Portable tank"* means a multimodal tank having, when used for the carriage of gases as defined in 2.2.2.1.1, a capacity of more than 450 litres in accordance with the definitions in Chapter 6.7 or the IMDG Code and indicated by a portable tank instruction (T-Code) in column (10) of Table A of Chapter 3.2;

*"Portable tank operator"*, see *"Tank-container/portable tank operator"*;

*"Pressure drum"* means a welded pressure receptacle of a water capacity exceeding 150 litres and of not more than 1 000 litres, (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids);"

*"Pressure receptacle"* means a transportable receptacle intended for holding substances under pressure including its closure(s) and other service equipment and is a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles, metal hydride storage systems, bundles of cylinders and salvage pressure receptacles;

*"Pressure receptacle shell"* means a cylinder, a tube, a pressure drum or a salvage pressure receptacle without its closures or other service equipment, but including any permanently attached device(s) (e.g. neck ring, foot ring);

**NOTE:** The terms *"cylinder shell"*, *"pressure drum shell"* and *"tube shell"* are also used.

*"Pressurized gas cartridge"*, see *"Aerosol or aerosol dispenser"*;

*"Protected IBC"* (for metal IBCs) means an IBC provided with additional protection against impact, the protection taking the form of, for example, a multi-layer (sandwich) or double-wall construction, or a frame with a metal lattice-work casing;

*"Protective lining"* (for tanks) means a lining or coating protecting the metallic tank material against the substances to be carried;

**NOTE:** This definition does not apply to a lining or coating used only to protect the substance to be carried.

## Q

*"Quality assurance"* means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing confidence that the safety prescriptions in ADR are met in practice;

## R

*"Radiation detection system"* means an apparatus that contains radiation detectors as components;

*"Radioactive contents"*, for the carriage of radioactive material, mean the radioactive material together with any contaminated or activated solids, liquids, and gases within the packaging;

*"Receptacle"* (Class 1) includes boxes, bottles, cans, drums, jars and tubes, including any means of closure used in the inner or intermediate packaging;

*"Receptacle"* means a containment vessel for receiving and holding substances or articles, including any means of closing. This definition does not apply to shells (see also *"Closed cryogenic receptacle"*, *"Open cryogenic receptacles"*, *"Inner receptacle"*, *"Pressure receptacle"*, *"Rigid inner receptacle"* and *"Gas cartridge"*);

*"Reconditioned packaging"* means in particular

- (a) Metal drums that are:
  - (i) Cleaned to original materials of construction, with all former contents, internal and external corrosion, and external coatings and labels removed;
  - (ii) Restored to original shape and contour, with chimes (if any) straightened and sealed and all non-integral gaskets replaced; and
  - (iii) Inspected after cleaning but before painting, with rejection of packagings with visible pitting, significant reduction in the material thickness, metal fatigue, damaged threads or closures or other significant defects;
- (b) Plastics drums and jerricans that:
  - (i) Are cleaned to original materials of construction, with all former contents, external coatings and labels removed;
  - (ii) Have all non-integral gaskets replaced; and
  - (iii) Are inspected after cleaning with rejection of packagings with visible damage such as tears, creases or cracks, or damaged threads or closures or other significant defects;

*"Recycled plastics material"* means material recovered from used industrial packagings or from other plastics material that has been pre-sorted and prepared for processing into new packagings, including IBCs. The specific properties of the recycled material used for production of new packagings, including IBCs, shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material, which is of homogeneous composition, is consistent with the material specifications (melt flow rate, density, and tensile properties) of the design type manufactured from such recycled material. This necessarily includes knowledge about the plastics material from which the recycled plastics have been derived, as well as awareness of the prior use, including prior contents, of the plastics material if that prior use might reduce the capability of new packagings, including IBCs, produced using that material. In addition, the packaging or IBC manufacturer's quality assurance programme under 6.1.1.4 or 6.5.4.1 shall include performance of the appropriate mechanical design type tests in 6.1.5 or 6.5.6 on packagings or IBCs, manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing;

*NOTE: ISO 16103:2005 "Packaging – Transport packages for dangerous goods – Recycled plastics material", provides additional guidance on procedures which may be followed in approving the use of recycled plastics material. These guidelines have been developed based on the experience of the manufacturing of drums and jerricans from recycled plastics material and as such may need to be adapted for other types of packagings, IBCs and large packagings made of recycled plastics material.*

*"Reel"* (Class 1) means a device made of plastics, wood, fibreboard, metal or other suitable material comprising a central spindle with, or without, side walls at each end of the spindle. Articles and substances can be wound onto the spindle and may be retained by side walls;

*"Reference steel"* means a steel with a tensile strength of 370 N/mm<sup>2</sup> and an elongation at fracture of 27 %;

*"Remanufactured IBC"*, see *"Intermediate Bulk Container (IBC)"*;

*"Remanufactured large packaging"* means a metal or rigid plastics large packaging that:

- (a) Is produced as a UN type from a non-UN type; or
- (b) Is converted from one UN design type to another UN design type.

Remanufactured large packagings are subject to the same requirements of ADR that apply to new large packagings of the same type (see also design type definition in 6.6.5.1.2);

*"Remanufactured packaging"* means in particular

- (a) Metal drums that:
  - (i) Are produced as a UN type complying with the requirements of Chapter 6.1 from a non-UN type;
  - (ii) Are converted from one UN type complying with the requirements of Chapter 6.1 to another UN type; or
  - (iii) Undergo the replacement of integral structural components (such as non-removable heads);
- (b) Plastics drums that:
  - (i) Are converted from one UN type to another UN type (e.g. 1H1 to 1H2); or
  - (ii) Undergo the replacement of integral structural components.

Remanufactured drums are subject to the requirements of Chapter 6.1 which apply to new drums of the same type;

*"Repaired IBC"*, see *"Intermediate Bulk Container (IBC)"*;

*"Reused large packaging"* means a large packaging to be refilled which has been examined and found free of defects affecting the ability to withstand the performance tests; the term includes those which are refilled with the same or similar compatible contents and are carried within distribution chains controlled by the consignor of the product;

*"Reused packaging"* means a packaging which has been examined and found free of defects affecting the ability to withstand the performance tests. The term includes those which are refilled with the same or similar compatible contents and are carried within distribution chains controlled by the consignor of the product;

*"Rigid inner receptacle"* (for composite IBCs) means a receptacle which retains its general shape when empty without its closures in place and without benefit of the outer casing. Any inner receptacle that is not "rigid" is considered to be "flexible";

*"Rigid plastics IBC"* means a rigid plastics body, which may have structural equipment together with appropriate service equipment;

*"Routine maintenance of flexible IBCs"*, see *"Intermediate Bulk Container (IBC)"*;

*"Routine maintenance of rigid IBCs"*, see *"Intermediate Bulk Container (IBC)"*;

## S

*"Safety valve"* means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the tank against unacceptable excess internal pressure;

*"Salvage packaging"* means a special packaging into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;

*"Salvage pressure receptacle"* means a pressure receptacle with a water capacity not exceeding 3 000 litres into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of carriage e.g. for recovery or disposal;

*"Self-accelerating decomposition temperature"* (SADT), means the lowest temperature at which self-accelerating decomposition may occur in a substance in the packaging, IBC or tank as offered for carriage. The SADT shall be determined in accordance with the test procedures given in Part II, Section 28 of the *Manual of Tests and Criteria*;

*"Self-accelerating polymerization temperature (SAPT)"* means the lowest temperature at which self-accelerating polymerization may occur with a substance in the packaging, IBC or tank as offered for carriage. The SAPT shall be determined in accordance with the test procedures established for the self-accelerating decomposition temperature for self-reactive substances in accordance with Part II, section 28 of the *Manual of Tests and Criteria*;

*"Service equipment"*

- (a) Of the tank means filling and discharge, breather, safety, heating, heat insulating and additive devices and measuring instruments;
- (b) Of the elements of a battery-vehicle or of a MEGC means filling and discharge devices, including the manifold, safety devices and measuring instruments;
- (c) Of an IBC means the filling and discharge devices and any pressure-relief or venting, safety, heating and heat insulating devices and measuring instruments;
- (d) Of a pressure receptacle, means closures, manifolds, piping, porous, absorbent or adsorbent material and any structural devices, e.g. for handling;

*NOTE: For portable tanks, see Chapter 6.7.*

*"Service life"*, for composite cylinders and tubes, means the number of years the cylinder or tube is permitted to be in service;

*"Settled pressure"* means the pressure of the contents of a pressure receptacle in thermal and diffusive equilibrium;

*"Sheeted bulk container"*, see *"Bulk container"*;

*"Sheeted container"*, see *"Container"*;

*"Sheeted vehicle"* means an open vehicle provided with a sheet to protect the load;

*"Shell"* (for tanks), means the part of the tank which retains the substance intended for carriage, including openings and their closures, but does not include service equipment or external structural equipment;

*NOTE: For portable tanks, see Chapter 6.7.*

*"Sift-proof packaging"* means a packaging impermeable to dry contents, including fine solid material produced during carriage;

*"Small container"*, see *"Container"*;

*"Small receptacle containing gas (gas cartridge)"* means a non-refillable receptacle having a water capacity not exceeding 1000 ml for receptacles made of metal and not exceeding 500 ml for receptacles made of synthetic material or glass, containing, under pressure, a gas or a mixture of gases. It may be fitted with a valve;

*"Solid"* means:

- (a) A substance with a melting point or initial melting point of more than 20 °C at a pressure of 101.3 kPa; or
- (b) A substance which is not liquid according to the ASTM D 4359-90 test method or which is pasty according to the criteria applicable to the test for determining fluidity ( penetrometer test) described in 2.3.4;

*"Structural equipment"*

- (a) For tanks of a tank-vehicle or demountable tank, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;
- (b) For tanks of a tank-container, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;

- (c) For elements of a battery-vehicle or an MEGC means the external or internal reinforcing, fastening, protective or stabilizing members of the shell or receptacle;
- (d) For IBCs other than flexible IBCs means the reinforcing, fastening, handling, protective or stabilizing members of the body (including the base pallet for composite IBCs with plastics inner receptacle);

*NOTE: For portable tanks, see Chapter 6.7.*

*"Swap body", see "Container";*

**T**

*"Tank"* means a shell, including its service and structural equipment. When used alone, the term tank means a tank-container, portable tank, demountable tank or fixed tank as defined in this Section, including tanks forming elements of battery-vehicles or MEGCs (see also *"Demountable tank"*, *"Fixed tank"*, *"Portable tank"* and *"Multiple-element gas container"*);

*"Tank-container"* means an article of transport equipment meeting the definition of a container, and comprising a shell and items of equipment, including the equipment to facilitate movement of the tank-container without significant change of attitude, used for the carriage of gases, liquid, powdery or granular substances and, when used for the carriage of gases as defined in 2.2.2.1.1, having a capacity of more than 0.45 m<sup>3</sup> (450 litres);

*NOTE: IBCs which meet the requirements of Chapter 6.5 are not considered to be tank-containers.*

*"Tank-container or portable tank operator"* means any enterprise in whose name the tank-container or portable tank is operated;

In addition:

*"Extra-large tank-container"* means a tank-container with a capacity of more than 40 000 litres.

*"Tank record"* means a file containing all the important technical information concerning a tank, a battery-vehicle or a MEGC, such as certificates referred to in 6.8.2.3, 6.8.2.4 and 6.8.3.4;

*"Tank swap body"* is considered to be a tank-container;

*"Tank-vehicle"* means a vehicle built to carry liquids, gases or powdery or granular substances and comprising one or more fixed tanks. In addition to the vehicle proper, or the units of running gear used in its stead, a tank-vehicle comprises one or more shells, their items of equipment and the fittings for attaching them to the vehicle or to the running-gear units;

*"Technical name"* means a recognized chemical name, if relevant a biological name, or other name currently used in scientific and technical handbooks, journals and texts (see 3.1.2.8.1.1);

*"Test pressure"* means the required pressure applied during a pressure test for initial or periodic inspection (see also *"Calculation pressure"*, *"Discharge pressure"*, *"Filling pressure"* and *"Maximum working pressure (gauge pressure)"*);

*NOTE: For portable tanks, see Chapter 6.7.*

*"Through or into"*, for the carriage of radioactive material, means through or into the countries in which a consignment is carried but specifically excludes countries "over" which a consignment is carried by air provided that there are no scheduled stops in those countries;

*"Transport index (TI)"* assigned to a package, overpack or container, or to unpackaged LSA-I or SCO-I or SCO-III, for the carriage of radioactive material, means a number which is used to provide control over radiation exposure;

*"Transport unit"* means a motor vehicle without an attached trailer, or a combination consisting of a motor vehicle and an attached trailer;

*"Tray"* (Class 1) means a sheet of metal, plastics, fibreboard or other suitable material which is placed in the inner, intermediate or outer packaging and achieves a close-fit in such packaging. The surface of

the tray may be shaped so that packagings or articles can be inserted, held secure and separated from each other;

*"Tube"* (Class 2) means a pressure receptacle of seamless or composite construction having a water capacity exceeding 150 litres and of not more than 3 000 litres;

## U

*"Undertaking"*, see *"Enterprise"*;

*"Unloader"* means any enterprise which:

- (a) Removes a container, bulk-container, MEGC, tank-container or portable tank from a vehicle; or
- (b) Unloads packaged dangerous goods, small containers or portable tanks out of or from a vehicle or a container; or
- (c) Discharges dangerous goods from a tank (tank-vehicle, demountable tank, portable tank or tank-container) or from a battery-vehicle, MEMU or MEGC or from a vehicle, large container or small container for carriage in bulk or a bulk-container;

*"Unloading"* means all actions carried out by the unloader, in accordance with the definition of unloader;

*"UN Model Regulations"* means the Model Regulations annexed to the twenty-third revised edition of the *Recommendations on the Transport of Dangerous Goods* published by the United Nations (ST/SG/AC.10/1/Rev.23);

*"UN number"* means the four-figure identification number of the substance or article taken from the UN Model Regulations;

*"UN Regulation"* means a regulation annexed to the *Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles equipment and parts which can be fitted and or used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions* (1958 Agreement, as amended);

## V

*"Vacuum-operated waste tank"* means a fixed tank, demountable tank, tank-container or tank swap body primarily used for the carriage of dangerous wastes, with special constructional features and/or equipment to facilitate the filling and discharging of wastes as specified in Chapter 6.10. A tank which fully complies with the requirements of Chapter 6.7 or 6.8 is not considered to be a vacuum-operated waste tank;

*"Vacuum valve"* means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the tank against unacceptable negative internal pressure;

*"Vehicle"* see *"Battery-vehicle"*, *"Closed vehicle"*, *"Open vehicle"*, *"Sheeted vehicle"* and *"Tank-vehicle"*;

## W

*"Wastes"* means substances, solutions, mixtures or articles for which no direct use is envisaged but which are transported for reprocessing, dumping, elimination by incineration or other methods of disposal;

*"Wooden barrel"* means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops;

*"Wooden IBC"* means a rigid or collapsible wooden body, together with an inner liner (but no inner packaging) and appropriate service and structural equipment;

*"Working pressure"*

- (a) For a compressed gas, means the settled pressure at a reference temperature of 15 °C in a full pressure receptacle;

(b) For UN No. 1001 acetylene, dissolved, means the calculated settled pressure at a uniform reference temperature of 15 °C in an acetylene cylinder containing the specified solvent content and the maximum acetylene content;

(c) For UN No. 3374 acetylene, solvent free, means the working pressure which was calculated for the equivalent cylinder for UN No. 1001 acetylene, dissolved;

**NOTE:** For tanks, see "Maximum working pressure".

"Woven plastics" (for flexible IBCs) means a material made from stretch tapes or monofilaments of suitable plastics material.

## 1.2.2 Units of measurement

1.2.2.1 The following units of measurement <sup>a</sup> are applicable in ADR:

Measurement of	SI Unit <sup>b</sup>	Acceptable alternative unit	Relationship between units
Length	m (metre)	-	-
Area	m <sup>2</sup> (square metre)	-	-
Volume	m <sup>3</sup> (cubic metre)	l <sup>c</sup> (litre)	1 l = 10 <sup>-3</sup> m <sup>3</sup>
Time	s (second)	min (minute)	1 min = 60 s
		h (hour)	1 h = 3 600 s
		d (day)	1 d = 86 400 s
Mass	kg (kilogram)	g (gram)	1 g = 10 <sup>-3</sup> kg
		t (tonne)	1 t = 10 <sup>3</sup> kg
Mass density	kg/m <sup>3</sup>	kg/l	1 kg/l = 10 <sup>3</sup> kg/m <sup>3</sup>
Temperature	K (kelvin)	°C (degree Celsius)	0 °C = 273.15 K
Temperature difference	K (kelvin)	°C (degree Celsius)	1 °C = 1 K
Force	N (newton)	-	1 N = 1 kg · m/s <sup>2</sup>
Pressure	Pa (pascal)	bar (bar)	1 Pa = 1 N/m <sup>2</sup>
		N/mm <sup>2</sup>	1 bar = 10 <sup>5</sup> Pa
Stress	N/m <sup>2</sup>	kWh (kilowatt-hours)	1 N/mm <sup>2</sup> = 1 MPa
Work			1 kWh = 3.6 MJ
Energy	J (joule)		1 J = 1 N.m = 1 W.s
Quantity of heat		eV (electronvolt)	1 eV = 0.1602 H 10 <sup>-18</sup> J
Power	W (watt)	-	1 W = 1 J/s = 1 N.m/s
Electrical resistance	Ω (ohm)	-	1 Ω = 1 kg · m <sup>2</sup> · s <sup>-3</sup> · A <sup>-2</sup>
Kinematic viscosity	m <sup>2</sup> /s	mm <sup>2</sup> /s	1 mm <sup>2</sup> /s = 10 <sup>-6</sup> m <sup>2</sup> /s
Dynamic viscosity	Pa.s	mPa.s	1 mPa.s = 10 <sup>-3</sup> Pa.s
Activity	Bq (becquerel)		
Dose equivalent	Sv (sievert)		

<sup>a</sup> The following round figures are applicable for the conversion of the units hitherto used into SI Units.

<u>Force</u>		<u>Stress</u>	
1 kg	= 9.807 N	1 kg/mm <sup>2</sup>	= 9.807 N/mm <sup>2</sup>
1 N	= 0.102 kg	1 N/mm <sup>2</sup>	= 0.102 kg/mm <sup>2</sup>
<u>Pressure</u>			
1 Pa	= 1 N/m <sup>2</sup>	= 10 <sup>-5</sup> bar	= 1.02 × 10 <sup>-5</sup> kg/cm <sup>2</sup>
1 bar	= 10 <sup>5</sup> Pa	= 1.02 kg/cm <sup>2</sup>	= 750 torr
1 kg/cm <sup>2</sup>	= 9.807 × 10 <sup>4</sup> Pa	= 0.9807 bar	= 736 torr
1 torr	= 1.33 × 10 <sup>2</sup> Pa	= 1.33 × 10 <sup>-3</sup> bar	= 1.36 × 10 <sup>-3</sup> kg/cm <sup>2</sup>

<u>Energy, Work, Quantity of heat</u>			
1 J	= 1 N.m	= 0.278 × 10 <sup>-6</sup> kWh	= 0.102 kgm
1 kWh	= 3.6 × 10 <sup>6</sup> J	= 367 × 10 <sup>3</sup> kgm	= 0.239 × 10 <sup>-3</sup> kcal
1 kgm	= 9.807 J	= 2.72 × 10 <sup>-6</sup> kWh	= 860 kcal
1 kcal	= 4.19 × 10 <sup>3</sup> J	= 1.16 × 10 <sup>-3</sup> kWh	= 2.34 × 10 <sup>-3</sup> kcal

<u>Power</u>		
$1 W$	$= 0.102 \text{ kgm/s}$	$= 0.86 \text{ kcal/h}$
$1 \text{ kgm/s}$	$= 9.807 W$	$= 8.43 \text{ kcal/h}$
$1 \text{ kcal/h}$	$= 1.16 W$	$= 0.119 \text{ kgm/s}$

<u>Kinematic viscosity</u>		
$1 \text{ m}^2/\text{s}$	$= 10^4 \text{ St (Stokes)}$	
$1 \text{ St}$		$= 10^{-4} \text{ m}^2/\text{s}$

Dynamic viscosity

$1 \text{ Pas}$	$= 1 \text{ N.s/m}^2$	$= 10 P (\text{poise})$	$= 0.102 \text{ kg.s/m}^2$
$1 P$	$= 0.1 \text{ Pas}$	$= 0.1 \text{ N.s/m}^2$	$= 1.02 \times 10^{-2} \text{ kg.s/m}^2$
$1 \text{ kg.s/m}^2$	$= 9.807 \text{ Pas}$	$= 9.807 \text{ N.s/m}^2$	$= 98.07 P$

<sup>b</sup> The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92 310 Sèvres).

<sup>c</sup> The abbreviation "L" for litre may also be used in place of the abbreviation "l" when a typewriter cannot distinguish between figure "1" and letter "l".

The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

<u>Factor</u>		<u>Prefix</u>	<u>Symbol</u>	
$1\ 000\ 000\ 000\ 000\ 000\ 000$	$= 10^{18}$	quintillion	exa	E
$1\ 000\ 000\ 000\ 000\ 000$	$= 10^{15}$	quadrillion	peta	P
$1\ 000\ 000\ 000\ 000$	$= 10^{12}$	trillion	tera	T
$1\ 000\ 000\ 000$	$= 10^9$	billion	giga	G
$1\ 000\ 000$	$= 10^6$	million	mega	M
$1\ 000$	$= 10^3$	thousand	kilo	k
$100$	$= 10^2$	hundred	hecto	h
$10$	$= 10^1$	ten	deca	da
$0.1$	$= 10^{-1}$	tenth	deci	d
$0.01$	$= 10^{-2}$	hundredth	centi	c
$0.001$	$= 10^{-3}$	thousandth	milli	m
$0.000\ 001$	$= 10^{-6}$	millionth	micro	$\mu$
$0.000\ 000\ 001$	$= 10^{-9}$	billionth	nano	n
$0.000\ 000\ 000\ 001$	$= 10^{-12}$	trillionth	pico	p
$0.000\ 000\ 000\ 000\ 001$	$= 10^{-15}$	quadrillionth	femto	f
$0.000\ 000\ 000\ 000\ 000\ 001$	$= 10^{-18}$	quintillionth	atto	a

**NOTE:**  $10^9$  billion is United Nations usage in English. By analogy, so is  $10^{-9} = 1$  billionth.

1.2.2.2 Unless expressly stated otherwise, the sign "%" in ADR represents:

- (a) In the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid, a percentage mass based on the total mass of the mixture, the solution or the wetted solid;
- (b) In the case of mixtures of compressed gases, when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;
- (c) In the case of mixtures of liquefied gases and dissolved gases, the proportion of the mass indicated as a percentage of the total mass of the mixture.

1.2.2.3 Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.

1.2.2.4 Where ADR specifies a degree of filling for receptacles, this is always related to a reference temperature of the substances of 15 °C, unless some other temperature is indicated.

**1.2.3 List of abbreviations**

In ADR, abbreviations, acronyms and abbreviated designations of regulatory texts are used, with the following meaning:

**A**

*"ADN"*<sup>\*</sup> means the *European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways*;

*"ASTM"* means the American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959, United States of America), [www.astm.org](http://www.astm.org);

**C**

*"CGA"* means the Compressed Gas Association, 8484 Westpark Drive, Suite 220, McLean, Virginia 22102, United States of America, [www.cganet.com](http://www.cganet.com);

*"CIM"*<sup>\*\*</sup> means the *Uniform Rules Concerning the Contract of International Carriage of Goods by Rail* (Appendix B to the Convention concerning International Carriage by Rail (COTIF)), as amended;

*"CMR"*<sup>\*\*\*</sup> means the *Convention on the Contract for the International Carriage of Goods by Road* (Geneva, 19 May 1956), as amended;

*"CNG"* means compressed natural gas (see 1.2.1);

*"CSC"* means the *International Convention for Safe Containers* (Geneva, 1972) as amended and published by the International Maritime Organization (IMO), London;

*"CSI"* means criticality safety index (see 1.2.1);

**E**

*"EIGA"* means European Industrial Gas Association, 30 Avenue de l'Astronomie, 1210 Brussels (Belgium), [www.eiga.eu](http://www.eiga.eu);

*"EN"* (standard) means a European standard published by the European Committee for Standardization (CEN) (Avenue Marnix 17, B-1000 Brussels, Belgium), [www.cen.eu](http://www.cen.eu);

**F**

*"FRP"* means fibre-reinforced plastics (see 1.2.1);

**G**

*"GHS"* means Globally Harmonized System of Classification and Labelling of Chemicals (see 1.2.1);

**I**

*"IAEA"* means the International Atomic Energy Agency, P.O. Box 100, 1400 Vienna, Austria, [www.iaea.org](http://www.iaea.org);

*"IBC"* means intermediate bulk container (see 1.2.1);

<sup>\*</sup> The acronym "ADN" corresponds to the French term "Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures".

<sup>\*\*</sup> The acronym "CIM" corresponds to the French term "Contrat de transport international ferroviaire de marchandises".

<sup>\*\*\*</sup> The acronym "CMR" corresponds to the French term "Convention relative au contrat de transport international de marchandises par route".

"*ICAO*" means the International Civil Aviation Organization, 999 University Street, Montreal, Quebec H3C 5H7, Canada, [www.icao.org](http://www.icao.org);

"*IMDG*" see definition of "*IMDG Code*" in 1.2.1;

"*IMO*" means the International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, [www.imo.org](http://www.imo.org);

"*ISO*" (standard) means an international standard published by the International Organization for Standardization, 1, rue de Varembé, 1204 Geneva 20, Switzerland, [www.iso.org](http://www.iso.org);

## L

"*LNG*" means liquefied natural gas (see 1.2.1);

"*LPG*" means liquefied petroleum gas (see 1.2.1);

"*LSA*" (material) means low specific activity material (see 2.2.7.1.3);

## M

"*MEGC*" means multiple-element gas container (see 1.2.1);

"*MEMU*" means mobile explosives manufacturing unit (see 1.2.1);

## N

"*N.O.S.*" means not otherwise specified entry (see 1.2.1);

## R

"*RID*" means the *Regulations concerning the International Carriage of Dangerous Goods by Rail* (Appendix C of COTIF (Convention concerning international carriage by rail));

## S

"*SADT*" means self-accelerating decomposition temperature (see 1.2.1);

"*SAPT*" means self-accelerating polymerization temperature (see 1.2.1);

"*SCO*" means surface contaminated object (see 2.2.7.1.3);

## T

"*TI*" means transport index (see 1.2.1);

## U

"*UIC*"<sup>f</sup> means the International Union of Railways, 16 rue Jean Rey, 75015 Paris, France, [www.uic.org](http://www.uic.org);

"*UNECE*" means the United Nations Economic Commission for Europe, Palais des Nations, 8-14 avenue de la Paix, 1211 Geneva 10, Switzerland, [www.unece.org](http://www.unece.org).

<sup>f</sup> The acronym "*UIC*" corresponds to the French term "*Union internationale des chemins de fer*".

## CHAPTER 1.3

### TRAINING OF PERSONS INVOLVED IN THE CARRIAGE OF DANGEROUS GOODS

#### 1.3.1 Scope and applicability

Persons employed by the participants referred to in Chapter 1.4, whose duties concern the carriage of dangerous goods, shall be trained in the requirements governing the carriage of such goods appropriate to their responsibilities and duties. Employees shall be trained in accordance with 1.3.2 before assuming responsibilities and shall only perform functions, for which required training has not yet been provided, under the direct supervision of a trained person. Training requirements specific to security of dangerous goods in Chapter 1.10 shall also be addressed.

*NOTE 1: With regard to the training for the safety adviser, see 1.8.3 instead of this section.*

*NOTE 2: With regard to the training of the vehicle crew, see Chapter 8.2 instead of this section.*

*NOTE 3: For training with regard to Class 7, see also 1.7.2.5.*

#### 1.3.2 Nature of the training

The training shall take the following form, appropriate to the responsibility and duties of the individual concerned.

##### 1.3.2.1 General awareness training

Personnel shall be familiar with the general requirements of the provisions for the carriage of dangerous goods.

##### 1.3.2.2 Function-specific training

Personnel shall be trained, commensurate directly with their duties and responsibilities in the requirements of the regulations concerning the carriage of dangerous goods.

Where the carriage of dangerous goods involves a multimodal transport operation, the personnel shall be aware of the requirements concerning other transport modes.

##### 1.3.2.3 Safety training

Commensurate with the degree of risk of injury or exposure arising from an incident involving the carriage of dangerous goods, including loading and unloading, personnel shall be trained in the hazards and dangers presented by dangerous goods.

The training provided shall aim to make personnel aware of the safe handling and emergency response procedures.

##### 1.3.2.4 The training shall be periodically supplemented with refresher training to take account of changes in regulations.

#### 1.3.3 Documentation

Records of training received according to this Chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority. Records of training shall be verified upon commencing a new employment.



## CHAPTER 1.4

### SAFETY OBLIGATIONS OF THE PARTICIPANTS

#### 1.4.1 General safety measures

1.4.1.1 The participants in the carriage of dangerous goods shall take appropriate measures according to the nature and the extent of foreseeable dangers, so as to avoid damage or injury and, if necessary, to minimize their effects. They shall, in all events, comply with the requirements of ADR in their respective fields.

1.4.1.2 When there is an immediate risk that public safety may be jeopardized, the participants shall immediately notify the emergency services and shall make available to them the information they require to take action.

1.4.1.3 ADR may specify certain of the obligations falling to the various participants.

If a Contracting Party considers that no lessening of safety is involved, it may in its domestic legislation transfer the obligations falling to a specific participant to one or several other participants, provided that the obligations of 1.4.2 and 1.4.3 are met. These derogations shall be communicated by the Contracting Party to the Secretariat of the United Nations Economic Commission for Europe which will bring them to the attention of the Contracting Parties.

The requirements of 1.2.1, 1.4.2 and 1.4.3 concerning the definitions of participants and their respective obligations shall not affect the provisions of domestic law concerning the legal consequences (criminal nature, liability, etc.) stemming from the fact that the participant in question is e.g. a legal entity, a self-employed worker, an employer or an employee.

#### 1.4.2 Obligations of the main participants

*NOTE 1: Several participants to which safety obligations are assigned in this section may be one and the same enterprise. Also, the activities and the corresponding safety obligations of a participant can be assumed by several enterprises.*

*NOTE 2: For radioactive material, see also 1.7.6.*

#### 1.4.2.1 Consignor

1.4.2.1.1 The consignor of dangerous goods is required to hand over for carriage only consignments which conform to the requirements of ADR. In the context of 1.4.1, he shall in particular:

- (a) Ascertain that the dangerous goods are classified and authorized for carriage in accordance with ADR;
- (b) Furnish the carrier with information and data in a traceable form and, if necessary, the required transport documents and accompanying documents (authorizations, approvals, notifications, certificates, etc.), taking into account in particular the requirements of Chapter 5.4 and of the tables in Part 3;
- (c) Use only packagings, large packagings, intermediate bulk containers (IBCs) and tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks and tank-containers) approved for and suited to the carriage of the substances concerned and bearing the marks prescribed by ADR;
- (d) Comply with the requirements on the means of dispatch and on forwarding restrictions;
- (e) Ensure that even empty uncleared and not degassed tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks and tank-containers) or empty uncleared vehicles and containers for carriage in bulk are placarded, marked and labelled in accordance with Chapter 5.3 and that empty uncleared tanks are closed and present the same degree of leakproofness as if they were full;

(f) In the case of tank-containers and portable tanks carrying refrigerated liquefied gases ensure that the actual holding time is determined if applicable or, in the case of empty, uncleared tank-containers and portable tanks, ensure that the pressure is sufficiently reduced.

1.4.2.1.2 If the consignor uses the services of other participants (packer, loader, filler, etc.), he shall take appropriate measures to ensure that the consignment meets the requirements of ADR. He may, however, in the case of 1.4.2.1.1 (a), (b), (c) and (e), rely on the information and data made available to him by other participants.

1.4.2.1.3 When the consignor acts on behalf of a third party, the latter shall inform the consignor in writing that dangerous goods are involved and make available to him all the information and documents he needs to perform his obligations.

#### 1.4.2.2 *Carrier*

1.4.2.2.1 In the context of 1.4.1, where appropriate, the carrier shall in particular:

- (a) Ascertain that the dangerous goods to be carried are authorized for carriage in accordance with ADR;
- (b) Ascertain that all information prescribed in ADR related to the dangerous goods to be carried has been provided by the consignor before carriage, that the prescribed documentation is on board the transport unit or if electronic data processing (EDP) or if electronic data interchange (EDI) techniques are used instead of paper documentation, that data is available during transport in a manner at least equivalent to that of paper documentation;
- (c) Ascertain visually that the vehicles and loads have no obvious defects, leakages or cracks, missing equipment, etc.;
- (d) Ascertain that the date specified for the next inspection for tank-vehicles, battery-vehicles, demountable tanks, portable tanks, tank-containers and MEGCs has not expired;

*NOTE: Tanks, battery-vehicles and MEGCs may however be carried after the expiry of this deadline under the conditions of 4.1.6.10 (in the case of battery-vehicles and MEGCs containing pressure receptacles as elements), 4.2.4.4, 4.3.2.3.7, 4.3.2.4.4, 6.7.2.19.6, 6.7.3.15.6 or 6.7.4.14.6.*

- (e) Verify that the vehicles are not overloaded;
- (f) Ascertain that the placards, marks and orange-coloured plates prescribed for the vehicles in Chapter 5.3 have been affixed;
- (g) Ascertain that the equipment prescribed in ADR for the transport unit, vehicle crew and certain classes is on board the transport unit.

Where appropriate, this shall be done on the basis of the transport documents and accompanying documents, by a visual inspection of the vehicle or the containers and, where appropriate, the load.

1.4.2.2.2 The carrier may, however, in the case of 1.4.2.2.1 (a), (b), (e) and (f), rely on information and data made available to him by other participants. In the case of 1.4.2.2.1 (c) he may rely on what is certified in the "container/vehicle packing certificate" provided in accordance with 5.4.2.

1.4.2.2.3 If the carrier observes an infringement of the requirements of ADR, in accordance with 1.4.2.2.1, he shall not forward the consignment until the matter has been rectified.

1.4.2.2.4 If, during the journey, an infringement which could jeopardize the safety of the operation is observed, the consignment shall be halted as soon as possible bearing in mind the requirements of traffic safety, of the safe immobilisation of the consignment, and of public safety. The transport operation may only be continued once the consignment complies with applicable regulations. The competent authority(ies) concerned by the rest of the journey may grant an authorization to pursue the transport operation.

In case the required compliance cannot be achieved and no authorization is granted for the rest of the journey, the competent authority(ies) shall provide the carrier with the necessary administrative assistance. The same shall apply in case the carrier informs this/these competent authority(ies) that the dangerous nature of the goods carried was not communicated to him by the consignor and that he wishes, by virtue of the law applicable in particular to the contract of carriage, to unload, destroy or render the goods harmless.

1.4.2.2.5 *(Reserved)*

1.4.2.2.6 The carrier shall provide the vehicle crew with the instructions in writing as prescribed in ADR.

1.4.2.3 *Consignee*

1.4.2.3.1 The consignee has the obligation not to defer acceptance of the goods without compelling reasons and to verify, after unloading, that the requirements of ADR concerning him have been complied with.

1.4.2.3.2 If, in the case of a container, this verification brings to light an infringement of the requirements of ADR, the consignee shall return the container to the carrier only after the infringement has been remedied.

1.4.2.3.3 If the consignee makes use of the services of other participants (unloader, cleaner, decontamination facility, etc.) he shall take appropriate measures to ensure that the requirements of 1.4.2.3.1 and 1.4.2.3.2 of ADR have been complied with.

1.4.3 **Obligations of the other participants**

A non-exhaustive list of the other participants and their respective obligations is given below. The obligations of the other participants flow from section 1.4.1 above insofar as they know or should have known that their duties are performed as part of a transport operation subject to ADR.

1.4.3.1 *Loader*

1.4.3.1.1 In the context of 1.4.1, the loader has the following obligations in particular:

- (a) He shall hand the dangerous goods over to the carrier only if they are authorized for carriage in accordance with ADR;
- (b) He shall, when handing over for carriage packed dangerous goods or uncleared empty packagings, check whether the packaging is damaged. He shall not hand over a package the packaging of which is damaged, especially if it is not leakproof, and there are leakages or the possibility of leakages of the dangerous substance, until the damage has been repaired; this obligation also applies to empty uncleared packagings;
- (c) He shall comply with the special requirements concerning loading and handling;
- (d) He shall, after loading dangerous goods into a container comply with the requirements concerning placarding, marking and orange-coloured plates conforming to Chapter 5.3;
- (e) He shall, when loading packages, comply with the prohibitions on mixed loading taking into account dangerous goods already in the vehicle or large container and requirements concerning the separation of foodstuffs, other articles of consumption or animal feedstuffs.

1.4.3.1.2 The loader may, however, in the case of 1.4.3.1.1 (a), (d) and (e), rely on information and data made available to him by other participants.

1.4.3.2 *Packer*

In the context of 1.4.1, the packer shall comply with in particular:

- (a) The requirements concerning packing conditions, or mixed packing conditions; and
- (b) When he prepares packages for carriage, the requirements concerning marking and labelling of the packages.

1.4.3.3 *Filler*

In the context of 1.4.1, the filler has the following obligations in particular:

- (a) He shall ascertain prior to the filling of tanks that both they and their equipment are technically in a satisfactory condition;
- (b) He shall ascertain that the date specified for the next inspection for tank-vehicles, battery-vehicles, demountable tanks, portable tanks, tank-containers and MEGCs has not expired;
- (c) He shall only fill tanks with the dangerous goods authorized for carriage in those tanks;

- (d) He shall, in filling the tank, comply with the requirements concerning dangerous goods in adjoining compartments;
- (e) He shall, during the filling of the tank, observe the permissible degree of filling, permissible filling ratio or permissible mass of contents per litre of capacity, as appropriate, for the substance being filled;
- (f) He shall, after filling the tank, ensure that all closures are in a closed position and that there is no leakage;
- (g) He shall ensure that no dangerous residue of the filling substance adheres to the outside of the tanks filled by him;
- (h) He shall, in preparing the dangerous goods for carriage, ensure that the placards, marks, orange-coloured plates and labels are affixed on the tanks, on the vehicles and on the containers for carriage in bulk in accordance with Chapter 5.3;
- (i) *(Reserved);*
- (j) He shall, when filling vehicles or containers with dangerous goods in bulk, ascertain that the relevant provisions of Chapter 7.3 are complied with.

**1.4.3.4*****Tank-container/portable tank operator***

In the context of 1.4.1, the tank-container/portable tank operator shall in particular:

- (a) Ensure compliance with the requirements for construction, equipment, inspections and tests and marking;
- (b) Ensure that the maintenance of shells and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the tank-container/portable tank satisfies the requirements of ADR until the next inspection;
- (c) Have an exceptional inspection made when the safety of the shell or its equipment is liable to be impaired by a repair, an alteration or an accident.

**1.4.3.5 and 1.4.3.6**

*(Reserved)*

**1.4.3.7*****Unloader*****1.4.3.7.1**

In the context of 1.4.1, the unloader shall in particular:

- (a) Ascertain that the correct goods are unloaded by comparing the relevant information on the transport document with the information on the package, container, tank, MEMU, MEGC or vehicle;
- (b) Before and during unloading, check whether the packagings, the tank, the vehicle or container have been damaged to an extent which would endanger the unloading operation. If this is the case, ascertain that unloading is not carried out until appropriate measures have been taken;
- (c) Comply with all relevant requirements concerning unloading and handling;
- (d) Immediately following the unloading of the tank, vehicle or container:
  - (i) Remove any dangerous residues which have adhered to the outside of the tank, vehicle or container during the process of unloading; and
  - (ii) Ensure the closure of valves and inspection openings;
- (e) Ensure that the prescribed cleaning and decontamination of the vehicles or containers is carried out; and
- (f) Ensure that the containers once completely unloaded, cleaned and decontaminated, no longer display the placards, marks and orange-coloured plates that had been displayed in accordance with Chapter 5.3.

**1.4.3.7.2**

If the unloader makes use of the services of other participants (cleaner, decontamination facility, etc.) he shall take appropriate measures to ensure that the requirements of ADR have been complied with.

## CHAPTER 1.5

### DEROGATIONS

#### 1.5.1 **Temporary derogations**

1.5.1.1 In accordance with Article 4, paragraph 3 of ADR, the competent authorities of the Contracting Parties may agree directly among themselves to authorize certain transport operations in their territories by temporary derogation from the requirements of ADR, provided that safety is not compromised thereby. The authority which has taken the initiative with respect to the temporary derogation shall notify such derogations to the Secretariat of the United Nations Economic Commission for Europe which shall bring them to the attention of the Contracting Parties<sup>1</sup>.

*NOTE: "Special arrangement" in accordance with 1.7.4 is not considered to be a temporary derogation in accordance with this section.*

1.5.1.2 The period of validity of the temporary derogation shall not be more than five years from the date of its entry into force. The temporary derogation shall automatically cease as from the date of the entry into force of a relevant amendment to ADR.

1.5.1.3 Transport operations on the basis of temporary derogations shall constitute transport operations in the sense of ADR.

1.5.2 (Reserved)

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<sup>1</sup> *Note by the Secretariat: The special agreements concluded under this Chapter may be consulted on the web site of the Secretariat of the United Nations Economic Commission for Europe (<http://www.unece.org/adr-multilateral-agreements>).*



## CHAPTER 1.6

### TRANSITIONAL MEASURES

**1.6.1 General**

1.6.1.1 Unless otherwise provided, the substances and articles of ADR may be carried until 30 June 2025 in accordance with the requirements of ADR applicable up to 31 December 2024.

1.6.1.2 *(Deleted)*

1.6.1.3 Substances and articles of Class 1, belonging to the armed forces of a Contracting Party, that were packaged prior to 1 January 1990 in accordance with the requirements of ADR in effect at that time may be carried after 31 December 1989 provided the packagings maintain their integrity and are declared in the transport document as military goods packaged prior to 1 January 1990. The other requirements applicable as from 1 January 1990 for this class shall be complied with.

1.6.1.4 Substances and articles of Class 1 that were packaged between 1 January 1990 and 31 December 1996 in accordance with the requirements of ADR in effect at that time may be carried after 31 December 1996, provided the packagings maintain their integrity and are declared in the transport document as goods of Class 1 packaged between 1 January 1990 and 31 December 1996.

1.6.1.5 *(Reserved)*

1.6.1.6 Intermediate bulk containers (IBCs) manufactured before 1 January 2003 in accordance with the requirements of marginal 3612 (1) applicable up to 30 June 2001 and which do not conform to the requirements of 6.5.2.1.1 regarding the height of letters, numerals and symbols applicable as from 1 July 2001 may continue to be used.

1.6.1.7 Type approvals for drums, jerricans and composite packagings made of high or medium molecular mass polyethylene issued before 1 July 2005 in accordance with the requirements of 6.1.5.2.6 in force up to 31 December 2004, but which are not in accordance with the requirements of 4.1.1.21, continue to be valid until 31 December 2009. Any such packagings manufactured and marked on the basis of these type approvals may be used until the end of their period of use determined in 4.1.1.15.

1.6.1.8 Existing orange-coloured plates which meet the requirements of sub-section 5.3.2.2 applicable up to 31 December 2004 may continue to be used until 31 December 2026 provided that the requirements of 5.3.2.2.1 and 5.3.2.2.2 that the plate, numbers and letters shall remain affixed irrespective of the orientation of the vehicle are met.

1.6.1.9 and 1.6.1.10 *(Deleted)*

1.6.1.11 Type approvals for drums, jerricans and composite packagings made of high or medium molecular mass polyethylene, and for high molecular mass polyethylene IBCs, issued before 1 July 2007 in accordance with the requirements of 6.1.6.1 (a) in force up to 31 December 2006, but which are not in accordance with the requirements of 6.1.6.1 (a) applicable as from 1 January 2007, continue to be valid.

1.6.1.12 and 1.6.1.13 *(Deleted)*

1.6.1.14 IBCs manufactured before 1 January 2011 and conforming to a design type which has not passed the vibration test of 6.5.6.13 or which was not required to meet the criteria of 6.5.6.9.5 (d) at the time it was subjected to the drop test, may still be used.

1.6.1.15 IBCs manufactured, remanufactured or repaired before 1 January 2011 need not be marked with the maximum permitted stacking load in accordance with 6.5.2.2.2. Such IBCs, not marked in accordance with 6.5.2.2.2, may still be used after 31 December 2010 but must be marked in accordance with 6.5.2.2.2 if they are remanufactured or repaired after that date. IBCs manufactured, remanufactured or repaired between 1 January 2011 and 31 December 2016 and marked with the maximum permitted stacking load in accordance with 6.5.2.2.2 in force up to 31 December 2014 may continue to be used.

1.6.1.16 to 1.6.1.22 *(Deleted)*

1.6.1.23 Fire extinguishers constructed before 1 July 2011 in accordance with the requirements of 8.1.4.3 applicable until 31 December 2010 may continue to be used.

1.6.1.24 and 1.6.1.25 *(Deleted)*

1.6.1.26 Large packagings manufactured or remanufactured before 1 January 2014 and which do not conform to the requirements of 6.6.3.1 regarding the height of letters, numerals and symbols applicable as from 1 January 2013 may continue to be used. Those manufactured or remanufactured before 1 January 2015 need not be marked with the maximum permitted stacking load in accordance with 6.6.3.3. Such large packagings not marked in accordance with 6.6.3.3 may still be used after 31 December 2014 but must be marked in accordance with 6.6.3.3 if they are remanufactured after that date. Large packagings manufactured or remanufactured between 1 January 2011 and 31 December 2016 and marked with the maximum permitted stacking load in accordance with 6.6.3.3 in force up to 31 December 2014 may continue to be used.

1.6.1.27 Means of containment integral to equipment or machinery containing liquid fuels of UN Nos. 1202, 1203, 1223, 1268, 1863 and 3475 constructed before 1 July 2013, which do not conform to the requirements of paragraph (a) of special provision 363 of Chapter 3.3 applicable as from 1 January 2013, may still be used.

1.6.1.28 *(Deleted)*

1.6.1.29 Lithium cells and batteries manufactured according to a type meeting the requirements of sub-section 38.3 of the *Manual of Tests and Criteria*, Revision 3, Amendment 1 or any subsequent revision and amendment applicable at the date of the type testing may continue to be carried, unless otherwise provided in ADR.  
Lithium cells and batteries manufactured before 1 July 2003 meeting the requirements of the *Manual of Tests and Criteria*, Revision 3, may continue to be carried if all other applicable requirements are fulfilled.

1.6.1.30 to 1.6.1.32 *(Deleted)*

1.6.1.33 Electric double layer capacitors of UN No. 3499, manufactured before 1 January 2014, need not be marked with the energy storage capacity in Wh as required by sub-paragraph (e) of special provision 361 of Chapter 3.3.

1.6.1.34 Asymmetric capacitors of UN No. 3508, manufactured before 1 January 2016, need not be marked with the energy storage capacity in Wh as required by sub-paragraph (c) of special provision 372 of Chapter 3.3.

1.6.1.35 and 1.6.1.36 *(Deleted)*

1.6.1.37 *(Reserved)*

1.6.1.38 to 1.6.1.42 *(Deleted)*

1.6.1.43 Vehicles registered or brought into service before 1 July 2017, as defined in special provisions 388 and 669 of Chapter 3.3, and their equipment intended for use during carriage, which conform to the requirements of ADR applicable until 31 December 2016 but containing lithium cells and batteries which do not conform to the provisions of 2.2.9.1.7.1 may continue to be carried as a load in accordance with the requirements of special provision 666 of Chapter 3.3.

1.6.1.44 *(Deleted)*

1.6.1.45 Contracting Parties may, until 31 December 2020, continue to issue training certificates for dangerous goods safety advisers conforming to the model applicable until 31 December 2018, instead of those conforming to the requirements of 1.8.3.18 applicable from 1 January 2019. Such certificates may continue in use to the end of their five-year validity.

1.6.1.46 and 1.6.1.47 *(Deleted)*

1.6.1.48 Certificates of approval for vehicles carrying certain dangerous goods conforming to the model in 9.1.3.5 applicable until 31 December 2020, issued before 1 July 2021, may still be used.

1.6.1.49 The mark shown in Figure 5.2.1.9.2 applicable until 31 December 2022, may continue to be applied until 31 December 2026.

1.6.1.50 For articles that meet the definition for DETONATORS, ELECTRONIC as described in 2.2.1.4 Glossary of names, and assigned to UN Nos. 0511, 0512 and 0513, the entries for DETONATORS, ELECTRIC (UN Nos. 0030, 0255 and 0456) may continue to be used until 30 June 2025.

1.6.1.51 Adhesives, paint and paint related materials, printing inks and printing ink related materials and resin solutions assigned to UN No. 3082 environmentally hazardous substance, liquid, N.O.S., packing group III in accordance with 2.2.9.1.10.6 as a consequence of 2.2.9.1.10.5<sup>1</sup> containing 0.025 % or more of the following substances, on their own or in combination:

- 4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT);
- octhilinone (OIT); and
- zinc pyrithione (ZnPT);

may be carried until 30 June 2027 in steel, aluminium, other metal or plastic packagings, which do not meet the requirements of 4.1.1.3, when carried in quantities of 30 litres or less per packaging as follows:

- (a) In palletized loads, a pallet box or unit load device, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet; or
- (b) As inner packagings of combination packagings with a maximum net mass of 40 kg.

1.6.1.52 Inner receptacles of composite IBCs manufactured before 1 July 2021 in accordance with the requirements of 6.5.2.2.4 in force up to 31 December 2020 and which are not in accordance with the requirements of 6.5.2.2.4 regarding the marks on the inner receptacles that are not readily accessible for inspection due to the design of the outer casing applicable as from 1 January 2021 may continue be used until the end of their period of use determined in 4.1.1.15.

1.6.1.53 *(Deleted)*

1.6.1.54 Vats for the carriage of molten aluminium of UN No. 3257 which have been constructed and approved before 1 July 2025 in accordance with the provisions of national law but which do not, however, conform to the construction and approval requirements of AP11 in 7.3.3.2.7 applicable as from 1 January 2025 may continue to be used with the approval of the competent authorities in the countries of use.

1.6.1.55 Substances assigned to UN No. 1835 or 3560 may be carried until 31 December 2026 in accordance with the classification provisions and transport conditions of ADR applicable to UN No. 1835 TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION up to 31 December 2024.

1.6.1.56 Substances assigned to UN No. 3423 may be carried until 31 December 2026 in accordance with the classification provisions and transport conditions of ADR applicable up to 31 December 2024.

1.6.1.57 Packagings manufactured before 1 January 2027 and which do not conform to the requirements of 6.1.3.1 regarding the affixing of marks on non-removable components applicable as from 1 January 2025 may continue to be used.

## 1.6.2 Pressure receptacles and receptacles for Class 2

1.6.2.1 Receptacles built before 1 January 1997 and which do not conform to the requirements of ADR applicable as from 1 January 1997, but the carriage of which was permitted under the requirements of ADR applicable up to 31 December 1996, may continue to be transported after that date if the periodic test requirements in packing instructions P200 and P203 are complied with.

<sup>1</sup> Commission Delegated Regulation (EU) 2020/1182 of 19 May 2020 amending, for the purposes of its adaptation to technical and scientific progress, Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (fifteenth ATP to the CLP), applicable from 1 March 2022.

1.6.2.2 *(Deleted)*

1.6.2.3 Receptacles intended for the carriage of Class 2 substances constructed before 1 January 2003, may continue to bear, after 1 January 2003, the marks conforming to the requirements applicable until 31 December 2002.

1.6.2.4 Pressure receptacles designed and constructed in accordance with technical codes no longer recognized according to 6.2.5 may still be used.

1.6.2.5 Pressure receptacles and their closures designed and constructed in accordance with standards applicable at the time of their construction (see 6.2.4) according to the provisions of ADR which were applicable at that time may still be used unless restricted by a specific transitional measure.

1.6.2.6 Pressure receptacles for substances other than those of Class 2, built before 1 July 2009 in accordance with the requirements of 4.1.4.4 in force up to 31 December 2008, but which do not conform to the requirements of 4.1.3.6 applicable as from 1 January 2009, may continue to be used provided that the requirements of 4.1.4.4 in force up to 31 December 2008 are complied with.

1.6.2.7 and 1.6.2.8 *(Deleted)*

1.6.2.9 The provisions of packing instruction P200 (10), special packing provision v of 4.1.4.1 applicable until 31 December 2010 may be applied by Contracting Parties to ADR to cylinders constructed before 1 January 2015.

1.6.2.10 Refillable welded steel cylinders for the carriage of gases of UN Nos. 1011, 1075, 1965, 1969 or 1978, granted 15 year intervals for periodic inspection in accordance with packing instruction P200 (10), special packing provision v of 4.1.4.1 as applicable until 31 December 2010 by the competent authority of the country (countries) of carriage, may continue to be periodically inspected according to those provisions.

1.6.2.11 Gas cartridges constructed and prepared for carriage before 1 January 2013 for which the requirements of 1.8.6, 1.8.7 or 1.8.8 for the conformity assessment of gas cartridges have not been applied may still be carried after this date, provided all the other applicable provisions of ADR are met.

1.6.2.12 Salvage pressure receptacles may continue to be constructed and approved according to national regulations up to 31 December 2013. Salvage pressure receptacles constructed and approved in accordance with national regulations before 1 January 2014 may continue to be used with the approval of the competent authorities of the countries of use.

1.6.2.13 Bundles of cylinders manufactured before 1 July 2013 which are not marked in accordance with 6.2.3.9.7.2 and 6.2.3.9.7.3 applicable from 1 January 2013 or 6.2.3.9.7.2 applicable from 1 January 2015 may be used until the next periodic inspection after 1 July 2015.

1.6.2.14 Cylinders constructed before 1 January 2016 in accordance with 6.2.3 and a specification approved by the competent authorities of the countries of transport and use, but not in accordance with ISO 11513:2011 or ISO 9809-1:2010 as required in 4.1.4.1, packing instruction P208 (1), may be used for the carriage of adsorbed gases provided the general packing requirements of 4.1.6.1 are met.

1.6.2.15 Bundles of cylinders periodically inspected before 1 July 2015 which are not marked in accordance with 6.2.3.9.7.3 applicable from 1 January 2015 may be used until the next periodic inspection after 1 July 2015.

1.6.2.16 and 1.6.2.17 *(Deleted)*

1.6.2.18 Closed cryogenic receptacles constructed before 1 July 2023 which were subject to the initial inspection and test requirements of 6.2.1.5.2 applicable until 31 December 2022 but which do not however conform to the requirements of 6.2.1.5.2 relating to the initial inspection and test applicable as from 1 January 2023, may continue to be used.

1.6.2.19 Acetylene cylinders constructed before 1 July 2023 which are not marked in accordance with 6.2.2.7.3 (k) or (l) applicable from 1 January 2023 may continue to be used until the next periodic inspection and test after 1 July 2023.

1.6.2.20 Closures of refillable pressure receptacles constructed before 1 July 2023 which are not marked in accordance with 6.2.2.11 or 6.2.3.9.8 applicable from 1 January 2023 may continue to be used.

1.6.2.21 and 1.6.2.22 *(Deleted)*

1.6.2.23 The requirements of note 3 of 6.2.1.6.1 applicable until 31 December 2024 may continue to be applied until 31 December 2026.

1.6.2.24 For the carriage of gases of UN Nos. 1006, 1013, 1046 and 1066 in cylinders having a test pressure capacity product of maximum 15.2 MPa·l (152 bar·l), the provisions of special provision 653 of Chapter 3.3 applicable until 31 December 2024 may continue to be applied until 31 December 2026.

**1.6.3 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles**

1.6.3.1 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles built before the entry into force of the requirements applicable as from 1 October 1978 may be kept in service if the equipment of the shell meets the requirements of Chapter 6.8. The thickness of the shell wall, except in the case of shells intended for the carriage of refrigerated liquefied gases of Class 2, shall be appropriate to a calculation pressure of not less than 0.4 MPa (4 bar) (gauge pressure) in the case of mild steel or of not less than 200 kPa (2 bar) (gauge pressure) in the case of aluminium and aluminium alloys. For other than circular cross-sections of tanks, the diameter to be used as a basis for calculation shall be that of a circle whose area is equal to that of the actual cross-section of the tank.

1.6.3.2 The periodic inspections for fixed tanks (tank-vehicles), demountable tanks and battery-vehicles kept in service under these transitional requirements shall be conducted in accordance with the requirements of 6.8.2.4 and 6.8.3.4 and with the pertinent special requirements for the various classes. Unless the earlier requirements prescribed a higher test pressure, a test pressure of 200 kPa (2 bar) (gauge pressure) shall suffice for aluminium shells and aluminium alloy shells.

1.6.3.3 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles which meet the transitional requirements in 1.6.3.1 and 1.6.3.2 may be used until 30 September 1993 for the carriage of the dangerous goods for which they have been approved. This transitional period shall not apply to fixed tanks (tank-vehicles), demountable tanks and battery-vehicles intended for the carriage of substances of Class 2, or to fixed tanks (tank-vehicles), demountable tanks and battery-vehicles whose wall thickness and items of equipment meet the requirements of Chapter 6.8.

1.6.3.4

- (a) Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed before 1 May 1985 in accordance with the requirements of ADR in force between 1 October 1978 and 30 April 1985 but not conforming to the requirements applicable as from 1 May 1985 may continue to be used after that date;
- (b) Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles, constructed between 1 May 1985 and the entry into force of the requirements applicable as from 1 January 1988 which do not conform to those requirements but were constructed according to the requirements of ADR in force until that date, may continue to be used after that date.

1.6.3.5 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles, constructed before 1 January 1993 in accordance with the requirements in force up to 31 December 1992 but which do not conform to the requirements applicable as from 1 January 1993 may still be used.

1.6.3.6

- (a) Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed between 1 January 1978 and 31 December 1984, if used after 31 December 2004, shall conform to the requirements of marginal 211 127 (5), applicable as from 1 January 1990, concerning shell thickness and protection against damage;
- (b) Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed between 1 January 1985 and 31 December 1989, if used after 31 December 2010, shall conform to the requirements of marginal 211 127 (5), applicable as from 1 January 1990, concerning shell thickness and protection against damage.

1.6.3.7 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed before 1 January 1999 in accordance with the requirements in force up to 31 December 1998 but which do not, however, conform to the requirements applicable as from 1 January 1999 may still be used.

1.6.3.8 When, because of amendments to ADR, some proper shipping names of gases have been modified, it is not necessary to modify the names on the plate or on the shell itself (see 6.8.3.5.2 or 6.8.3.5.3), provided

that the names of the gases on the fixed tanks (tank-vehicles), demountable tanks and battery-vehicles or on the plates (see 6.8.3.5.6 (b) or (c)) are adapted at the first periodic inspection thereafter.

1.6.3.9 and 1.6.3.10 *(Reserved)*

1.6.3.11 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996 but which do not, however, conform to the requirements of marginals 211 332 and 211 333 applicable as from 1 January 1997, may still be used.

1.6.3.12 *(Reserved)*

1.6.3.13 *(Deleted)*

1.6.3.14 *(Reserved)*

1.6.3.15 *(Deleted)*

1.6.3.16 For fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed before 1 January 2007 which do not conform to the requirements of 4.3.2, 6.8.2.3, 6.8.2.4 and 6.8.3.4 concerning the tank record, the retention of files for the tank record shall start at the latest at the first periodic inspection after 30 June 2007.

1.6.3.17 *(Deleted)*

1.6.3.18 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed before 1 January 2003 in accordance with the requirements in force up to 30 June 2001, but which do not, however, conform to the requirements applicable as from 1 July 2001, may still be used provided that the assignment to the relevant tank code has been carried out.

1.6.3.19 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 January 2003 in accordance with the requirements of 6.8.2.1.21 in force up to 31 December 2002 but which do not, however, conform to the requirements applicable as from 1 January 2003 may still be used.

1.6.3.20 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2003 in accordance with the requirements in force up to 31 December 2002 but which do not, however, conform to the requirements of 6.8.2.1.7 applicable as from 1 January 2003 and special provision TE15 of 6.8.4 (b) applicable from 1 January 2003 to 31 December 2006 may still be used.

1.6.3.21 *(Deleted)*

1.6.3.22 to 1.6.3.24 *(Reserved)*

1.6.3.25 *(Deleted)*

1.6.3.26 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 January 2007 in accordance with the requirements in force up to 31 December 2006 but which do not, however, conform to the requirements applicable as from 1 January 2007 regarding the marking of the external design pressure in accordance with 6.8.2.5.1, may still be used.

1.6.3.27 to 1.6.3.29 *(Reserved)*

1.6.3.30 Vacuum-operated waste fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2005 in accordance with the requirements applicable up to 31 December 2004 but which do not conform to the requirements of 6.10.3.9 applicable as from 1 January 2005, may still be used.

1.6.3.31 Fixed tanks (tank-vehicles), demountable tanks and tanks forming elements of battery-vehicles designed and constructed in accordance with a technical code which was recognized at the time of their construction according to the provisions of 6.8.2.7 which were applicable at that time may still be used.

1.6.3.32 Fixed tanks (tank vehicles) and demountable tanks constructed before 1 July 2007 in accordance with the requirements in force up to 31 December 2006, equipped with manhole cover assemblies in accordance with the provisions of standard EN 13317:2002 referred to in the table of paragraph 6.8.2.6, applicable until 31 December 2006, including those of the figure and table B.2 of annex B of the said standard which are no longer accepted as from 1 January 2007, or the material of which does not meet the requirements of EN 13094:2004, paragraph 5.2, may still be used.

1.6.3.33 *(Reserved)*

1.6.3.34 Notwithstanding the provisions of 4.3.2.2.4, fixed tanks (tank-vehicles) and demountable tanks intended for the carriage of liquefied gases or refrigerated liquefied gases, which meet the applicable construction requirements of ADR but which were divided, before 1 July 2009, by partitions or surge plates into sections of more than 7 500 litres capacity may still be filled to more than 20 % and less than 80 % of their capacity.

1.6.3.35 *(Deleted)*

1.6.3.36 Fixed tanks (tank-vehicles) intended for the carriage of liquefied non-toxic flammable gases constructed before 1 July 2011 and which are equipped with non-return valves instead of internal stop-valves and which do not conform to the requirements of 6.8.3.2.3, may still be used.

1.6.3.37 *(Deleted)*

1.6.3.38 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles designed and constructed in accordance with standards applicable at the time of their construction (see 6.8.2.6 and 6.8.3.6) according to the provisions of ADR which were applicable at that time may still be used unless restricted by a specific transitional measure.

1.6.3.39 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2011 in accordance with the requirements of 6.8.2.2.3 in force up to 31 December 2010 but which do not, however, conform to the requirements of 6.8.2.2.3, third paragraph, concerning the position of the flame trap or flame arrester may still be used.

1.6.3.40 *(Deleted)*

1.6.3.41 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2013 in accordance with the requirements in force up to 31 December 2012, but which do not, however, meet the marking provisions of 6.8.2.5.2 or 6.8.3.5.6 applicable as from 1 January 2013, may continue to be marked in accordance with the requirements applicable up to 31 December 2012 until the next periodic inspection after 1 July 2013.

1.6.3.42 *(Deleted)*

1.6.3.43 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 January 2012 in accordance with the requirements in force up to 31 December 2012, but which do not however conform to the requirements of 6.8.2.6 relating to standards EN 14432:2006 and EN 14433:2006 applicable as from 1 January 2011, may still be used.

1.6.3.44 Fixed tanks (tank-vehicles) and demountable tanks intended for the carriage of UN Nos. 1202, 1203, 1223, 3475 and aviation fuel classified under UN Nos. 1268 or 1863, equipped with additive devices designed and constructed before 1 July 2015 in accordance with national provisions, but which do not, however, conform to the construction, approval and testing requirements of special provision 664 of Chapter 3.3 applicable as from 1 January 2015 shall only be used with the agreement of the competent authorities in the countries of use.

1.6.3.45 *(Reserved)*

1.6.3.46 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2017 in accordance with the requirements in force up to 31 December 2016 but which do not however conform to the requirements of 6.8.2.1.23 applicable as from 1 January 2017 may still be used.

1.6.3.47 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2019, fitted with safety valves meeting the requirements in force up to 31 December 2018 but which do not meet the requirements of 6.8.3.2.9 last sub-paragraph concerning their design or protection applicable from 1 January 2019 may continue to be used until the next intermediate or periodic inspection after 1 January 2021.

1.6.3.48 Notwithstanding the requirements of special provision TU42 of 4.3.5 applicable from 1 January 2019, fixed tanks (tank vehicles) and demountable tanks with a shell constructed of aluminium alloy, including those with protective lining, which were used before 1 January 2019 for the carriage of substances with a pH value less than 5.0 or more than 8.0, may continue to be used for the carriage of such substances until 31 December 2026.

1.6.3.49 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which do not conform to the requirements of 6.8.2.10 concerning the burst pressure of the bursting disc applicable as from 1 January 2019 may continue to be used.

1.6.3.50 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2019 in accordance with the requirements of 6.8.2.2.3 in force up to 31 December 2018 but which however do not conform to the requirements of 6.8.2.2.3 last paragraph concerning the flame arresters on breather devices applicable from 1 January 2019 may continue to be used.

1.6.3.51 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which do not however conform to the requirements of 6.8.2.1.23 concerning the check of the welds in the knuckle area of the tank ends applicable as from 1 January 2019 may continue to be used.

1.6.3.52 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which however do not conform to the requirements of 6.8.2.2.11 applicable from 1 January 2019 may continue to be used.

1.6.3.53 Type approval certificates issued for fixed tanks (tank-vehicles), demountable tanks and battery-vehicles before 1 July 2019 in accordance with the requirements of 6.8.2.3.1 in force up to 31 December 2018 but which do not, however, conform to the requirements of 6.8.2.3.1 to show the distinguishing sign used on vehicles in international road traffic<sup>2</sup> of the state whose territory the approval was granted and a registration number applicable as from 1 January 2019 may continue to be used.

1.6.3.54 Procedures used by the competent authority for the approval of experts performing activities concerning fixed tanks (tank vehicles) and demountable tanks intended for the carriage of substances other than those for which TA4 and TT9 of 6.8.4 apply which conform to the requirements of Chapter 6.8 in force up to 31 December 2022 but which do not conform to the requirements of 1.8.6 applicable to inspection bodies from 1 January 2023 may continue to be used until 31 December 2032.

*NOTE: The term "expert" has been replaced by the term "inspection body".*

1.6.3.55 Type approval certificates issued for fixed tanks (tank vehicles) and demountable tanks intended for the carriage of substances other than those for which TA4 and TT9 of 6.8.4 apply, issued before 1 July 2023 in compliance with Chapter 6.8 which not comply with 1.8.7 as applicable from 1 January 2023 may continue to be used until the end of their validity.

1.6.3.56 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2033 in accordance with the requirements of Chapter 6.9 in force up to 31 December 2022 but which do not however conform to the requirements of Chapter 6.13 applicable as from 1 January 2023, may still be used.

1.6.3.57 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 January 2024 in accordance with the requirements in force up to 31 December 2022 but which do not, however, conform to the requirements applicable as from 1 January 2023 regarding the fitting of safety valves in accordance with 6.8.3.2.9 may still be used.

1.6.3.58 *(Reserved)*

1.6.3.59 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not, however, meet the requirements of special provision TE26 of 6.8.4 (b) applicable as from 1 January 2023 may continue to be used.

1.6.3.60 Fixed tanks (tank-vehicles) and demountable tanks that are already fitted with safety valves meeting the requirements of 6.8.3.2.9 as applicable from 1 January 2023 do not need to display the marks in accordance with 6.8.3.2.9.6 until the next intermediate or periodic inspection after 31 December 2023.

<sup>2</sup> *Distinguishing sign of the state of registration used on motor vehicles and trailers in international road traffic, e.g. in accordance with the Geneva Convention on Road Traffic of 1949 or the Vienna Convention on Road Traffic of 1968.*

1.6.3.61 Fixed tanks (tank-vehicles) and demountable tanks constructed before 1 July 2025 in accordance with the requirements in force up to 31 December 2024, but which however do not conform to the requirements of 6.8.2.2.11 applicable from 1 January 2025, may continue to be used.

1.6.3.62 to 1.6.3.99 *(Reserved)*

**1.6.3.100 *Fibre-reinforced plastics (FRP) tanks***

1.6.3.100.1 FRP tanks which have been constructed before 1 July 2002 in conformity with a design type approved before 1 July 2001 in accordance with the requirements of Appendix B.1c which were in force until 30 June 2001 may continue to be used until the end of their lifetime provided that all the requirements in force up to 30 June 2001 have been and continue to be complied with. However, as from 1 July 2001, no new design type may be approved in accordance with the requirements in force until 30 June 2001.

1.6.3.100.2 FRP tanks constructed before 1 July 2021 in accordance with the requirements in force up to 31 December 2020 but which do not, however, meet the requirements for the marking of the tank code of 6.9.6.1 applicable from 1 January 2021 to 31 December 2022 or 6.13.6.1 applicable as from 1 January 2023 may continue to be marked in accordance with the requirements applicable up to 31 December 2020 until the next periodic inspection after 1 July 2021.

**1.6.4 *Tank-containers, portable tanks and MEGCs***

1.6.4.1 Tank-containers constructed before 1 January 1988 in accordance with the requirements in force up to 31 December 1987 but which do not, however, conform to the requirements applicable as from 1 January 1988, may still be used.

1.6.4.2 Tank-containers constructed before 1 January 1993 in accordance with the requirements in force up to 31 December 1992 but which do not, however, conform to the requirements applicable as from 1 January 1993, may still be used.

1.6.4.3 Tank-containers constructed before 1 January 1999 in accordance with the requirements in force up to 31 December 1998 but which do not, however, conform to the requirements applicable as from 1 January 1999, may still be used.

1.6.4.4 *(Reserved)*

1.6.4.5 When, because of amendments to ADR, some proper shipping names of gases have been modified, it is not necessary to modify the names on the plate or on the shell itself (see 6.8.3.5.2 or 6.8.3.5.3), provided that the names of the gases on the tank-containers and MEGCs or on the plates [see 6.8.3.5.6 (b) or (c)] are adapted at the first periodic inspection thereafter.

1.6.4.6 Tank-containers constructed before 1 January 2007 in accordance with the requirements in force up to 31 December 2006 but which do not, however, conform to the requirements applicable as from 1 January 2007 regarding the marking of the external design pressure in accordance with 6.8.2.5.1, may still be used.

1.6.4.7 Tank-containers constructed before 1 January 1997 in accordance with the requirements in force up to 31 December 1996 but which do not, however, conform to the requirements of marginals 212 332 and 212 333 applicable as from 1 January 1997, may still be used.

1.6.4.8 *(Reserved)*

1.6.4.9 Tank-containers and MEGCs designed and constructed in accordance with a technical code which was recognized at the time of their construction according to the provisions of 6.8.2.7 which were applicable at that time may still be used.

1.6.4.10 *(Deleted)*

1.6.4.11 *(Reserved)*

1.6.4.12 Tank-containers and MEGCs constructed before 1 January 2003 in accordance with the requirements applicable up to 30 June 2001, but which do not, however, conform to the requirements applicable as from 1 July 2001, may still be used.

However, they shall be marked with the relevant tank code and if applicable the relevant alphanumeric codes of special provisions TC and TE in accordance with 6.8.4.

1.6.4.13 Tank-containers constructed before 1 July 2003 in accordance with the requirements in force up to 31 December 2002 but which do not, however, conform to the requirements of 6.8.2.1.7 applicable as from 1 January 2003 and special provision TE15 of 6.8.4 (b) applicable from 1 January 2003 to 31 December 2006 may still be used.

1.6.4.14 *(Reserved)*

1.6.4.15 to 1.6.4.17 *(Deleted)*

1.6.4.18 For tank-containers and MEGCs constructed before 1 January 2007 which do not conform to the requirements of 4.3.2, 6.8.2.3, 6.8.2.4 and 6.8.3.4 concerning the tank record, the retention of files for the tank record shall start at the latest at the first periodic inspection after 30 June 2007.

1.6.4.19 *(Deleted)*

1.6.4.20 Vacuum-operated waste tank-containers constructed before 1 July 2005 in accordance with the requirements applicable up to 31 December 2004 but which do not conform to the requirements of 6.10.3.9 applicable as from 1 January 2005, may still be used.

1.6.4.21 to 1.6.4.29 *(Reserved)*

1.6.4.30 Portable tanks and UN MEGCs which do not meet the design requirements applicable as from 1 January 2007 but which have been constructed according to a design approval certificate which has been issued before 1 January 2008 may continue to be used.

1.6.4.31 and 1.6.4.32 *(Deleted)*

1.6.4.33 Notwithstanding the provisions of 4.3.2.2.4, tank-containers intended for the carriage of liquefied gases or refrigerated liquefied gases, which meet the applicable construction requirements of ADR but which were divided, before 1 July 2009, by partitions or surge plates into sections of more than 7 500 litres capacity may still be filled to more than 20 % and less than 80 % of their capacity.

1.6.4.34 to 1.6.4.36 *(Deleted)*

1.6.4.37 Portable tanks and MEGCs manufactured before 1 January 2012, that conform to the marking requirements of 6.7.2.20.1, 6.7.3.16.1, 6.7.4.15.1 or 6.7.5.13.1 applicable up to 31 December 2010, as relevant, may continue to be used if they comply with all other relevant requirements of ADR applicable as from 1 January 2011 including, when applicable, the requirement of 6.7.2.20.1 (g) for marking the symbol "S" on the plate when the shell or the compartment is divided by surge plates into sections of not more than 7 500 litres capacity.

1.6.4.38 *(Deleted)*

1.6.4.39 Tank-containers and MEGCs designed and constructed in accordance with standards applicable at the time of their construction (see 6.8.2.6 and 6.8.3.6) according to the provisions of ADR which were applicable at that time may still be used unless restricted by a specific transitional measure.

1.6.4.40 Tank-containers constructed before 1 July 2011 in accordance with the requirements of 6.8.2.2.3 in force up to 31 December 2010 but which do not, however, conform to the requirements of 6.8.2.2.3, third paragraph, concerning the position of the flame trap or flame arrester may still be used.

1.6.4.41 *(Deleted)*

1.6.4.42 Tank-containers constructed before 1 July 2013 in accordance with the requirements in force up to 31 December 2012, but which do not, however, meet the marking provisions of 6.8.2.5.2 or 6.8.3.5.6 applicable as from 1 January 2013, may continue to be marked in accordance with the requirements applicable up to 31 December 2012 until the next periodic inspection after 1 July 2013.

1.6.4.43 Portable tanks and MECGs manufactured before 1 January 2014 need not comply with the requirements of 6.7.2.13.1 (f), 6.7.3.9.1 (e), 6.7.4.8.1 (e) and 6.7.5.6.1 (d) concerning the marking of the pressure relief devices.

1.6.4.44 and 1.6.4.45 *(Deleted)*

1.6.4.46 Tank-containers constructed before 1 January 2012 in accordance with the requirements in force up to 31 December 2012, but which do not however conform to the requirements of 6.8.2.6 relating to standards EN 14432:2006 and EN 14433:2006 applicable as from 1 January 2011, may still be used.

1.6.4.47 Tank containers for refrigerated liquefied gases constructed before 1 July 2017 in accordance with the requirements in force up to 31 December 2016 but which do not conform to the requirements of 6.8.3.4.10, 6.8.3.4.11 and 6.8.3.5.4 applicable from 1 January 2017 may continue to be used until the next inspection after 1 July 2017. Until this time, to meet the requirements of 4.3.3.5 and 5.4.1.2.2(d), the actual holding times may be estimated without recourse to the reference holding time.

1.6.4.48 Tank-containers constructed before 1 July 2017 in accordance with the requirements in force up to 31 December 2016 but which do not however conform to the requirements of 6.8.2.1.23 applicable as from 1 January 2017 may still be used.

1.6.4.49 Tank-containers constructed before 1 July 2019, fitted with safety valves meeting the requirements in force up to 31 December 2018 but which do not meet the requirements of 6.8.3.2.9 last sub-paragraph concerning their design or protection applicable from 1 January 2019 may continue to be used until the next intermediate or periodic inspection after 1 January 2021.

1.6.4.50 Notwithstanding the requirements of special provision TU42 of 4.3.5 applicable from 1 January 2019, tank-containers with a shell constructed of aluminium alloy, including those with a protective lining, which were used before 1 January 2019 for the carriage of substances with a pH value less than 5.0 or more than 8.0, may continue to be used for the carriage of such substances until 31 December 2026.

1.6.4.51 Tank-containers constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which do not conform to the requirements of 6.8.2.2.10 concerning the burst pressure of the bursting disc applicable as from 1 January 2019 may continue to be used.

1.6.4.52 Tank-containers constructed before 1 July 2019 in accordance with the requirements of 6.8.2.2.3 in force up to 31 December 2018 but which however do not conform to the requirements of 6.8.2.2.3 last paragraph concerning the flame arresters on breather devices applicable from 1 January 2019 may continue to be used.

1.6.4.53 Tank-containers constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which do not however conform to the requirements of 6.8.2.1.23 concerning the check of the welds in the knuckle area of the tank ends applicable as from 1 January 2019 may continue to be used.

1.6.4.54 Tank-containers constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which however do not conform to the requirements of 6.8.2.2.11 applicable from 1 January 2019 may continue to be used.

1.6.4.55 *(Reserved)*

1.6.4.56 Tank-containers which do not comply with the requirements of 6.8.3.4.6 (b) applicable from 1 January 2023, may continue to be used if an intermediate inspection takes place at least six years after each periodic inspection performed after 1 July 2023.

1.6.4.57 Except in relation to 6.8.1.5, second paragraph, second indent, procedures used by the competent authority for the approval of experts performing activities concerning tank-containers intended for the carriage of substances other than those for which TA4 and TT9 of 6.8.4 apply which conform to the requirements of Chapter 6.8 in force up to 31 December 2022 but which do not conform to the requirements of 1.8.6 applicable to inspection bodies from 1 January 2023 may continue to be used until 31 December 2032.

*NOTE: The term "expert" has been replaced by the term "inspection body".*

1.6.4.58 Type approval certificates issued for tank-containers intended for the carriage of substances other than those for which TA4 and TT9 of 6.8.4 apply, issued before 1 July 2023 in compliance with Chapter 6.8, but which do not comply with 1.8.7 as applicable from 1 January 2023, may continue to be used until the end of their validity.

1.6.4.59 Fibre-reinforced plastics tank-containers constructed before 1 July 2033 in accordance with the requirements of Chapter 6.9 in force up to 31 December 2022 may still be used in accordance with the provisions of Chapter 4.4 in force up to 31 December 2022.

1.6.4.60 Tank-containers constructed before 1 January 2024 in accordance with the requirements in force up to 31 December 2022 but which do not, however, conform to the requirements applicable as from 1 January 2023 regarding the fitting of safety valves in accordance with 6.8.3.2.9, may still be used.

1.6.4.61 Tank-containers constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not meet the requirements of 6.8.2.2.4, second and third paragraph, applicable from 1 January 2023, may still be used.

1.6.4.62 Extra-large tank-containers constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not meet the requirements of 6.8.2.1.18, third paragraph, concerning the minimum thickness of the shell applicable as from 1 January 2023 may still be used.

1.6.4.63 Tank-containers constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not, however, meet the requirements of special provision TE26 of 6.8.4 (b) applicable as from 1 January 2023 may continue to be used.

1.6.4.64 Tank-containers that are already fitted with safety valves meeting the requirements of 6.8.3.2.9 as applicable from 1 January 2023 do not need to display the marks in accordance with 6.8.3.2.9.6 until the next intermediate or periodic inspection after 31 December 2023.

1.6.4.65 Tank-containers constructed before 1 July 2025 in accordance with the requirements in force up to 31 December 2024, but which however do not conform to the requirements of 6.8.2.2.11 applicable from 1 January 2025, may continue to be used.

1.6.4.66 Portable tanks constructed before 1 January 2027 in accordance with the requirements in force up to 31 December 2024, but which do not, however, conform to the requirements of 6.7.4.15.1 (i) (iv) applicable as from 1 January 2025 may continue to be used.

## 1.6.5 Vehicles

1.6.5.1 and 1.6.5.2 *(Reserved)*

1.6.5.3 *(Deleted)*

1.6.5.4 As regards the construction of AT vehicles, the requirements of Part 9 in force up to 31 December 2024 may be applied until 31 December 2026.

1.6.5.5 Vehicles registered or entering into service before 1 January 2003 the electric equipment of which does not comply with the requirements of 9.2.2, 9.3.7 or 9.7.8 but complies with the requirements applicable until 30 June 2001 may still be used.

1.6.5.6 *(Deleted)*

1.6.5.7 Complete or completed vehicles which have been type-approved before 31 December 2002 according to UN Regulation No. 105<sup>3</sup> as amended by the 01 series of amendments or the corresponding provisions of Directive 98/91/EC<sup>4</sup> and which do not comply with the requirements of Chapter 9.2 but comply with the requirements applicable to the construction of base vehicles (marginals 220 100 to 220 540 of Appendix B.2) applicable until 30 June 2001 may continue to be approved and used provided they are first registered or they entered into service before 1 July 2003.

<sup>3</sup> UN Regulation No. 105 (Uniform provisions concerning the approval of vehicles intended for the carriage of dangerous goods with regard to their specific constructional features).

<sup>4</sup> Directive 98/91/EC of the European Parliament and of the Council of 14 December 1998 relating to motor vehicles and their trailers intended for the transport of dangerous goods by road and amending Directive 70/156/EEC relating to the type approval of motor vehicles and their trailers (Official Journal of the European Communities No. L 011 of 16 January 1999, pp. 0025-0036).

1.6.5.8 EX/II and EX/III vehicles which have been first approved before 1 July 2005 and which comply with the requirements of Part 9 in force up to 31 December 2004 but which do not however conform to the requirements applicable as from 1 January 2005 may still be used.

1.6.5.9 Tank-vehicles with fixed tanks with a capacity of more than 3 m<sup>3</sup> intended for the carriage of dangerous goods in the liquid or molten state tested with a pressure of less than 4 bar, which do not comply with the requirements of 9.7.5.2, first registered (or which entered into service if the registration is not mandatory) before 1 July 2004, may still be used.

1.6.5.10 Certificates of approval which conform to the model shown in 9.1.3.5 applicable up to 31 December 2006 and those which conform to the model shown in 9.1.3.5 applicable from 1 January 2007 to 31 December 2008 may continue to be used. Certificates of approval which conform to the model shown in 9.1.3.5 applicable from 1 January 2009 up to 31 December 2014 may continue to be used.

1.6.5.11 MEMUs which have been constructed and approved before 1 July 2009 in accordance with the provisions of national law but which do not, however, conform to the construction and approval requirements applicable as from 1 January 2009 may be used with the approval of the competent authorities in the countries of use.

1.6.5.12 EX/III and FL vehicles registered or entering into service before 1 April 2012, the electrical connections of which do not comply with the requirements of 9.2.2.6.3, but comply with the requirements applicable until 31 December 2010, may still be used.

1.6.5.13 Trailers first registered (or which entered into service if registration was not mandatory) before 1 July 1995 equipped with anti-lock braking system in conformity with UN Regulation No. 13, 06 series of amendments but which do not comply with the technical requirements for category A anti-lock braking system may still be used.

1.6.5.14 MEMUs which have been approved before 1 July 2013 in accordance with the provisions of ADR in force up to 31 December 2012, but which do not conform to the requirements of 6.12.3.1.2 or 6.12.3.2.2 applicable as from 1 January 2013, may still be used.

1.6.5.15 As regards the application of the provisions of Part 9, vehicles first registered or entered into service before 1 November 2014 and which have been approved according to the provisions of the directives repealed by the Regulation (EC) No. 661/2009<sup>5</sup>, may continue to be used.

1.6.5.16 EX/II, EX/III, FL and OX vehicles registered before 1 April 2018, fitted with fuel tanks not approved according to UN Regulation No. 34 may still be used.

1.6.5.17 Vehicles first registered or entering into service before 1 April 2018 that do not comply with subsection 9.2.2.8.5 or standards ISO 6722-1:2011 + Cor 01:2012 or ISO 6722-2:2013 for cables of subsection 9.2.2.2.1, but comply with the requirements applicable until 31 December 2016, may continue to be used.

1.6.5.18 Vehicles first registered or entering into service before 1 April 2018 approved specifically as OX vehicle may continue to be used for the carriage of substances of UN No. 2015.

1.6.5.19 As regards the annual technical inspection of the vehicles first registered or entering into service before 1 April 2018 approved specifically as OX vehicle, the requirements of Part 9 in force up to 31 December 2016 may still be applied.

1.6.5.20 Certificates of approval for OX vehicles which conform to the model shown in 9.1.3.5 applicable up to 31 December 2016 may continue to be used.

1.6.5.21 *(Deleted)*

1.6.5.22 Vehicles first registered (or which entered into service if registration is not mandatory) before 1 January 2021 in compliance with the requirements of 9.7.3 applicable until 31 December 2018, but not in compliance with the requirements of 9.7.3 applicable as from 1 January 2019, may continue to be used.

<sup>5</sup> Regulation (EC) 661/2009 of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor (Official Journal L 200 of 31.7.2009, p. 1).

1.6.5.23 EX/III vehicles first registered or entering into service before 1 January 2029, in accordance with the requirements of 9.7.9.2 applicable until 31 December 2022, but which do not conform to the requirements of 9.7.9.2 applicable as from 1 January 2023, may continue to be used.

1.6.5.24 FL vehicles first registered or entering into service before 1 January 2029, which do not conform to the requirements of 9.7.9.1 applicable as from 1 January 2023, may continue to be used.

1.6.5.25 FL vehicles first registered or entering into service before 1 January 2029, which do not conform to the requirements of 9.7.9.2 applicable as from 1 January 2023, may continue to be used.

1.6.5.26 Vehicles first registered (or which entered into service if registration is not mandatory) before 1 January 2027, approved as AT vehicles not in compliance with the provisions of 9.2.4.2 concerning fuel tanks may continue to be used.

1.6.5.27 Vehicles first registered (or which entered into service if registration is not mandatory) before 1 January 2027, approved as AT vehicles not in compliance with the provisions of 9.2.4.4.2 concerning the evaluation of the rechargeable electrical energy storage system may continue to be used.

1.6.5.28 Vehicles first registered (or which entered into service if registration is not mandatory) before 1 January 2027, approved as AT vehicles, not in compliance with the provisions of 9.2.4.3.1 concerning engines, may continue to be used.

## 1.6.6 Class 7

### 1.6.6.1 *Packages not requiring competent authority approval of design under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material*

Packages not requiring competent authority approval of design (excepted packages, Type IP-1, Type IP-2, Type IP-3 and Type A packages) shall meet the requirements of ADR in full, except that:

(a) Packages that meet the requirements of the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material:

- (i) May continue to be carried provided that they were prepared for carriage prior to 31 December 2003 and are subject to the requirements of 1.6.6.2.3, if applicable; or
- (ii) May continue to be used, provided that all the following conditions are met:
  - They were not designed to contain uranium hexafluoride;
  - The applicable requirements of 1.7.3 are applied;
  - The activity limits and classification in 2.2.7 are applied;
  - The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied; and
  - The packaging was not manufactured or modified after 31 December 2003;

(b) Packages that meet the requirements of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material:

- (i) May continue to be carried provided that they were prepared for carriage prior to 31 December 2025 and are subject to the requirements of 1.6.6.2.3, if applicable; or
- (ii) May continue to be used, provided that all the following conditions are met:
  - The applicable requirements of 1.7.3 are applied;
  - The activity limits and classification in 2.2.7 are applied;
  - The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied; and
  - The packaging was not manufactured or modified after 31 December 2025.

**1.6.6.2** *Package designs approved under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material*

**1.6.6.2.1** Packages requiring competent authority approval of the design shall meet the requirements of ADR in full except that:

(a) Packagings that were manufactured to a package design approved by the competent authority under the provisions of the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used provided that all of the following conditions are met:

- (i) The package design is subject to multilateral approval;
- (ii) The applicable requirements of 1.7.3 are applied;
- (iii) The activity limits and classification in 2.2.7 are applied; and
- (iv) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied;
- (v) *(Reserved);*

(b) Packagings that were manufactured to a package design approved by the competent authority under the provisions of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used provided that all of the following conditions are met:

- (i) The package design is subject to multilateral approval after 31 December 2025;
- (ii) The applicable requirements of 1.7.3 are applied;
- (iii) The activity limits and material restrictions of 2.2.7 are applied;
- (iv) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied.

**1.6.6.2.2** No new manufacture of packagings to a package design meeting the provisions of the 1985 and 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence.

**1.6.6.2.3** No new manufacture of packagings of a package design meeting the provisions of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence after 31 December 2028.

**1.6.6.3** *Packages excepted from the requirements for fissile materials under the 2011 and 2013 editions of ADR (2009 edition of the IAEA Regulations for the Safe Transport of Radioactive Material)*

Packages containing fissile material that is excepted from classification as "FISSILE" according to 2.2.7.2.3.5 (a) (i) or (iii) of the 2011 and 2013 editions of ADR (paras. 417 (a) (i) or (iii) of the 2009 edition of the IAEA Regulations for the Safe Transport of Radioactive Material) prepared for carriage before 31 December 2014 may continue in carriage and may continue to be classified as non-fissile or fissile-excepted except that the consignment limits in Table 2.2.7.2.3.5 of these editions shall apply to the vehicle. The consignment shall be carried under exclusive use.

**1.6.6.4** *Special form radioactive material approved under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material*

Special form radioactive material manufactured to a design that had received unilateral approval by the competent authority under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used when in compliance with the mandatory management system in accordance with the applicable requirements of 1.7.3. There shall be no new manufacture of special form radioactive material to a design that had received unilateral approval by the competent authority under the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material. No new manufacture of special form radioactive material to a design that had

received unilateral approval by the competent authority under the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence after 31 December 2025.