CIT/GE8624/ACE

Geneve, 9 January 2023

ADR 2023 - AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

Overview of the main amendments contained in ADR 2023

The dangerous goods transport regulations by road (ADR) will change as of 1 January 2023.

This overview is based on publications by the UNECE working group. The electronic files of ADR in English and French may be consulted on the Economic Commission for Europe Sustainable Transport Division's website: https://unece.org/transport/standards/transport/dangerous-goods/adr-2023-agreement-concerning-international-carriage

The ADR 2023 will come into force on 1 January 2023. As always, there will be a general 6-month transition period, i.e. the current provisions of ADR 2021 may continue to be used without restrictions until 30 June 2023. Irrespective of this, further special transitional periods can be found in Chapter 1.6 of the ADR.

The new regulations are based on the 22nd edition of the UN recommendations on the transport of dangerous goods. These will also be implemented in parallel for the other modes of transport, identical to the ADR for rail and inland waterway transport, for air transport without a transitional period from 1 January 2023, and for sea transport with Amendment 41-22 to the IMDG Code only binding as of 1 January 2024. However, the new IMDG Code may already be applied from 1 January 2023, to enable simultaneous implementation for companies.

The ADR 2023 is again subject to numerous changes, the main ones are shown in the following overview, in Annex 1:

- The detailed changes can be found in the following table, which compares the previous regulations to the new ones.
- A proposal indication on the priorities is also included.

Major changes include:

- A new regulation for gas cylinders from the USA in the new subsection 1.1.4.7
- A new section 1.2.3 is added with abbreviations previously included in 1.2.1.
- Sections 1.8.6 and 1.8.7 have been fundamentally revised with numerous changes relating to the conformity assessment of pressure receptacles
- A new UN number is introduced; this substance was previously assigned to UN 3077 UN 3550 - COBALT DIHYDROXIDE POWDER with at least 10% respirable particles Class 6.1 VG I (see also the last page of this document)
- UN 1169 EXTRACTS, AROMATIC, LIQUID and UN 1197 EXTRACTS, FLAVORING, LIQUID are combined under UN 1197 EXTRACTS, LIQUID
- Elimination of the telephone number in the lithium battery license plate

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- New regulations for UN 3536 lithium batteries installed in cargo transport units about the application of 1.1.3.6 (1000-point regulation)
- In the case of waste, the quantity specified for the transport document can be estimated in the future
- New Chapter 6.9, this then only applies to portable tanks made of fibre-reinforced plastics (FRP)
- New Chapter 6.13 for fixed tanks (tank vehicles) and demountable tanks

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Annex 1

CIT/GE8624/ACE
09/01/2023

Site / Content	2021	2023	Priorities
Chapter 1 - General Regulations			
1.1.3.6.3 1000 points rule transport category 2	UN 3291 (CLINICAL WASTE, UNSPECIFIED, N.O.S.) is assigned to transport category 2 in the Dangerous Goods Table; thus, due to the introductory sentence in 1.1.3.6.3	A separate entry for class 6.2 is made for UN 3291 in the table in 1.1.3.6.3	**X**
1.1.3.6.3 1000 points rule transport category 2	UN number 3536 (LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNITS) not included in the table because no transport category is assigned to this UN number in the dangerous goods table. This means that the transports are always subject to identification.	For transport category 2, UN number 3536 is added to class 9	**X**
1.1.4.7 American gas cylinders	Unavailable Regulations for this only exist as multilateral agreements, currently the M318	New subsection Refillable pressure receptacles approved by the United States Department of Transportation An entry in the transport document is required, "Carriage according to paragraph 1.1.4.7.1" or "Carriage according to paragraph 1.1.4.7.2". see also 5.4.1.1.23.	**X**

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		Note: 1.1.4.7.1 regulates the import of gases, 1.1.4.7.2 the export of gases and uncleaned empty pressure vessels.	
1.2 Definitions			**X**
1.2.3 List of abbreviations	No separate section The abbreviations are integrated in 1.2.1	New paragraph 1.2.3 with a separate list of abbreviations such as ADR, RID etc. Consequently, the abbreviations in 1.2.1 are deleted	
1.2.1 definitions operating equipment	The definition of "servicing equipment" contains 3 sub-items a), b) and c)	A sub-item d) is added to the definition of "servicing equipment": d) of a pressure vessel: closures, headers, piping, porous, absorbent or adsorbent material and all structural facilities, e.g. B. for handling	
1.2.1 definitions filler	The definition of "filler" states: for goods in bulk”	New wording: "for carriage in bulk"	
1.2.1 definitions operating pressure	Working pressure is defined as: The developed pressure of a compressed gas at a reference temperature of 15 °C in a full pressure vessel. NOTE For tanks see definition of maximum working pressure	New wording: "Operating pressure: a) for a compressed gas, the pressure developed at a reference temperature of 15 °C in a full pressure vessel; b) for UN 1001 Acetylene, dissolved, the calculated pressure developed at a uniform Reference temperature of 15 °C in an acetylene cylinder,	

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		which corresponds to the specified solvent content and maximum acetylene content; c) for UN 3374 acetylene, solvent-free, that for an equivalent cylinder for UN 1001 Acetylene, dissolved, calculated working pressure.	
1.2.1 definitions Manual of Tests and Criteria	Manual Tests and Criteria refers to 7th edition	Manual of Tests and Criteria refers to 7th edition, Amendment 1 Note d. V.: This edition may therefore only be used from January 1st, 2023 and not earlier in "anticipatory obedience"	
1.2.1 definitions GHS	GHS refers to 8th Edition	GHS refers to 9th edition	
1.2.1 definitions UN Model Regulations	Reference to 21st Edition of the UN Model Regulations	Reference to 22nd Edition of the UN Model Regulations	
1.2.1 definitions aerosol pack	It says in the definition "non-refillable vessel"	New formulation "non-refillable vessel"	
1.2.1 definitions pressure vessel	Definition reads: Pressure Vessel: A collective term for cylinder, cylinder, pressure drum, sealed cryogenic vessel, metal hydride storage system, cylinder bundle and salvage pressure vessel	New formulation at the beginning: Pressure receptacle: A transportable receptacle for containing substances under pressure, including its closure(s) and other service equipment, and a collective term...".	
1.2.1 definitions discharger	The definition of "discharger" states: …for goods in bulk	New wording: …for carriage in bulk	

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1.2.1 definitions bottle bundle	The text says: A unit of bottles…	New wording: A pressure vessel consisting of a unit of cylinders or cylinder bodies...	
1.2.1 definitions Flexible bulk pack	At the end of the definition, it says: …with an inner coating or lining	New formulation …with an inner coating or an inner lining	
1.2.1 definitions Gas container with several elements	The term "MEGC" is used in various places	It is now always ""..Gas container with multiple elements"	
1.2.1 definitions Vessel, small, with gas (gas cartridge)	It says in the definition non-refillable vessel	New formulation non-refillable vessel	
1.2.1 definitions conformity assessment	The term type approval is used	New term: type examination	
1.2.1 definitions cryogenic tank	Definition reads: Cryo-vessel: Transportable, heat-insulated pressure vessel for the carriage of refrigerated liquefied gases with a maximum water capacity of 1000 liters (see also open cryo-vessel).	New definition: Sealed cryogenic vessel: Thermally insulated pressure vessel for refrigerated liquefied gases with a water capacity of not more than 1000 liters	
1.2.1 definitions metal hydride storage system	Definition reads: A single complete hydrogen storage system, containing a vessel, metal hydride, pressure relief device, isolation valve, service equipment and internal components, used only for the carriage of hydrogen	New definition: A single complete hydrogen storage system, containing a pressure vessel body, metal hydride, pressure relief device, isolation valve, service equipment and internal components, used	

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		solely for the carriage of hydrogen	
1.2.1 definitions Offshore bulk containers	It says there: “A container for goods in bulk"	New wording: "A bulk container	
1.2.1 definitions recycled plastics Previous	Definition: Recycled Plastics: Materials recovered from used industrial packaging, cleaned and prepared for processing into new packaging.	New definition: Recycled Plastics: Materials made from used industrial packaging recovered, cleaned and prepared for processing into new packaging became. The special properties of the for the production of new packaging The recycled plastics used must be guaranteed and regularly documented as part of a quality assurance program recognized by the competent authority. The quality assurance program shall include a record of appropriate pre-sorting and verification that each batch of recycled plastic has the appropriate melt index, density and tensile strength values to match a design made from such recycled material. The quality assurance information necessarily includes information about the packaging material from which the recycled plastics were obtained, as well as knowledge of the substances previously contained in this packaging, insofar as these may indicate the suitability of new ones under use packaging made of this material could affect. About that In addition, the quality assurance program used by the manufacturer of the packaging according to subsection 6.1.1.4 must	

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		include the performance of mechanical type tests on packaging from each batch of recycled plastic according to section 6.1.5. In these tests, the stacking strength may be demonstrated by a suitable dynamic pressure test instead of a static load test. NOTE The standard ISO 16103:2005 "Packaging - Packaging for transport Dangerous Goods – Recycled Plastics" provides additional guidance on procedures to be followed when authorizing the use of recycled plastics. These guidelines have been developed based on experience gained in the manufacture of drums and jerrycans from recycled plastics developed and as such may need to be adapted for other types of packaging, Intermediate Bulk Containers (IBC) and bulk packaging made from recycled plastic."	
1.2.1 definitions Regular maintenance of a flexible bulk packaging	(IBC in paragraph b) it says "linings"	New text: "Inner Linings".	
1.2.1 definitions reconditioned Packaging	paragraph a) (iii) states "visible small holes"	New text: "Visible punctiform indentations (pit-ting)"	
1.2.1 definitions Molded Bottle	Previous texts: – "made of a coated, welded inner bottle made of steel" – "the steel bottle"	New texts: "made of a coated welded steel inner bottle body". - "of the steel bottle body"	
1.2.1 definitions	Remark reads: Certain items that contain hazardous substances are	The remark is deleted	

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packing group	also assigned to a packaging group.	Note: Items are no longer assigned to packaging groups, this has already been changed with ADR 2015	
1.2.1 definitions closure	No definition included	New comment: Closures of pressure vessels are, for example, valves, pressure relief devices, pressure gauges or level indicators	
1.2.1 definitions pressure vessel body	No definition included	New definition: Pressure receptacle body: A cylinder, cylinder, pressure drum or salvage pressure receptacle without its closures or other service equipment, but including any permanently attached fittings (e.g. neck ring, foot ring). NOTE: The terms "cylinder body", "pressure drum body" and "cylinder body" are also used	
1.2.1 definitions Fiber reinforced plastic	No definition included	New definition: Fibre-reinforced plastic: A material made from a fibrous and/or particulate material reinforcement contained in a duroplastic or thermoplastic polymer (matrix)."	
1.2.1 definitions inner container	No definition included	New definition: Inner Vessel of a Sealed Cryogenic Vessel: The pressure vessel used for the Recording of the refrigerated liquefied gas is determined	
1.2.1 definitions Particularly large tank container	No definition included	New definition: Particularly large tank container: A tank container with a capacity of more than 40,000 liters	

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1.2.2.1 units	No information on electrical resistance included	New row is inserted for - Electrical resistance Ω (Ohm) - 1Ω = 1kg m² / s³ / A²	
1.2.3 List of abbreviations	Abbreviations are included in Section 1.2.1	New paragraph contains the following abbreviations - ADN - ADR - ASTM - CGA - CIM - CMR - CNG - CSC - CSI - ECM - EIGA - EN (-Norm) - FVK - GHS - IAEO - IBC - ICAO - IMDG - IMO - ISO (-Norm) - LNG - LPG - LSA (-Stoff) - MEGC - n.a.g. - OTIF - SADT - SAPT - SCO (-Gegenstand) - SMGS - TI - UIC	

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		- UNECE	
1.4.2.1.1 Sender Obligations	Paragraph e) states: "for goods in bulk"	New wording: "for carriage in bulk"	
1.4.2.2.1 carrier obligations	Paragraph d) states: "the deadline"	New wording: "the appointed date"	
1.4.3.3 filler duties	Paragraph b) states: "the date of the next test"	New wording: "the fixed date for the next test"	
1.6 transitional provisions			
1.6.1.1 General 6-month transition period	The provisions of ADR 2019 may be applied until June 30th, 2021.	The provisions of ADR 2021 may be applied until June 30, 2023.	
1.6.1.41 Use of bulk packaging for VG III for UN 1950	Large packagings for PG III may continue to be used for UN 1950 AEROSOLS	Transition period is canceled due to the expiry of the period; the bulk packaging now requires a Y or X approval	
1.6.1.44 Dangerous goods officer for "pure" senders	Companies that only have sender obligations do not need to appoint a dangerous goods officer until the end of 2022	Transition period is canceled due to the expiry of the period Note:This was not relevant for Germany, since a Gb has always had to be ordered here, even in the case of pure sender obligations	
1.6.1.46 Carriage of items with dangerous goods as an integral part	The earlier exemption according to 1.1.3.1 b) may still be used until the end of 2022	Transition period is canceled due to the expiry of the period Note: The effects of this new regulation are significant, as there are many objects, devices and machines that contain dangerous goods	
1.6.1.49 License plate for lithium batteries according to SP 188	No transition period included The UN number and a telephone number must be entered in the license plate	New transition period: Only the UN number has to be specified in the license plate, therefore New transitional period for the use of the previous identifiers	

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		for lithium batteries according to SP 188: The number plates with telephone numbers may still be used until December 31, 2026.	
1.6.1.50 Concerns UN 0511, UN 0512 and UN 0513	No transition period included But multilateral agreement M344 in place	New transition period: For items that meet the definition of "SPRENGKAP-SELN, ELECTRONIC" given in subsection 2.2.1.4 Glossary of Terms and assigned to UN Nos. 0511, 0512 and 0513, the entries for "PRINCIPLES, ELECTRICAL" (UN Nos. 0030, 0255 and 0456) may continue to be used until 30 June 2025	
1.6.1.51 Concerns adhesives, paints and paint related materials, printing inks and printing ink related materials, resin solutions assigned to UN number 3082	No transition period included But multilateral agreement M343 in place	New transition period: Adhesives, paints and paint related materials, printing inks and printing ink related materials and resin solutions prepared in accordance with paragraph 2.2.9.1.10.6 as a result of paragraph 2.2.9.1.10.5*) of UN number 3082 environmentally hazardous substance, liquid, n.o.s., assigned to packing group III and containing at least 0.025% of the following Substances contained individually or in combination: - 4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT), – Octhilinone (OIT) and – zinc pyrithione (ZnPT), may be used in packaging made of steel, aluminum or another until June 30, 2025 Metal or plastic not meeting the requirements of 4.1.1.3, carried in quantities not	

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		exceeding 30 liters per packaging, as follows: a) as a pallet load, in lattice box pallets or load units, e.g. B. single Packaging placed or stacked on a pallet and secured with straps, stretch or shrink wrap or other suitable method on the pallet are attached, or b) as inner packaging of composite packaging with a maximum Net mass of 40 kg.	
1.6.1.52 Identification of inner containers of combination IBCs		New transition period: Liners of combination IBCs manufactured before July 1, 2021 in accordance with the 31 December 2020 applicable provisions of paragraph 6.5.2.2.4 were manufactured, however, do not comply with the requirements of 6.5.2.2.4 applicable from 1 January 2021 in relation to the markings on the liner which, because of the design of the outer casing, are not easily accessible for inspection, shall be permitted up to in subsection 4.1.1.15 specified end of their useful life.i	
1.6.2.10 Pressure receptacles other	Refillable Welded Steel Bottles…	New text: Refillable Welded Steel Bottles…	
1.6.2.16 Pressure receptacles other than UN pressure receptacles Recurring test	The until 31. The provisions of note 3 of paragraph 6.2.3.5.1 that apply from December 2020 may be applied until December 31, 2022	Transition period is canceled due to the expiry of the period	
1.6.2.17 Recurrent testing of refillable pressure vessels		New transition period: The provisions of note 3 of paragraph applicable until December 31, 2022	

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		6.2.1.6.1 may be applied until December 31, 2024 Note d. V.: Concerns the use of ultrasonic examinations instead of pressure tests	
1.6.2.18 Testing of closed cryo containers		New transition period Sealed cryogenic containers before the July 1, 2023 were built and the Provisions for the initial examination of the applicable until December 31, 2022 Paragraph 6.2.1.5.2 was subject to, but not those applicable from 1 January 2023 comply with the requirements for the initial inspection of paragraph 6.2.1.5.2 be reused.	
1.6.2.19 Marking of acetylene cylinders		New transition period Acetylene cylinders constructed before July 1, 2023 and not marked in accordance with the requirements of paragraph 6.2.2.7.3 k) or l) applicable from January 1, 2023 are allowed until the next, after July 1st, 2023.	
1.6.2.20 Closures of refillable pressure vessels		New transition period Closures of refillable pressure receptacles constructed before July 1, 2023 and are not labeled in accordance with the provisions of subsection 6.2.2.11 or paragraph 6.2.3.9.8 applicable from January 1, 2023 may continue to be used will.	
1.6.5.23 EX/III vehicles		New transition period EX/III vehicles first admitted to traffic or put into service before January 1, 2029 in accordance with the	

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		provisions of subsection 9.7.9.2 applicable until December 31, 2022, but not the from 1 January 2023 comply with the applicable provisions of subsection 9.7.9.2 may continue to be used.	
1.6.6 Transitional provisions for Class 7 - Radioactive materials	In 1.6.6.1, 1.6.6.2, 1.6.6.4 it says respectively 2009 and 2012	New text: 2009 or 2012	
1.7 General regulations for radioactive substances			
1.7.1.1 IAEA regulations	2nd sentence reads: These standards are based on the 2018 Edition of the IAEA Regulations for the Safe Transport of Radioactive Material	New text: The ADR is based on the 2018 edition of the IAEA regulations for the safe transport of radioactive materials.	
1.8 Measures to control and otherwise support compliance with the safety regulations			
1.8.6 1.8.7 1.8.8 Type approval of pressure vessels and tanks, battery vehicles, demountable tanks, MEGC	Section headings: 1.8.6: Administrative controls for the application of the conformity assessments, periodic inspections, intermediate inspections and extraordinary inspections described in Section 1.8.7 1.8.7: Conformity assessment and in-service inspection procedures 1.8.8: Conformity assessment procedure for gas cartridges	Sections 1.8.6, 1.8.7 are revised, Section 1.8.8 modified 1.8.6: Administrative controls for those described in Sections 1.8.7 and 1.8.8 activities 1.8.7 Procedures for the assessment of conformity, the issuance of the type approval certificate and the tests 1.8.8: Conformity assessment procedure for gas cartridges Note d. V.: The changes concern the authorities and inspection bodies for pressure vessels and tanks. Details are not discussed	**X**

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		here. For those who are interested, there is a very nice summary of the history of these changes.	
1.10 Security Rules			
1.10.4 Application of the "1000-point rule" to dangerous goods with a high-risk potential	UN 0511 not listed	UN 0511 is added in the first sentence	
Part 2 - Classification			
2.1.4.3.1 Samples of energetic substances for testing purposes	Letter a) is a line listing with 4 sub-items Dto. for letter b) with 2 sub-points	The sub-items are now denoted by (i), (ii), (iii) and (iv). The sub-items are now denoted by (i) and (ii).	
2.2.1.1.7.5 Classification of fireworks	Note 3 contains 4 bullet points	The sub-items are now labeled a), b), c) and d).	
2.2.2.2.2 Gas carriage bans	When referring to dissolved gases, only UN numbers 1001, 2073 and 3318 are listed	In the 5th indent list, UN 1043 is supplemented with the reference to SP 642 for dissolved gases	
2.2.2.3 Collective entries for Class 2 gases	Under classification code 5, the designation of the UN no. 2037 "non-refillable"	The text is changed to "non-refillable"	
2.2.3.3 Collective entries for class 3	Two entries included for UN 1169 EXTRACTS, AROMA TABLE, LIQUID UN 1197 EXTRACTS, GE-FLAVOURING, LIQUID	Both entries are replaced by a new entry: UN 1197 LIQUID EXTRACTS for flavor or aroma	
2.2.41.4	The fourth sentence reads:	New text: The preparations not listed in this subsection but contained	

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List of already assigned self-reactive substances	The preparations listed in packing instruction IBC 520 of 4.1.4.2 and in portable tank instruction T 23 of 4.2.5.2.6 may also be prepared according to packing instruction P 520 of 4.1.4.1, if necessary, with the same control and emergency temperatures packing method OP8 packed.	in packing instruction IBC 520 of 4.1.4.2 and portable tank instruction T23 of 4.2.5.2.6 may be included as appropriate same control and emergency temperatures, also packaged according to subsection 4.1.4.1 packing instruction P 520 packing method OP8.	
	Entry not available	A new entry is added in the table of self-reactive substances: (7-METHOXY-5-METHYL-BENZOTHIOPHEN-2-YL) BORIC ACID	
	10 comments are listed after the table	An 11th comment is added for the new entry mentioned above: (11) The technical compound with the specified concentration limits may contain up to 12% water and up to 1% organic impurities.	
2.2.52.4 directory of already associated organic peroxides	4th sentence reads: The ones in the packing instructions IBC 520 of the subsection 4.1.4.2 and in the instruction for portable tanks T 23 des paragraph 4.2.5.2.6 Preparations may, where appropriate with the same controls emergency temperatures, too according to subsection 4.1.4.1 Packing instruction P 520 Packing method OP8 packed to get promoted.	The sentence now reads: The preparations in this subsection are not listed, but in the Subsection Packing Instruction IBC 520 4.1.4.2 and in the instruction for portable tanks T 23 of paragraph 4.2.5.2.6 may, where appropriate with the same control and emergency temperatures, also according to subsection 4.1.4.1 Packing instruction P 520 Packing method OP8 packaged to be transported.	
	3 new organic peroxides are added to the list, each with the already existing entries A) ACETYLACETONE PEROXIDE		

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	<table><tr><td>Organisches Peroxid</td><td>(2)</td><td>(3)</td><td>(4)</td><td>(5)</td><td>(6)</td><td>(7)</td><td>(8)</td><td>(9)</td><td>(10)</td><td>(11)</td></tr><tr><td>"</td><td>≤ 35</td><td>≥ 57</td><td></td><td></td><td>≥ 8</td><td>OP8</td><td></td><td></td><td>3107</td><td>32)</td></tr></table> B) tert-BUTYLPEROXYISOPROPYLCARBONAT <table><tr><td>Organisches Peroxid</td><td>(2)</td><td>(3)</td><td>(4)</td><td>(5)</td><td>(6)</td><td>(7)</td><td>(8)</td><td>(9)</td><td>(10)</td><td>(11)</td></tr><tr><td>"</td><td>≤ 62</td><td></td><td>≥ 38</td><td></td><td></td><td>OP7</td><td></td><td></td><td>3105</td><td></td></tr></table> C) ert-HEXYLPEROXYPIVALAT <table><tr><td>Organisches Peroxid</td><td>(2)</td><td>(3)</td><td>(4)</td><td>(5)</td><td>(6)</td><td>(7)</td><td>(8)</td><td>(9)</td><td>(10)</td><td>(11)</td></tr><tr><td>" (als stabile Dispersion in Wasser)</td><td>≤ 52</td><td></td><td></td><td></td><td></td><td>OP8</td><td>+15</td><td>+20</td><td>3117</td><td></td></tr></table> A new comment 32) is added for the new entry under a). 32) Active oxygen content <= 4.15%		
2.2.7.2.3.1.4 and 2.2.7.2.3.1.5 leaching test for LSA-III substances	Conducting this exam is described here	The two paragraphs are deleted, these Testing is no longer required for LSA.III substances	
2.2.7.2.3.4.3 (new)	The previous paragraph 2.2.7.2.3.4.3 becomes 2.2.7.2.3.4.4	New paragraph for low dispersible radioactive Fabrics: A solid swatch containing the entire contents of the package is seven in water at ambient temperature for days to dive in That for the exam volume of water to be used must be sufficient be that at the end of the period of seven days the free volume of unabsorbed and unbound water at least 10% of the volume of the fixed test sample. The water must have a pH of 6 to 8 at the beginning and a maximum conductivity of 1 mS/m at 20 °C. Subsequent to that seven-day immersion of the test specimen the total activity of the free volume of water to eat.	

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2.2.8.1.5.2 Classification of corrosive substances - allocation to packing groups	Reference to OECD guidelines The guidelines are mentioned in footnotes OECD Test Guidelines10), 11), 12), 13) determined as non-corrosive according to the OECD Test Guidelines10), 11), 12), 13).	The numbers of the guidelines are now already listed in the text OECD Test Guideline 404 10), 435 11), 431 12) or 430 13) is determined as non-corrosive with one of these OECD Test Guidelines or is not assigned in accordance with OECD Test Guideline 43914).	
	Unavailable	New footnote 14): OECD Guideline for the testing of chemicals no. 439 "In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method" 2015.	
	Unavailable	New paragraph is added: "If the test results indicate that the substance or mixture is corrosive, but the test method does not allow differentiation between the packing groups, the substance or mixture must be assigned to packing group I, unless other test results indicate a different packing group.	
2.2.9.1.7 g) test summary	The text says: g) Manufacturers and subsequent distributors of cells or batteries manufactured after June 30, 2003 shall provide the test summary specified in the Manual of Tests and Criteria Part III subsection 38.3 paragraph 38.3.5	New text: With the exception of button cell batteries installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after June 30, 2003 must comply with the Manual Tests and Criteria Part III subsection 38.3 paragraph 38.3.5 provide the test summary specified Note: A clear relief for device senders. The 38.3 test itself must of course still be carried out for button cells and the test summary must also be available if the button cells are sent without a device.	
Part 3 - Dangerous Goods Table, Special Provisions, Exemptions			
3.1 and 3.2 dangerous goods table			

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3.2 dangerous goods table New UN number	Product was previously UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID. N.O.S. assigned	New UN number: The following new UN number is added: UN 3550 COBALT DIHYDROXIDE POWDER with at least 10% respirable particles See also the table on the last page with the complete entries in the dangerous goods table	
3.2 dangerous goods table	Entries with special provision 386 Concerns substances stabilized by temperature control or by chemical stabilization The following 57 UN numbers are affected: 1010, 1051, 1060, 1081, 1082, 1085, 1086, 1087, 1092, 1093, 1143, 1167, 1185, 1218, 1246, 1247, 1251, 1301, 1302, 1303, 1304, 1545, 1589, 1614, 1724, 1829, 1860, 1917, 1919, 1921, 1991, 2055, 2200, 2218, 2227, 2251, 2277, 2283, 2348, 2352, 2396, 2452, 2521, 2522, 2527, 2531, 2607, 2618, 2838, 3022, 3073, 3079, 3302, 3531, 3532, 3533 and 3534	A new special provision 676 is added in column (6). SP 676 applies to polymerizing substances to which SP 386 does not apply if they are transported for disposal or recycling. The prerequisite is compliance with the following provisions of SP 676: a) prior to loading, a check has shown that the outside temperature of the package and the ambient temperature do not differ significantly from each other. (b) the carriage takes place within a maximum period of 24 hours after this check. c) the packages are protected from direct sunlight during carriage as well as from the action of other heat sources (e.g. additional cargoes which are carried above ambient temperature); d) the ambient temperatures during carriage are less than 45 °C; e) Vehicles and containers are adequately ventilated. f) the substances are packed in packages with a capacity not exceeding 1000 litres.	
3.2 dangerous goods table	UN numbers for refrigerated liquid flammable gases	New special provision TE26 is added in column 13	

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UN 1038, UN 1961 UN 1966, UN 1972 UN 3138, UN 3312	UN 1038 ETHYLENE, REFRIGERATED LIQUID UN 1961 ETHANE, REFRIGERATED LIQUID UN 1966 HYDROGEN, REFRIGERATED LIQUID UN 1972 METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID, with high methane content UN 3138 ETHYLENE, ACETYLENE AND PROPYLENE MIXTURE, REFRIGERATED LIQUID, with not less than 71.5% ethylene, not more than 22.5% acetylene and not more than 6% propylene UN 3312 GAS, REFRIGERATED LIQUID, FLAMMABLE, N.O.S.	Text of the TE26: All connections for filling and emptying, including connections in the vapor phase, of tanks intended for the carriage of refrigerated liquefied flammable gases shall be fitted as near as practicable to the tank with a quick-closing automatic Shut-off valve (see paragraph 6.8.3.2.3) must be equipped	
3.2 dangerous goods table UN 1002 AIR, COMPRESSED (COMPRESSED AIR)	Column (6) contains special provisions 392, 655, 662	New special provision 397 is added Mixtures of nitrogen and oxygen containing not less than 19.5% and not more than 23.5% by volume oxygen may be carried under this entry if no other oxidizing gases are present. A Class 5.1 subsidiary risk label (model 5.1, see paragraph 5.2.2.2.2) is not required for concentrations within these limit values.	
3.2 dangerous goods table UN 1012	Naming reads: BUT-1-EN or cis-BUT-2-EN or trans-BUT-2-EN or BUTENE, MIXTURE Column (6) contains special provision 662	Naming is now: BUTES New SP 398 is added This entry applies to butenes, mixture, but-1-ene, cis-but-2-ene and trans-but-2-ene. For isobutene, see UN number 1055. NOTE: For additional information in the transport document, see paragraph 5.4.1.2.2 e).	

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3.2 dangerous goods table UN 1169 EXTRACT, AROMA TABLE, LIQUID	UN 1169 has 5 entries in Table A	UN 1169 is deleted These products must now be assigned to UN 1197.	
3.2 Dangerous goods table UN 1197	Naming reads: EXTRACTS, FLAVORS, LIQUID	The naming is changed to EXTRACT, LIQUID, for flavor or aroma Products that were previously assigned to UN 1169 must now be declared as UN 1197	
3.2 dangerous goods table UN 1345	Naming reads: RUBBER (rubber) WASTE, ground or RUBBER (RUBBER) WASTE, powdered or granulated	The following text is added to the designation: ", maximum 840 µm and more than 45% rubber content	
3.2 dangerous goods table UN 1872 LEAD DIOXIDE	Column (3b): OT2 Column (5): 5.1 + 6.1 Column (12): SGAN Column (17): not specified Column (18): CV24, CV28 Column (20): 56	Column (3b): O2 Column (5): 5.1 Column (12): SGAV Column (17): VC1, VC2, AP6, AP7 Column (18): CV24 Column (20): 50	
3.2 dangerous goods table UN 1891 ETHYL BROMIDE	Column (3a): 6.1 Column (3b): T1 Column (5): 6.1 Column (7a): 100ml Column (7b): E4 Column (9b): MP15 Column (13): TU15, TE19 Column (14): AT Column (19): S9, S19 Column (20): 60	Column (3a): 3 Column (3b): FT1 Column (5): 3 + 6.1 Column (7a): 1Ll Column (7b): E2 Column (9b): MP19 Column (13): TU15 Column (14): FL Column (19): S2, S19 Column (20): 336	

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3.2 dangerous goods table UN 1944	Column (2): SAFETY MATCHES (booklets, envelopes or boxes)	Column (2): SAFETY MATCHES (booklet, card or box with friction surface)	
3.2 dangerous goods table UN 2015	Column (2): HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABI-LIZED, with more than 70% hydrogen peroxide	Column (2): HYDROGEN PEROXIDE, STABILIZED or HYDROGEN PEROXIDE, AQUEOUS SOLUTION, STABILIZED, with more than 70% hydrogen peroxide	
3.2 dangerous goods table UN 2037 All 9 entries	Column (2): VESSELS, SMALL, WITH GAS (GAS CARTRIDGES), without withdrawal device, not refillable	Column (2): VESSELS, SMALL, WITH GAS (GAS CARTRIDGES), without withdrawal device, not refillable	
3.2 dangerous goods table UN 2426	Column (2): AMMONIUM NITRATE, LIQUID, hot concentrated solution with a concentration greater than 80% but not more than 93%	Column (2): AMMONIUM NITRATE, LIQUID (hot concentrated solution)	
3.2 dangerous goods table UN 2908 RADIOACTIVE MATERIAL, OPTIONAL SHIPPING PIECES - EMPTY PACKAGING	Column (15): (E)	Column 15: (-)	
3.2 dangerous goods table UN 2909 RADIOACTIVE MATERIAL, EXCLUSIVE SANDPIECE -	Column (15): (E)	Column 15: (-)	

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MAKES OF NATURAL URANIUM, or OF DEPLETED URANIUM, or OF NATURAL THORIUM			
3.2 dangerous goods table UN 2910 RADIOACTIVE MATERIAL, OPTIONAL SHIPPING PIECES - LIMITED QUANTITY OF SUBSTANCE	Column (15): (E)	Column 15: (-)	
3.2 dangerous goods table UN 2911 RADIOACTIVE MATERIAL, OPTIONAL SHIPPING - INSTRUMENTED OR MADE	Column (15): (E)	Column 15: (-)	
3.2 dangerous goods table UN 3208, VG II METALLIC, WATER-REACTIVE, N.O.S.	Column (7b): E0	Column (7b): E2	
3.2 dangerous goods table UN 3209, VG II METALLIC, WATER-	Column (7b): E0	Column (7b): E2	

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REACTIVE, SELF-HEATING, N.O.S.			
3.2 dangerous goods table UN 3269 (2 entries) POLYESTER RESIN MULTI-COMPONENT SYSTEMS, liquid basic product	Column (7b): E0	Column (7b): see SP 340	
3.2 dangerous goods table UN 3359	Column (2): FUMIGATED CARGO TRANSPORT UNIT (CTU)	Column (2): FUMIGATED FREIGHT TRANSPORT UNIT	
3.2 dangerous goods table UN 3509 OLD PACKAGING, EMPTY, UNCLEANED	Column (17): VC2, AP10	Column (17): VC1, VC2, AP10	
3.2 dangerous goods table UN 3527 (2 entries) POLYESTER RESIN MULTI-COMPONENT TEN SYSTEMS, solid basic product	Column (7b): E0	Column (7b): see SP 340	
3.2 dangerous goods table UN 3536 LITHIUM BATTERIES INSTALLED IN	Column (15): - (E)	Column (15): 2 (E)	

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CARGO TRANSPORT UNITS, lithium ion batteries or lithium metal batteries			
3.2 dangerous goods table UN 3538 ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.	Column (6): 274	Column (6): 274, 396 New SP 396: Notwithstanding the requirements of 4.1.6.5, large and sturdy articles with gas cylinders attached may be carried with the valves open provided that: (a) the gas cylinders contain nitrogen of UN No. 1066, compressed gas of UN No. 1956 or air, compressed (compressed air) of UN No. 1002; b) the gas cylinders are connected to the object by pressure regulators and fixed pipes in such a way that the gas pressure (overpressure) in the object does not exceed 35 kPa (0.35 bar); c) the gas cylinders are properly secured so that they cannot move in relation to the object and are fitted with strong and pressure-resistant hoses and pipes; d) the gas cylinders, pressure regulators, piping and other components are protected from damage and impact during carriage by wooden crates or other suitable means; (e) the transport document contains the following statement: "CARRIAGE ACCORDING TO SPECIAL PROVISION 396"; f) Cargo transport units containing articles carried with open-valve cylinders containing a gas presenting a suffocation hazard are well	

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		ventilated and labeled in accordance with 5.5.3.6.	
Table B: alphabetical index			
Table B No official part of the ADR, however, part of the RID	Alphabetical list of dangerous goods	Table B with the alphabetical list will be changed accordingly if the designation in the above table of dangerous goods (Table A) changes.	
3.3 Special Provisions (SP) **- Changes / deletions –**			
3.3 SP 119 UN 2857	Regards UN 2857 REFRIGERATION MACHINES containing non-flammable, non-toxic gases or ammonia solutions (UN 2672) SP 119 includes an exemption from ADR if it contains no more than 12 kg of refrigerant.	A new remark is added: For the purposes of carriage, heat pumps may be considered as chillers	
3.3 SP 188 Last sentence UN 3090 UN 3091 UN3480 UN 3481	Concerns "small" lithium cells and batteries, UN no. 3090, 3091, 3480 and 3481 text reads: A single cell battery...	New wording: A single cell battery...	
3.3 SP 225	Regards UN 1044 FIRE EXTINGUISHERS	A new remark is inserted after paragraph a): This entry applies to portable fire extinguishers even if some	

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UN 1044		components necessary for their proper functioning (e.g. hoses and nozzles) have been temporarily removed, as long as the safety of those under pressure is compromised extinguishing agent container is not impaired and the fire extinguishers can still be identified as portable fire extinguishers.	
3.3 SP 291 UN 3358	Concerns UN 3358 REFRIGERATION MACHINES using flammable, non-toxic liquefied gas SP 291 includes an exemption from ADR if it contains no more than 12 kg of refrigerant	A new remark is added: For the purposes of carriage, heat pumps may be considered as chillers	
3.3 SP 363 UN 3528 UN 3529 UN 3530	Regards UN 3528, UN 3529, UN 3530 Special provision for engines	A new note is added: Engines or machines with a capacity of more than 450 liters but containing a quantity of liquid fuel not exceeding 60 liters may be labeled and placarded in accordance with the above provisions.	
3.3 SP 378 Concerns various gases UN numbers 1006, 1013, 1046, 1056, 1065, 1066, 1956, 2036	First sentence: …non-refillable pressure vessels…..	New wording: ....non-refillable pressure vessels...	
3.3 SP 389 regards UN 3536	First sentence reads: This entry applies only to cargo transport units that incorporate lithium ion batteries or lithium metal batteries and are designed	New wording: This entry applies only to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide	

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LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNITS, lithium ion batteries or lithium metal batteries	only to provide power external to the unit. The last sentence reads: The CTU shall be marked on two opposite sides with orange colored plates in accordance with 5.3.2.2 and placards in accordance with 5.3.1.1	power external to the cargo transport unit. Note: The formulations sound the same. The difference is that until now the freight transport unit has been in the foreground. Since this is not a package, the 1000-point rule according to 1.1.3.6 is not applicable, as it only applies to packages. The new wording "concerns lithium batteries in...." corrects this and 1.1.3.6 is therefore applicable New wording: Except as provided in 1.1.3.6, the cargo transport unit shall be marked on two opposite sides with orange-colored plates in accordance with 5.3.2.2 and placards in accordance with 5.3.1.1. Note: Unfortunately, one again failed to change the labeling regulations and adapt them to the standard labeling according to ADR (placards on containers on all 4 sides, on vehicles both sides and behind). And neutral orange-colored panels without numbers are otherwise only on the front and back of the transport unit and not on the sides	
3.3 SP 593 Frozen liquid gases as refrigerants UN 1913 UN 1951 UN 1963 UN 1970 UN 1977	Text reads: This gas, which is used for the cooling of e.g. B. medical or biological samples is used, with the exception of section 5.5.3, is not subject to the provisions of the ADR if it is in double-walled receptacles that comply with the provisions of subsection 4.1.4.1 packing instruction P 203 Regulations for open cryogenic vessels paragraph (6) is included.	New wording: This gas is subject when used for the refrigeration of goods which do not meet the criteria of any class, e.g. B. medical or biological specimens, with the exception of section 5.5.3, do not meet the requirements of ADR when presented in double-walled receptacles which meet the requirements of paragraph (6) of Packing Instruction P 203 of subsection 4.1.4.1.	

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UN 2591 UN 3136 UN 3158			
3.3 SP 642 UN 1043 FERTILIZER SOLUTION, with free ammonia	Text reads: Except as permitted under 1.1.4.2, this UN Model Regulations entry shall not be used for the carriage of fertilizer solution containing free ammonia.	New wording: This UN Model Regulations entry shall not be used for the carriage of fertilizer solution containing free ammonia unless permitted under 1.1.4.2. For the carriage of ammonia solution, see UN numbers 2073, 2672 and 3318.	
3.3 SP 644 UN 2426 AMMONIUM NITRATE, LIQUID, hot concentrated solution having a concentration greater than 80% but not more than 93%	SP 644 reads: The following conditions must be met for the carriage of this substance: 1. The pH value measured in a 10% aqueous solution of the substance to be transported is between 5 and 7, 2. The solution does not contain combustible substances in amounts greater than 0.2% or chlorine compounds in amounts where the chlorine content exceeds 0.02%.	New text: The following conditions must be met for the carriage of this substance: – The pH value measured in a 10% aqueous solution of the substance to be transported is between 5 and 7. - The solution contains no more than 93% ammonium nitrate. – The solution does not contain any flammable substances in quantities greater than 0.2% or chlorine compounds in quantities where the chlorine content exceeds 0.02%.	
3.3 SP 663 UN 3509 OLD PACKAGING, EMPTY, UNCLEANED	Paragraph under "General regulations" reads: Empty, uncleaned used packaging with residues showing a major or subsidiary hazard of Class 5.1 shall not be packed together with other empty, uncleaned used packaging or in the same container, vehicle or containers with other empty, uncleaned used packaging Bulk containers are loaded.	New text: Empty uncleaned Waste Packaging containing residues presenting a primary or subsidiary hazard of Class 5.1 shall not be bulk-loaded together with other empty uncleaned Waste Packaging containing residues presenting a hazard of another class. Empty uncleaned old residue packaging showing a primary or subsidiary hazard of Class 5.1 shall not be packed together in the same outer packaging with other empty uncleaned old residue	

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		packaging showing a hazard of another class	
3.3 **SP 674** Concerns gases of UN numbers UN 1011 BUTANE UN 1075 PETROLEUM GASES, LIQUEFIED UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. UN 1969 ISOBUTANE UN 1978 PROPANE	Text passages in paragraph a) General - In the first sentence "of welded steel cylinders" – In the second sentence "to the inner steel bottle" – In the third movement "the bottle of steel" Text passages in paragraph b) basic population "inner bottles" Text passages in paragraph d) traceability – In the first sentence "inner bottles" – In the second indent "the steel bottle" In paragraph i), in the last indent "quality system"	New formulations: - In the first sentence "of welded steel cylinder bodies". - In the second sentence "to the inner steel bottle body". – In the third sentence "of the steel bottle body". New formulation "Inner bottle bodies made of steel" New formulations - In the first sentence "Inner bottle body". – In the second indent "of the steel cylinder body" New formulation "Quality Assurance System"	
New Special Provisions (SP) in Chapter 3.3			
3.3 SP 396	SP not available	New special provision 396 Notwithstanding the requirements of 4.1.6.5, large and sturdy articles with gas	

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UN 3538 ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.		cylinders attached may be carried with the valves open provided that: (a) the gas cylinders contain nitrogen of UN No. 1066, compressed gas of UN No. 1956 or air, compressed (compressed air) of UN No. 1002; b) the gas cylinders are connected to the object by pressure regulators and fixed pipelines in such a way that the gas pressure (overpressure) in the object does not exceed 35 kPa (0.35 bar); c) the gas cylinders are properly secured so that they cannot move in relation to the object and are fitted with strong and pressure-resistant hoses and pipes; d) the gas cylinders, pressure regulators, pipes and other components are protected from damage and impact during carriage by wooden crates or other suitable means; (e) the transport document contains the following statement: "CARRIAGE ACCORDING TO SPECIAL RULE 396"; f) Cargo transport units containing articles carried with open-valve cylinders containing a gas presenting a suffocation hazard are well ventilated and labeled in accordance with 5.5.3.6.	
3.3 SP 397 UN 1002 AIR, COMPRESSED	SP not available	New special provision 397 Mixtures of nitrogen and oxygen containing not less than 19.5% and not more than 23.5% oxygen by volume may be carried under	

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(COMPRESSED AIR)		this entry if no other oxidizing gases are present. For concentrations within these limit values, a Class 5.1 subsidiary label (model 5.1, see paragraph 5.2.2.2.2) is not required.	
3.3 SP 398 UN 1012 BUTES	SP not available	New special provision 398 This entry applies to butenes, mixture, but-1-ene, cis-but-2-ene and trans-but-2-ene. For isobutene, see UN number 1055. NOTE: For additional information in the transport document, see paragraph 5.4.1.2.2 e).	
3.3 SP 676 57 UN numbers, see beginning of Table A above Concerns polymerizing substances	SP not available	New special provision For the carriage of packages containing polymerizing substances, the requirements of special provision 386 in conjunction with 7.1.7.3 and 7.1.7.4 and 5.4.1.1.15 and 5.4.1.2.3.1 need not be applied if they are used for: disposed of or transported for recycling provided the following provisions are observed: a) prior to loading, a test has shown that the outside temperature of the package and the ambient temperature do not differ significantly; (b) the carriage takes place within a maximum period of 24 hours after this check; c) the packages are protected from direct sunlight during carriage as well as from the	

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		action of other heat sources (e.g. additional cargoes which are carried above ambient temperature); d) the ambient temperatures during carriage are less than 45 °C; e) Vehicles and containers are adequately ventilated; (f) the substances are packed in packages with a capacity not exceeding 1000 litres. When assessing substances for carriage under the conditions of this special provision, additional measures to prevent hazardous polymerization may be considered, e.g. B. the addition of inhibitors.	
3.4 Limited Quantities			
3.4.11 use of packaging	There are two indent lists with conditions	The dashes are replaced by the letters a) and b).	
3.5 Excepted Quantities			
3.5.4.3 Use of outer packaging	There are two indent lists with conditions	The dashes are replaced by the letters a) and b).	
Chapter 4.1 - Use of dangerous goods containments **- Changes to packaging instructions –**			

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4.1.1.10 Pressure testing of packaging	In paragraph a) it says: "a maximum degree of filling"	New wording: "a highest degree of filling"	
4.1.1.14 Dustproof packaging	Packaging, including IBCs, for powdery or granular substances must be dustproof or have an inner bag	Packaging, including intermediate bulk containers (IBC), for powdery or granular substances must be dustproof or have an inner lining	
4.1.1.15 Duration of use of plastic packaging	Plastic barrels, canisters and IBCs generally have a maximum service life of 5 years.	The following remark is added: For combination IBCs, the period of use refers to the date of manufacture of the inner container	
4.1.1.20.2 salvage pressure vessels .	The maximum permissible size of the pressure vessel used is limited to a water capacity of 1000 liters	The capacity is increased to 3000 liters	
4.1.1.21.6 assimilation list	UN 1169 and UN 1197 included in the list	UN 1169 is deleted UN 1197 is now called EXTRACTS, LIQUID, for flavor or aroma see also chapter 3.2 above	
4.1.3.3 Quantity limits for packaging	It describes the limitations on packaging in terms of capacity.	A new paragraph is added at the end: If packaging that does not have to comply with the provisions of subsection 4.1.1.3 (e.g. crates, pallets) is permitted in a packing instruction or in the special provisions listed in Chapter 3.2 Table A , these packagings are not subject to the mass or volume limitations generally	

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		applicable to packagings that comply with the provisions of Chapter 6.1, unless otherwise specified in the relevant packing instruction or special provision. Note: A great simplification for the use of packaging that has not been type-tested. According to Chapter 6.1, the limit would otherwise be 450 liters or 400 kg net mass.	
P003 Special provision PP32 P004 P005 P006 P130 Special provision PP67 P144 Special provision PP77 P408 P801 P903 (2), (4), (5) P905 second Table line after the heading line, after the first subparagraph P906 (2) b) and additional requirement	No regulation regarding the maximum net mass of the packaging that does not require a type test.	New text for all packing instructions given in the left column: The approved packaging may exceed a net mass of 400 kg (see subsection 4.1.3.3)	

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P907 P909 (3) and (4) P910 (3)			
P137 Special provision PP70	Text reads: For UN Nos. 0059, 0439, 0440 and 0441, where the shaped charges are individually wrapped, the conical concavities shall face downwards and the package shall be marked in accordance with 5.2.1.10.1. If the shaped charges are packed in pairs, the conical cavities of the shaped charges must face each other in order to keep the shaped charge effect as low as possible in the event of an accidental release.	New wording: For UN Nos. 0059, 0439, 0440 and 0441, if the shaped charges are individually wrapped, the conical concavities shall face downwards and the package shall be marked as shown in Figure 5.2.1.10.1.1 or 5.2.1.10.1.2. If the shaped charges are packed in pairs, the conical cavities of the shaped charges must face each other in order to keep the shaped charge effect as low as possible in the event of an unintentional release.	
P200 Packing Instruction for Gases Paragraph (10) SV for packaging "d" Paragraph (10) SV for packaging "z"	maximum allowable degree of filling Refillable pressure vessels quality system …steel pressure vessels…	Numerous changes in three terms the highest degree of filling Refillable pressure vessels quality assurance system Numerous other detail changes Here it is added: …or composite pressure vessels with steel liners Here is added Mixtures of fluorine and nitrogen with a fluorine concentration of less than 35% by volume may be filled in pressure receptacles to a maximum allowable working pressure at which the fluorine partial pressure does not exceed 3.1 MPa (31 bar) (absolute).	

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		Operating pressure (bar)< 31 / xf − 1, where xf = fluorine concentration in volume %/100. Mixtures of fluorine and inert gases having a fluorine concentration of less than 35% by volume may be charged into pressure receptacles to a maximum allowable working pressure at which the fluorine partial pressure does not exceed 3.1 MPa (31 bar) (absolute), where at the Calculation of the partial pressure also takes into account the nitrogen equivalence coefficient according to the ISO 10156:2017 standard. Operating pressure (bar)< 31 / xf (xf+Kk × xk)−1, in which xf = fluorine concentration in volume %/100 Kk = equivalence coefficient of an inert gas with respect to nitrogen (nitrogen equivalence coefficient) xk = inert gas concentration in % by volume/100	
Paragraph (12) Item 1.1	"IS offices (in-house testing services)	However, the operating pressure for mixtures of fluorine and inert gases must not exceed 20 MPa (200 bar). The minimum test pressure of pressure receptacles for mixtures of fluorine and inert gases is 1.5 times the working pressure or 20 MPa (200 bar), whichever is greater. "IS (In-House Audit Services)". "Xb and IS" insert: "EN ISO 14245:2021	

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and Paragraph (13) Item 1.1 paragraph (12) Point 3.4 paragraph (12) Point 3.4 paragraph (12) Point 3.4 Paragraph (13) Item 2.4 Paragraph (13) Item 2.4 Table 2 Liquefied and dissolved gases	"IS (In-House Audit Services)". – "Xb and IS offices" EN ISO 14245:2019 EN ISO 15995:2019 EN14912:2005 EN ISO 22434:2011 EN ISO 11114-1:2012 + A1:2017 UN 1008 BORONTRIFLUORIDE LC50 = 387 UN 1012 The table says: BUTENE, MIXTURE or BUT-1-EN or cis-BUT-2-EN or trans-BUT-2-EN UN 2196 TUNGSTEN HEXAFLUORIDE LC50 = 160 Nothing is ticked for large cylinders and pressure drums Special provisions for packaging: a, k, ra UN 2198 PHOSPHORPHORPENTAFLUORIDE LC50 = 190 Nothing is ticked for large cylinders and pressure drums	EN ISO 15995:2019 or EN ISO 15995:2021 EN14912:[2022] ISO 22434:[2022] EN ISO 11114-1:2020 UN 1008 BORONTRIFLUORIDE LC50 = 864 UN 1012 BUTENE The following is entered in the table: 1012 BUTEN (butenes, mixture) or 1012 BUTENE (1-butene) or 1012 BUTENE (cis-but-2-ene) or 1012 BUTENE (trans-But-2-ene)" UN 2196 TUNGSTEN HEXAFLUORIDE LC50 = 218 "X" is entered for large cylinders and pressure drums Special rules for packaging: ah, ra UN 2198 PHOSPHORUS PENTAFLUORIDE LC50 = 261 "X" is entered for large cylinders and pressure drums	

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	Special provisions for packaging: k, k	Special packing rules: no entry, k deleted (twice)	
Continuation P200 Table 3: Substances not included in Class 2	UN 1052 HYDROGEN FLUORIDE, ANHYDROUS LC50 = 966	UN 1052 HYDROGEN FLUORIDE, ANHYDROUS LC50 = 1307	
P205 Paragraph (5) Paragraphs (6) and (7) paragraph (7)	ISO 16111:2008 (Portable gas storage systems - Hydrogen absorbed in reversible metal hydride) ISO 16111:2008 No reference to 6.2.2.4	ISO 16111:2008 or ISO 16111:2018 (Portable gas storage vessels - Hydrogen reversibly absorbed in metal hydrides) ISO 16111:2008 or ISO 16111:2018 New text: To determine which standard is applicable at the time of periodic inspection, see 6.2.2.4	
P206 Special provision for packaging PP 89	Text reads: non-refillable bottles	New formulation non-refillable bottles	
P208 paragraph (1) Paragraph (11)	ISO 11513:2011 or ISO 9809-1:2010" Appendix A of the standard ISO 11513:2011	ISO 11513:2011, ISO 11513:2019, ISO 9809-1:2010 or ISO 9809-1:2019 Annex A of the ISO 11513:2011 standard (applicable until December 31, 2024) or Annex A of the ISO 11513:2019 standard	

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P409 paragraph (1)	….Lining….:	New inner lining formulation	
P410	Under combination packaging / glass jar it says: in foam or rigid plastic packaging (6PH1 or 6PH2)	New text: in a foam or rigid plastic (6PH1 or 6PH2) outer packaging	
P620 Additional Rule 2 c)	Second sentence reads: Plastic primary receptacles that are resistant to very low temperatures shall be used	The second sentence now reads: Plastic primary receptacles that are resistant to very low temperatures shall be used.	
P621 paragraph 1	Text reads: Barrels (1A2, 1B2, 1N2, 1H2, 1D, 1G) Canister (3A2, 3B2, 3H2)	New text: Barrels (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G) Canisters (3A1, 3A2, 3B1, 3B2, 3H1, 3H2) Note: This means that barrels and canisters with non-removable lids are now also permitted	
P800 Paragraph (3) c)	Text reads: Either the inner packagings or the outer packagings shall have fully leakproof, puncture-resistant and contents-impermeable liners or sacks which completely enclose the contents and prevent escape from the package in any position or orientation	Text is now: Either the inner packagings or the outer packagings shall have strong, leakproof, puncture-resistant and contents-impermeable inner liners or sacks which completely enclose the contents and prevent escape from the package in any position or orientation	
P903 paragraph (2)	Text reads: In addition, for cells or batteries with a gross mass of	Text is now: In addition, for a cell or battery with a gross mass of at least	

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introductory sentence According to paragraph (5)	at least 12 kg with a strong, impact-resistant housing and for assemblies of such cells or batteries...	12 kg with a tough, impact-resistant housing... New remark is introduced: The packaging permitted under paragraphs (2), (4) and (5) may exceed a net mass of 400 kg (see subsection 4.1.3.3)."	
P911 Critically defective lithium batteries	There may only ever be 1 battery per package	New regulation in the new paragraph i): In the case of multiple batteries and multiple equipment containing batteries, additional requirements such as the highest number of batteries and equipment, the highest total energy content of the batteries, and the arrangement within the package, including partitions and protective devices, shall apply of the parts, are taken into account.	
IBC02 Special provision for packaging B 15 RID and ADR-specific special provision for packaging BB 4	previous text Combination IBC with rigid plastic inner container UN 1169 listed	New wording: rigid plastic liners of combination nations IBCs UN 1169 is deleted (see chapter 3.2 table of dangerous goods above)	

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IBC07 Additional provision 2 Special provision for packaging B 20 for UN 3550	It says here: Linings Unavailable	New wording: inner linings New special provision: B20 UN 3550 may be carried in flexible IBCs (13H3 or 13H4) with dustproof inner liners to prevent any leakage of dust during carriage	
IBC08 Special provision for packaging B3 and B4 and BB3	It says here: linings	New wording: inner linings	
IBC100 Special packing provision B 3	It says here: linings	New wording: inner linings	
IBC520 set 3	Previous text: For compositions that are not listed, only IBCs approved by the competent authority may be used (see paragraph 4.1.7.2.2).	New text: The preparations not listed in 2.2.41.4 or 2.2.52.4 but listed below may only be used in IBCs approved by the competent authority (see 4.1.7.2.2).	
LP02 Special packing provision LL1	It says here: linings	New wording: inner linings	
LP906 set 3	Previous text: For a single battery and a single equipment containing batteries:….	New text: For batteries and equipment containing batteries…	

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paragraph (2) 2nd subparagraph	Previous text: A verification report must be made available upon request. The verification report must contain at least the name, number, mass, type and energy content of the battery as well as the identification of the large packaging and the test data according to the verification method specified by the competent authority.	Note: This means that several critically defective batteries can now be placed in bulk packaging. Unfortunately, this does not apply to the other bulk packaging for lithium batteries. (LP903, LP904, LP905) New text: A verification report must be provided upon request. The verification report shall include at least the name of the batteries, their type as defined in Section 38.3.2.3 of the Tests and Criteria Manual, the maximum number of batteries, the total mass of the batteries, the total ener The energy content of the batteries, the identification of the large packaging and the test data must be listed according to the verification method specified by the competent authority. A compilation of specific instructions describing the manner of use of the package must also be part of the inspection report.	
Continued LP906 Table grade a)	Previously, only one battery per bulk pack was permitted	New paragraph (4) is added: The specific instructions for the use of the package are to be made available to the sender by the packaging manufacturers and subsequent distributors. You must at least identify the batteries and equipment that may be contained in the package, the maximum number of batteries contained in the package and the maximum total energy content of the batteries, and the location within the package, including of the partitions and guards used during performance verification.	

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		New paragraph i) is added here: In the case of multiple batteries and multiple equipment containing batteries, additional requirements such as the highest number of batteries and equipment, the highest total energy content of the batteries, and the arrangement within the package, including partitions and protective devices, shall apply of the parts, are taken into account	
4.1.6 **Special packing requirements for gases**			
4.1.6.4 sentence 1	Previous text: refillable pressure vessels	New wording: refillable pressure vessels	
4.1.6.6 Sentence 1 Sentence 2 new	Sentence 1 reads: The pressure receptacles and open cryogenic receptacles shall be filled in accordance with the working pressures, fill levels and regulations specified in the packing instruction applicable to the substance to be filled	New text: The pressure receptacles and open cryogenic receptacles shall be filled in accordance with the working pressures, fill levels and regulations specified in the packing instruction applicable to the substance to be filled, taking into account the lowest pressure rating of all components New 2nd sentence is inserted: However, service equipment that has a lower pressure rating than other components must comply with the provisions of Section 6.2.1.3.1. The last sentence is deleted.	

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Last sentence	Cylinder bundles must not be filled to a pressure that exceeds the lowest working pressure of any cylinder in the bundle.		
4.1.6.8 paragraph b) paragraph c)	Text of sentence 1 reads the shut-off valves are protected by protective caps the shut-off valves are protected by a reinforcing rim or by other protections	New text: the shut-off valves are protected by protective caps or protective baskets the shut-off valves are protected by a reinforced rim or by permanent protective fasteners	
4.1.6.9	Previous text: non-refillable pressure vessels	New wording: non-refillable pressure vessels	
4.1.6.10	Previous texts: refillable pressure vessels cryogenic tank P205 or P206	New formulations: refillable pressure vessels sealed cryogenic containers P205, P206 or P208	
4.1.6.15 Reference to noun	Introductory text reads: The ISO standards listed below shall apply to UN pressure receptacles. For other pressure receptacles, the requirements of Section 4.1.6 are deemed to be met when the applicable standards below are applied:	The subsection will be revised and the standard references updated New introductory text For UN pressure receptacles, the ISO and EN ISO standards listed in Table 1 apply, with the exception of the standards EN ISO 14245 and EN ISO 15995. For	

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		information on which standard is to be used at the time the equipment is manufactured, see subsection 6.2.2.3. For other pressure receptacles, the provisions of Section 4.1.6 are deemed to be met when the applicable standards in Table 4.1.6.15.1 are applied. For information on which standards to use for the manufacture of self-protected valves, see subsection 6.2.4.1. See Table 4.1.6.15.2 for information on the applicability of standards for the manufacture of valve protection caps and valve baskets. For reasons of space, the rest of the text is not printed here.	
4.1.9 **Special provisions for the packaging of radioactive substances**			
4.1.9.1.4	Previous text: Unless otherwise specified in section 7.5.11 special provision CV 33, the level of non-adherent contamination on the outside and inside of an overpack, container, tank, IBC or vehicle do not exceed the limit values listed in paragraph 4.1.9.1.2. This provision does not apply to the inner surfaces of containers used as packaging, whether loaded or empty.	Changed text: Unless otherwise specified in section 7.5.11 special provision CV 33, the level of non-fixed contamination on the outside and inside of an overpack, container or vehicle shall not exceed the limits set out in section 4.1.9.1.2 exceed. This requirement does not apply to the internal surfaces of containers used as packaging, whether loaded or empty.	
Chapter 4.7 **Use of Mobile Units to Manufacture Explosive Substances or Explosive Articles (MEMU)**			

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4.7 MEMU	Comment 2 on the heading reads: For the regulations for construction, equipment, type approval, testing and marking see chapters 6.7, 6.8, 6.9, 6.11 and 6.12	The new chapter 6.13 is added here: For the regulations for construction, equipment, type approval, testing and marking, see chapters 6.7, 6.8, 6.9, 6.11, 6.12 and 6.13	
Part 5 – Shipping regulations			
5.1.3 and 5.1.3.1 Uncleaned enclosures	Text reads: for goods in bulk	Changed text: for carriage in bulk	
5.1.5.1.3 Carriage permit by special agreement	Note on the title reads: Regulations may be approved by the competent authority according to which a shipment which does not comply with all applicable regulations of the ADR may be transported with a special arrangement (see Section 1.7.4)	New text: A Competent Authority may approve regulations under which shipments which do not comply with all applicable requirements of ADR may be carried under a special arrangement (see Section 1.7.4)	
5.1.5.2.1 Admission and approval certificates	Last sentence reads: The certificates of approval and the applications for approval must comply with the provisions of Section 6.4.23	New text: The approval/approval certificates and the applications for approval/approval must comply with the provisions of Section 6.4.23	
5.2.1.6 Marking of packages for Class 2 gases The footnote states: Instead of the technical name, the use of one of the	Text reads on 2 Place refillable vessels No entry for UN 1012 included	New formulation refillable vessels The following new entry is added in the footnote:	

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following names is permitted:		"– for UN 1012 butene: but-1-ene, cis-but-2-ene, trans-but-2-ene, butenes, mixture."	
5.2.1.9.2 Label for lithium batteries according to SV 188	The UN number and a telephone number must be specified in the license plate 	A telephone number is no longer required; until December 31, 2026, however, license plates with telephone numbers may still be used (see transitional provision 1.6.1.49) 	
5.2.1.10.1 alignment arrows	A dash bullet (4 points) identifies the cases where alignment arrows are required 3rd bullet point: - Cryogenic vessels for the carriage of refrigerated liquefied gases	The dashes are replaced by the letters (a) to (d). Note: That makes referencing easier New paragraph (c): Sealed or open cryogenic receptacles for the carriage of refrigerated liquefied gases	
5.3.2.1.5 Orange panels on carrier vehicles	Remark reads: This paragraph need not be applied to the marking of sheeted vehicles and sheeted vehicles with orange panels carrying tanks with a maximum capacity of 3000 liters	New text: This paragraph need not be applied to vehicles carrying bulk containers, tanks and MEGCs with a maximum capacity of 3000 litres Note: This means an extension of the exemption to bulk carriage and to MEGC	

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5.3.2.1.7 Uncleaned empty enclosures	Text reads: for goods in bulk	Changed text: for carriage in bulk	
5.4.1.1.1 Basic information in the transport document	Text at letter k) reads: for carriage involving passage through tunnels with restrictions for the passage of vehicles carrying dangerous goods, the tunnel restriction code in capital letters and in brackets or the notation "(-)", as specified in Chapter 3.2 Table A column 15 is indicated.	The text is supplemented by a reference to special agreements (class 7) k) for carriage involving passage through tunnels with restrictions for the passage of vehicles carrying dangerous goods, the tunnel restriction code in capital letters and in brackets or the endorsement "(-)" given in Column 15 of Table A of Chapter 3.2, or the details specified in a special agreement in accordance with subsection 1.7.4.2.	
5.4.1.1.3 Entries in the transport document for waste	Existing text describes that the word "WASTE" must be given before the official designation and the option after 2.1.3.5.5	The existing text becomes 5.4.1.1.3.1 Then a new paragraph 5.4.1.1.3.2 is added: If there is no possibility at the place of loading to measure the exact quantity of waste, in the following cases the quantity according to paragraph 5.4.1.1.1 f) under be estimated under the following conditions: a) for packaging, a list of packaging stating the type and nominal volume is attached to the transport document; b) for containers, the estimation is based on their nominal volume and other available information (e.g. type of waste, average density, degree of filling); c) for vacuum-operated waste tanks, the estimate is justified	

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		(e.g. by an estimate provided by the shipper or by the vehicle's equipment). Such an estimate of the quantity is not allowed for: – exemptions for which a precise quantity is relevant (e.g. subsection 1.1.3.6); - waste containing the substances mentioned in paragraph 2.1.3.5.3 or substances of class 4.3; – Tanks other than vacuum-operated waste tanks. The transport document shall state: ESTIMATED QUANTITY IN ACCORDANCE WITH 5.4.1.1.3.2	
5.4.1.1.5 Information in the transport document for salvage packaging	Text reads: When dangerous goods are carried in a salvage packaging, including a large salvage packaging, or in a salvage pressure receptacle, the phrase “Salvage Packaging” or “Salvage Pressure Receptacle” shall be added after the description of the goods in the transport document	Modified text: When dangerous goods are carried in a salvage packaging as specified in 4.1.1.19, including large salvage packagings, packagings or larger packagings which, by their type and performance requirements, are suitable for use as salvage packaging, is in the transport document after the description of the goods, add the phrase "RECOVERY PACKAGING". When dangerous goods are carried in a salvage pressure receptacle in accordance with subsection 4.1.1.20, the words "Salvage PRESSURE RECEPTACLE" shall be added in the transport document after the description of the goods	
5.4.1.1.15 Information in the transport document for temperature-controlled substances	headline reads: Special provisions for the carriage of substances stabilized by temperature control	New headline: Special provisions for the carriage of stabilized and temperature-controlled substances	

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	Text after the heading reads: When the phrase "STABILIZED" is part of the proper shipping name (see also 3.1.2.6) and when stabilization is by temperature control, the control temperature and the emergency temperature (see section 7.1. 7) to be indicated in the transport document as follows: CONTROL TEMPERATURE: .. °C EMERGENCY TEMPERATURE: ... °C	New text: Unless the phrase "STABILIZED" is already part of the proper shipping name, the proper shipping shipping name is replaced by that phrase when stabilization is employed, or by the phrase "TEMPERATURE-CONTROLLED" when stabilization is by temperature control or a combination of chemical stabilization and temperature control takes place (see subsection 3.1.2.6). When the phrase "TEMPERATURE CONTROLLED" is part of the proper shipping name (see also 3.1.2.6), the control temperature and the emergency temperature (see 7.1.7) shall be indicated in the transport document as follows CONTROL TEMPERATURE: ... °C EMERGENCY TEMPERATURE: ... °C	
5.4.1.1.16 Required information according to chapter 3.3 special provision 640	Text reads: If required by Chapter 3.3, special provision 640, the transport document must state "SPECIAL PROVISION 640X", where "X" is the capital letter that appears in Chapter 3.2, Table A, Column 6 after the reference to special provision 640.	The paragraph is deleted. Note: The regulation is newly included in paragraph 5.4.1.1.21, see next point	
5.4.1.1.21 Entries in the transport document for special regulations	Special provisions for the carriage of UN 3528, UN 3529 and UN 3530 For the transport of UN 3528, UN 3529 and UN 3530, the	New text that basically includes all such cases. Additional information when applying special provisions	

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Previous text only applied to UN numbers 3528, 3529 and 3530:	transport document must also be noted, if this is required in accordance with Chapter 3.3, Special Provision 363: "TRANSPORT ACCORDING TO SPECIAL PROVISION 363	If additional information is required according to a special provision in Chapter 3.3, this additional information must be included in the transport document	
5.4.1.1.23 Substances in a molten state	Unavailable	New paragraph is added: Special provisions for the carriage of substances in the molten state When a substance, which is a solid as defined in 1.2.1, is offered for carriage in the molten state, the specification “MOLTEN” shall be added to the proper shipping name, unless this is already part of the proper shipping name (see sub-section 3.1.2.5).	
5.4.1.1.24 US DOT gas cylinders	Unavailable	New paragraph is added: Special Provisions for Refillable Pressure Receptacles Approved by the United States Department of Transportation In the case of carriage in accordance with subsection 1.1.4.7, the following must be noted in the transport document: "CARRIAGE ACCORDING TO PARAGRAPH 1.1.4.7.1" or "CARRIAGE PURSUANT TO 1.1.4.7.2" Note: 1.1.4.7.1 regulates the import of gases, 1.1.4.7.2 the export of gases and uncleaned empty pressure vessels	

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5.4.1.2.2 Additional regulations for class 2	Bullet points a) to d) listed	A new paragraph e) is added with the following content: When UN number 1012 is transported, the transport document must contain the name of the specific gas transported in brackets after the official shipping name (see Chapter 3.3, special provision 398).	
5.4.2 Multimodal sea transport Second subparagraph, first sentence comment	First subparagraph reads: If a carriage of dangerous goods in containers is followed by sea carriage, a container/vehicle packing certificate according to Section 5.4.2 of the IMDG Code8)9) must be enclosed with the transport document Previous text: The tasks of the transport document required under Section 5.4.1 and the above-mentioned container/vehicle packing certificate can be fulfilled by a single document; otherwise these documents must be attached. Text reads: For portable tanks, tank-containers and MEGCs, the container/vehicle packing certificate is not required	New text: If carriage of dangerous goods in containers is followed by sea carriage, those responsible for packing the container must provide the sea carrier with a container/vehicle packing certificate in accordance with Section 5.4.2 of the IMDG Code8)9). New text: The tasks of the transport document required under section 5.4.1 and the container/vehicle pack certificate mentioned above can be fulfilled by a single document (see e.g. section 5.4.5). The remark is deleted	

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Third subparagraph	Text reads: If carriage of dangerous goods in vehicles is followed by sea carriage, the transport document may be accompanied by a container/vehicle packing certificate in accordance with Section 5.4.2 of the IMDG Code8)9).	New text: If carriage of dangerous goods in vehicles is followed by sea carriage, the transport document may also include a container/vehicle packing certificate in accordance with section 5.4.2 of the IMDG Code8)9). Note: The packing certificate is therefore no longer an accompanying document (see also 8.1.2)	
5.5 special provisions	The term (CTU) is added in brackets to the goods transport units	The addition (CTU) is deleted everywhere Note: CTU stands for Cargo Transport Unit	
5.5.2.4.1 Entries in the transport document	The paragraph contains three bullet points	The dashes are replaced by the letters a), b) and c).	
Part 6 - Construction and Testing Requirements for Packaging Intermediate Bulk Containers (IBC), Large packaging, Tanks and bulk container NEW CHAPTERS compared to ADR 2021			
Part 7 - Provisions for carriage, loading and unloading and handling			

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7.1 General regulations	Chapter 7.1 has the following heading: General regulations and special regulations for temperature control	New headline: General Rules	
7.1.4 Requirements for large containers	The introductory sentence reads: Large containers may only be used for transport if they are structurally suitable. "Suitable from a structural point of view" means that...	Section 7.1.4 is deleted Note d. V.: The new criteria are now listed in 7.5.1.2, the 19 mm regulation is no longer applicable here, as are some detailed regulations that were previously in 7.1.4.	
7.1.7.3.2 Temperature controlled dangerous goods	Text reads: These regulations also apply to the carriage of substances for which: a) the proper shipping name contains the phrase “STABILIZED” in column 2 of Table A of Chapter 3.2 or as specified in sub-section 3.1.2.6 and…	New text: These regulations also apply to the carriage of substances for which: a) The proper shipping name includes the phrase "TEMPERATURE CONTROLLED" in column 2 of Table A of Chapter 3.2 or as specified in 3.1.2.6 and...	
7.1.7.4.5 Appropriate methods to avoid exceeding the control temperature	Previous passages: paragraph a) Thermal insulation provided the initial temperature of the substance(s) to be carried is sufficiently below the control temperature Paragraph b) Thermal insulation with cold storage, provided:	New texts paragraph a) a vehicle, container, packaging or overpack with thermal insulation provided the initial temperature of the substance(s) to be carried is sufficiently below the control temperature Paragraph b): a vehicle, a container, packaging or outer packaging with heat insulation and cold storage, provided... Paragraph c)	

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	paragraph c) Thermal insulation and a single refrigerator provided	a vehicle or container with thermal insulation and a single refrigerating machine, provided that ...	
	paragraph d) Thermal insulation and a combination of a chiller and a cold store, provided	paragraph d) a vehicle or container with thermal insulation and a combination of a refrigeration machine and a cold accumulator, provided that ...	
continuation 7.1.7.4.5	Heels) Thermal insulation and dual chillers, provided	Heels) a vehicle or container with thermal insulation and double refrigeration machines, provided that ..	
7.1.7.4.7 Reference to chapter 9.6	Text reads:	New text: Insulated, cold storage or refrigerated containers used for the carriage of temperature-controlled substances must comply with the following requirements: a) The heat transfer coefficient of a container with thermal insulation must not exceed 0.4 W/m2K; b) the coolant shall be non-flammable, and, c) if the containers are provided with ventilation slots or flaps, precautions shall be taken to ensure that cooling through the ventilation slots or flaps is not impaired. If the substances have to be transported in vehicles with thermal insulation, cold storage or refrigeration/cooling machines, these vehicles	

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		must comply with the provisions of Chapter 9.6	
	If the substances have to be transported in vehicles or containers with thermal insulation, cold storage or refrigeration/cooling machines, these vehicles or containers must comply with the provisions of Chapter 9.6.		
7.2.4 Special Provisions for the Carriage of Packages V6	Text of the V6 reads: Flexible bulk containers (IBCs) must be loaded into covered vehicles or closed containers, into sheeted vehicles or sheeted containers. The tarpaulin must be made of impermeable and non-combustible material.	Special provision V6 is deleted Note: The special provision V6 was no longer assigned to an entry in the dangerous goods table	
7.2.4 Special Provisions for the Carriage of Packages V15	Unavailable	New special provision V15 IBCs are to be transported in covered vehicles or in closed containers. Note: The new V 15 applies to the new UN number 3550 (see above and overview on the last page)	
7.3.1.13 Testing of containments prior to use for bulk carriage	Checklist contains checkpoints a) to i) a) bulges, cracks or breaks in structural members or structural members which may affect the integrity of the bulk container, container or vehicle body; b) more than one joint or one improper joint (e.g. overlapping joint) in top or bottom cross members or door beams;	New text: a) bulges, cracks or breaks in structural or structural members or damage to service equipment or operational equipment affecting the integrity of the bulk container, container or vehicle body; b) any torsion in the structure or any damage to lifting equipment or to the	

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	c) more than two joints in one of the upper or lower side rails; d) a junction in a door sill or in a corner post; e) Door hinges and fittings that are jammed, twisted, broken, missing or otherwise non-functional. f) leaking seals and closures. g) any distortion in the structure of a bulk container or container severe enough to prevent proper positioning of the handling equipment, bottoming and securing on chassis or vehicles. h) any damage to lifting equipment or to the pick-up points for the handling equipment; i) any damage to the operating equipment or operational equipment	attachment points for the handling equipment that is severe enough to prevent the handling equipment from being properly positioned, set down and secured on frames or wagons or chassis or vehicles, or to prevent insertion into ship's cells, and where applicable c) Door hinges, door seals and hardware that are jammed, twisted, broken, missing or otherwise non-functional."	
7.4.1 Transports in tanks	Text of sentence 1 reads: Dangerous goods may only be carried in tanks if a code is given in column 10 or 12 of Chapter 3.2 Table A or if a competent authority has issued an approval in accordance with sub-section 6.7.1.3.	New text: Dangerous goods may only be transported in tanks if in Chapter 3.2 Table A in column 10 there is an instruction for portable tanks or in column 12 a tank code is given or a competent authority has issued an approval in accordance with subsection 6.7. 1.3 has granted.	
7.5.1.2 Vehicle checks before loading	Last sentence reads: Before loading, the vehicle or container must be inspected internally and externally to ensure that there is no damage which could affect the integrity of the vehicle or	New text Before loading, the vehicle or container must be inspected internally and externally to ensure that there is no damage likely to affect the integrity of the vehicle or	

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	container or the packages to be loaded.	container or the cargo to be loaded. 2 new subparagraphs are added: The CTU shall be inspected to ensure that it is structurally sound, free of any residues that may be incompatible with the cargo and that the floor, walls and ceiling, if any, are internally free of bumps or damage which could affect the cargo inside, and that large containers are free from damage, if required, which would affect the weatherability of the container. "Suitable from a structural point of view" means that the components of the goods transport unit do not show any major damage. Components of multimodal usable goods transport units are e.g. B. upper and lower side longitudinal members, upper and lower cross members, corner posts, corner fittings and, in the case of large containers, door sills, door supports and floor cross members. Major damage is: a) bulges, cracks or breaks in structural or structural elements and damage to service equipment or operational equipment affecting the integrity of the CTU; b) any torsion in the structure or any damage to lifting equipment or to the	

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		attachment points for the handling equipment that is severe enough to prevent the handling equipment from being properly positioned, set down and secured on frames or wagons or chassis or vehicles, or to prevent insertion into ship's cells, and where applicable c) Door hinges, door seals and fittings that are jammed, twisted, broken, missing or otherwise non-functional Note: This is the replacement for the previous regulation in 7.1.4 (see above); this eliminates the 19 mm limit, among other things	
Part 8 - Requirements for vehicle crews, equipment, the operation of the vehicles and the documentation			
8.1.2.1 accompanying documents	Container/Vehicle Packing Certificate is an accompanying document in advance to the seaport The text up to paragraph a) reads: In addition to the papers required by other regulations, the following papers must be carried in the transport unit: a) the transport documents stipulated in Section 5.4.1 for all transported dangerous goods and, if applicable, the container/vehicle packing certificate in accordance with Section 5.4.2	The certificate no longer has to be carried during the pre-race; the text passage in paragraph a) has been deleted. New text: In addition to the documents required by other regulations, the following documents must be carried in the transport unit: a) the transport documents required under section 5.4.1 for all transported dangerous goods	
8.5 special regulations	S1 is a special provision for the carriage of goods in class 1 Paragraph (6) of the S1 contains specifications for monitoring	UN numbers 0512 and 0513 are added to the list in paragraph (6).	

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Part 9 - Regulations for the construction and registration of vehicles			
9.1.3.1 Approval certificate	In the footnote there is a link to a guide on how to fill out the registration certificate (http://www.unece.org/trans/danger/danger.html)	The link will be updated (https://unece.org/guidelines-telematics-application-standards-construction-and-ap-proval-vehicles-calculation-risks)	
9.1.3.3 Description of the registration certificate	The 4th subparagraph reads: The approval certificate for a vehicle EX/III for the carriage of explosive substances in tanks in accordance with the provisions of Section 9.7.9 must contain the following comment under point 11: "Vehicle in accordance with Section 9.7.9 of the ADR for the carriage of explosive substances in tanks"	New text: The registration certificate for a vehicle FL or EX/III according to the provisions of section 9.7.9 must contain the following comment under point 11: "Vehicle according to section 9.7.9 of the ADR"	
9.1.3.4 Validity of the registration certificate	The last subparagraph reads: However, for tanks for which a periodic technical inspection is prescribed, these regulations do not mean that leak tests, hydraulic pressure tests or internal inspections of the tanks must be carried out at shorter intervals than those specified in Chapters 6.8 and 6.9 specified must be carried out.	New text: However, these regulations do not mean that the tank inspections have to be carried out at shorter intervals than those stipulated in Chapter 6.8, 6.10 or 6.13	
9.7 Supplementary provisions for tank-vehicles (fixed tanks), battery-vehicles and complete or completed vehicles for the carriage of dangerous goods in	9.7.2.4 refers to chapter 6.9 9.7.4 refers to subsection 6.9.1.2 and paragraph 6.9.2.14.3 9.7.5.1 reads:	The reference now refers to Chapter 6.9 or 6.13 The reference now refers to subsection 6.13.1.2 and paragraph 6.13.2.14.3 New text reads:	

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demountable tanks with a capacity of more than 1 m3 or in tank-containers, portable tanks or MEGCs with a Capacity of more than 3 m3 (vehicles EX/III, FL and AT)	The overall width of the footprint on the ground (distance between the outer points of contact of the right and left tires of the same axle with the ground) must be at least 90% of the height of the center of gravity of the loaded tanker stuff. In the case of articulated vehicles, the axle load of the semi-trailer must not exceed 60% of the nominal total mass of the loaded articulated vehicle	The overall width of the ground contact area (distance between the outer points of contact of the right and left tires of the same axle with the ground) of the axle with the widest width shall be at least 90% of the height of the center of gravity of the loaded tanker . In the case of articulated vehicles, the axle load of the semi-trailer must not exceed 60% of the nominal total mass of the loaded articulated vehicle	
9.7.9 Additional safety regulations for certain vehicles	headline reads: Additional safety regulations for vehicles EX/III	New headline: Additional safety regulations for vehicles FL and EX/III	
9.7.9.1 firefighting	Previous text: Vehicles EX/III must be equipped with automatic fire extinguishing systems for the engine compartment	New text: The following vehicles must be equipped with an automatic fire suppression system in the space where the internal combustion engine that powers the vehicle is located: a) FL vehicles for the carriage of liquefied and compressed flammable gases with a classification code containing the letter F; b) FL vehicles for the transport of flammable liquids of packing group I or II and c) Vehicles EX/III Note: See also transitional provision 1.6.5.24	
9.7.9.2	Previous text:	New text:	

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Heat protection in case of tire fire	The protection of the load from tire burns must be guaranteed by metal heat shields	The following vehicles must be equipped with a heat shield capable of containing the spread of fire from all wheels: a) FL vehicles for the carriage of liquefied and compressed flammable gases with a classification code containing the letter F; b) FL vehicles for the transport of flammable liquids of packing group I or II and c) Vehicles EX/III. Rem. The aim is, e.g. B. by heat shields or other equivalent systems, the spread of a fire to the cargo either a) as a result of direct spread from the wheel to the load or b) as a result of indirect spread from the wheel to the cab and further to the load to prevent Note: See also transitional provisions 1.6.5.23 and 1.6.5.25	

NEW UN NUMBER

UN Number	Naming and description	Class	Class code	Packing group	Danger label	Special Provisions	Limited and exempted quantity		Packaging			Tank and Container		ADR tank		Vehicle	Transportation (tunnel)	Special provisions			Operation	Marking
									Instructions	SP	Mix	Instructions	SP	Code	Mix			Shipping	Loose bulk	Loading and unloading		
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3550	COBALT DIHYDROXIDE POWDER with at least 10% respirable particles	6.1	T5	I	6.1		0	E5	P002 IBC07	 B20		T6	TP33	S10AH L10CH	TU14 TU15 TE19 TE21	AT	1 (C/E)	V15		CV1 CV13 CV28	S9 S14	66

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