

IMDG Code Amendment 41-22

changes detailed summary



NCB GROUP

This summary provides details on many of the updates being introduced in the Amendment 41-22 edition of the IMDG Code which may be used on an optional basis from 1 January 2023.

Note, there is a general 12-month transitional period from 1st January 2023 to 31st December 2023 during which the previous amendment, Amendment 40-20, can continue to be used.

These notes are intended to provide a detailed summary of the changes being introduced; however, they should not be regarded as a complete listing of amendments. Reference must be made to the text of Amendment 41-22 for full details of all the amendments and applicable provisions.

The changes provided in this update are harmonised with the Model Regulations, 22nd edition.

The changes are generally less onerous this time round, the table below identifies many of the changes on Part-by-Part basis:

Part 1 - GENERAL PROVISIONS, DEFINITIONS AND TRAINING		
IMDG ref	Subject	Summary of changes
1.2	Definitions	<p>Lots of changes to existing entries New definitions for IAEA Regulations*, inner vessel, pressure receptacle shell, and service equipment</p> <p>* Provided to ensure the IAEA regulations are harmoniously referenced in the Code. This also results in an editorial change in 1.5.1.1 and several changes in chapter 6.4.</p> <p>New unit of measurement added in 1.2.2.1: Electrical resistance Ω (ohm) – $1 \Omega = 1 \text{ kg} \cdot \text{m}^2 \cdot \text{s}^{-3} \cdot \text{A}^{-2}$</p>
1.4.3.2.3	Security plans	Specific security provisions for HCDG – both footnotes are moved into the text
1.5.1.1	General provisions concerning radioactive material	Reference to the IAEA regulations is reworded
Part 2 - CLASSIFICATION		
2.4.2.3.2.3/ 2.5.3.2.4	Class 4.1 - Self-reactives/ Class 5.2 - Organic Peroxides	<p>Change added to clear up confusion regarding the selection of the control and emergency temperatures due to some formulations for self-reactives and organic peroxides being listed in the lists for packagings and in IBC520 and T23, while others are only listed in either IBC520 and/or T23. The change here is also mirrored in IBC520 and T23.</p> <p>There is a new entry in the list of currently assigned self-reactive substances in packagings: UN 3230 (7-METHOXY-5- METHYLBENZOTHIOPHEN-2- YL) BORONIC ACID</p> <p>There is new note (11) added for this at the end of the table.</p>

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		<p>There are new entries added in the list of currently assigned organic peroxides in packagings</p> <p>UN 3105 tert-BUTYLPEROXY ISOPROPYLCARBONATE</p> <p>UN 3107 ACETYL ACETONE PEROXIDE</p> <p>UN 3117 tert-HEXYL PEROXYPIVALATE</p> <p>There is also a new note (32) added for the new UN 3107 entry.</p>
2.6	Class 6 - Toxic and infectious substances	In the introductory notes, in note 3 UN 3462 is added so that solid toxins from plant, animal or bacterial sources which do not contain any infectious substances, or toxins that are contained in substances which are not infectious substances are also considered for classification as well as liquids covered under UN 3172.
2.7	Class 7 - Radioactive material	<p>2.7.2.3.1.4 on how LSA-III material should be tested is deleted (now moved to new 2.7.2.3.4.3)</p> <p>2.7.2.3.1.5 on demonstrating compliance with performance standards is deleted</p> <p>2.7.2.3.4 is now retitled 'Low dispersible radioactive material'</p> <p>2.7.2.3.4.3 – new paragraph added, existing paragraph re-numbered and cross-references amended</p>
2.8	Class 8 - Corrosive substances	There are updates to 2.8.3 concerned with packing group assignment for substances and mixtures
2.9	Miscellaneous dangerous substances and articles (Class 9) and environmentally hazardous substances	There is a new note added to 2.9.3.4.3.4(a), and 2.9.4.7 is amended to add button cells installed in equipment as an exception to the test summary requirements.
Part 3 - DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND EXCEPTIONS		
3.2	DGL	<p>UN 1002 – new SP397 added</p> <p>UN 1012 – new SP398 added</p> <p>UN 1169 deleted (both PGII and PGIII entries). This is now merged with UN 1197, 'EXTRACTS, LIQUID, for flavour or aroma'</p> <p>UN 1439 – deleted SG75 applicable to strong acids and replaced with SG35. The word 'strong' has been removed from the properties and observations column, now just 'acids.'</p> <p>The word 'strong' is removed to just read 'acids'. This also applies to the properties and observations column of several other entries.</p> <p>In connection with the change above all entries also have 'SGG1a' replaced by 'SGG1' in column 16b, e.g. UN 1777, 2032</p>

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		<p>UN1891 – this is now class 3, sub hazard 6.1. The LQ, EQ and EmS values have been amended and flashpoint added to the properties and observations column</p> <p>UN 3208 PGII – ‘E0’ replaced with ‘E2’</p> <p>UN 3209 PGII – ‘E2’ replaced with ‘E0’</p> <p>UN 3527 (PG11 and PGIII) – ‘E0’ replaced with ‘See SP340’</p> <p>UN 3538 – new SP396 added</p> <p>UN 3550 – new entry for COBALT DIHYDROXIDE POWDER, containing not less than 10% respirable particles</p>
3.3	Special provisions	<p>SP188 – amended to remove note 1 in .6 (removal of elapsed marking provisions)</p> <p>SP225 – new note to .1 added clarifying that it applies equally to portable fire extinguishers without all the necessary components required for them to function</p> <p>SP396 – new provision specifying the conditions under which ‘large and robust articles’ may be transported with connected gas cylinders and open valves (regardless of the provisions provided in 4.1.6.1.5). Applies to UN 3538</p> <p>SP397 – new provision added for UN 1002 making it clear that this UN Number can apply to mixtures containing not more than 23.5 per cent oxygen by volume when no other oxidizing gases are present. If not more than this a class 5.1 sub-hazard label is not required.</p> <p>SP398 – new provision applicable to UN 1012 clarifying applicability to certain isomers of butylene (note new isomers of butylene have been added to the index)</p>
Part 4 - PACKING AND TANK PROVISIONS		
4.1	Use of packagings, including intermediate bulk containers (IBCs) and large packagings	<p>4.1.1.15 – New note added to clarify period of use for composite IBCs refers to the date of manufacture of the inner packaging</p> <p>4.1.1.9.2 – the maximum size of salvage pressure receptacles has increased from 1,000 litres to 3,000 litres</p> <p>4.1.3.3 – a new last sentence is added for packages such as crates, pallets etc that don’t need to meet the design type test provisions mentioned in 4.1.1.3 and that are authorized in packing instructions and special provisions. It now mentions that these packagings are not subject to the mass or volume limits in chapter 6.1 unless otherwise indicated in the packing instruction. There are notes pointing to this requirement and mentioning that the authorized packagings may exceed 400kgs added to several packing instructions as mentioned in the following list of changes: P003 – note added under PP32 P004 – note added under (3) P005 – new note added in the main text of the packing instruction P006 – new note added in paragraph (2) P130 – new note added to PP67 P144 – new note added to PP77 P408 – new note added at the end of paragraph (2)</p>

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		<p>P801 – new note added at the end of paragraph (2) P903 – new note added at the end of paragraph (5) (also see other changes mentioned below) P905, - new note added to main packing instruction text P906 - new notes added to (2) and the last paragraph P907 – new note added to the end of packing instruction text P909 – new note added at the end of paragraph (4) P910 – new note added at the end of paragraph (3)</p> <p>P137 – minor text edit to PP70</p> <p>P200 – extensive changes here. They include amendments to special packing provisions ‘d’ and ‘z’, and changes to the LC₅₀ for UN 1008, 2196, 2198 (table 2) and UN 1052 (table 3). UN 2196 and 2198 now allow more packaging types to be used.</p> <p>P205, P208 – have updates to referenced standards</p> <p>P621 – new packing options added for drums (non-removeable head options and plywood drums added) and jerricans (non removeable head options added)</p> <p>P903 – there are edits to the text in sections (2), (4) and (5)</p> <p>P911 – there is a new additional requirement (i) added for multiple batteries and multiple items of equipment containing batteries</p> <p>IBC02 – special packing provision B15 amended</p> <p>IBC07 – new special packing ‘B40’ added providing use of flexible IBCs (13H3 and 13H4) for the new UN 3550</p> <p>IBC520 – change to mirror the one added to 2.4.2.3.2.3 and 2.5.3.2.4 (and T23)</p> <p>LP906 – there are a number of amendments to this packing instruction including a new paragraph (4) regarding the availability of specific instruction for the use of the package, and a new additional requirement (i) added (similar to P911)</p> <p>4.1.6 - there are several small amendments to special packing provisions for goods of class 2</p> <p>4.1.9.1.4 - reference to tanks and IBCs is removed</p>
4.2	Use of portable tanks and multiple-element gas containers (MEGCS)	<p>There are several changes to reflect the new inclusion (in 6.10) of fibre-reinforced plastics.</p> <p>In the portable tank instruction table for T1-T22 there is a new sentence added at the end clarifying that the instructions for portable tanks with FRP shells applies to substances of class 1, 3, 5.1, 6.1, 6.2, 8 and 9. Additionally, the provisions of chapter 6.10 apply to the portable tanks with FRP shells.</p> <p>TP32 - .1 is updated to include reference to fibre-reinforced plastics.</p> <p>T23 – has a change to mirror the one added to 2.4.2.3.2.3 and 2.5.3.2.4 (and IBC520) and ‘tert-Butyl hydroperoxide, not more than 56% un diluent type B’ is added for UN 3109</p>

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Part 5 - Consignment		
5.1	General provisions	<p>5.1.2.1 – the requirements for labelling of overpacks containing radioactive materials is made clearer</p> <p>5.1.5.1.3 – this has been reworded (regarding shipment approval by special arrangement for radioactive material)</p>
5.2	Marking and labelling of packages including IBCs	<p>5.2.1.7.1/2 – ‘cryogenic receptacles’ now reads ‘closed or open cryogenic receptacles’</p> <p>5.2.1.10.2 – it was thought there wasn’t any real reason to having a telephone number on the lithium battery mark so this is removed. Marks still showing this are permitted until the end of 2026 and there is a new note to this effect.</p>
5.4	Documentation	<p>5.4.1.4.3 – there is a new .4 added for molten substances requiring the word ‘Molten’ to be added as part of the PSN (if not already there)</p> <p>5.4.1.4.3 – there is a new .9 added for stabilized and temperature controlled substances. If stabilization is used the word ‘Stabilized’ must be added to the PSN; if stabilization is achieved by temperature control or a mixture of that and chemical stabilization the words ‘Temperature Controlled’ must be added to the PSN.</p> <p>5.4.1.5.3 – the previous text is replaced and now clarifies that the documentation requirements applying to approved salvage packagings and receptacles also applies to any other appropriate packagings used</p> <p>5.4.1.5.4 – amended to now just be specific to ‘Temperature Controlled’ being part of the PSN</p> <p>5.4.1.5.17 – no longer specific to ‘Engines’ etc but now amended to apply to all instances where a special provision requires additional information included in the transport document</p>
Part 6 - CONSTRUCTION AND TESTING OF PACKAGINGS, INTERMEDIATE BULK CONTAINERS (IBCs), LARGE PACKAGINGS, PORTABLE TANKS, MULTIPLE-ELEMENT GAS CONTAINERS (MEGCs) AND ROAD TANK VEHICLES		
Part 6	General summary	<p>There are numerous changes in Part 6 concerning the design, construction and testing of packagings, IBCs, tanks etc. These changes are in the main to clarify the meaning of the requirements and to the terminology used. The changes are extensive in chapter 6.2 and there is a new 6.10 for portable tanks with shells made fibre-reinforced plastics materials.</p>
6.2	Provisions for the construction and testing of pressure receptacles, aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell	<p>As well as reflecting new and revised ISO standard there are also a whole raft of changes here, a non-exhaustive overview is below:</p> <p>6.2.1.1.9 - concerning requirements for the construction of pressure receptacles for acetylene is revised</p> <p>6.2.1.3.2 - paragraph on general provisions for service equipment is revised.</p> <p>6.2.1.4 – there are new paragraphs, 6.2.1.4.3 and .4. The former deals with the inspection, testing and approval of pressure receptacle shells and the inner vessels of closed cryogenic</p>

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	<p>cartridges containing liquefied flammable gas</p>	<p>receptacles, the latter is concerned with the conformity assessments of all types of pressure vessels.</p> <p>6.2.1.5.1 – for initial inspection and testing of new pressure receptacles there have been several changes to the existing list of inspections and tests and additions to this list for sampling closures and for all closures.</p> <p>6.2.1.5.2 – this paragraph applicable to closed cryogenic receptacles has been replaced with a more detailed paragraph which includes lists of inspection and tests to be carried out</p> <p>6.2.1.5.4 – this is a new paragraph regarding initial inspection and testing for bundles of cylinders</p> <p>6.2.1.6 – this paragraph on periodic inspection and testing has several changes including replacement of exiting notes and the addition of new notes</p> <p>6.2.1.7.2 – this paragraph on the verification pressure manufacturers has been revised</p> <p>6.2.2 – there are several updates to the ISO standards quoted throughout this section on provisions for UN pressure receptacles</p> <p>6.2.2.5 – there is a new paragraph 6.2.2.5.1 added clarifying the requirements for the conformity assessments of pressure receptacles and those parts that may be assessed separately and in 6.2.2.5.4 the existing text in .3 is replaced and there is a new sentence added to the end of the penultimate paragraph.</p> <p>6.2.2.7 – there are several amendments here dealing with the particular requirements for acetylene cylinders</p> <p>6.2.2.6/ 6.2.2.10/ 6.2.2.11 – there are minor changes to the marking requirements covered in these paragraphs, including a new paragraph for marking of closures for refillable UN pressure receptacles (6.2.2.11)</p> <p>6.2.4 – there is new paragraph 6.2.4.1 added regarding the internal pressure of aerosol dispensers. Subsequent paragraphs are re-numbered.</p>
<p>6.3</p>	<p>Provisions for the construction and testing of packagings for class 6.2 infectious substances of category A</p>	<p>There are a few minor edits in 6.3.2 concerning provisions for class 6.2 packagings</p>
<p>6.4</p>	<p>Provisions for the construction, testing and approval of packages for radioactive material and for the approval of such material</p>	<p>There are a number of revisions to align with the latest edition of the IAEA Regulations for the safe transport of radioactive material</p>

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6.5	Provisions for the construction and testing of intermediate bulk containers (IBCs)	<p>There are changes to reflect the ongoing development and update of IBCs. This is recognised with revision to paragraph 6.5.1.1.2.</p> <p>6.5.2.1.2 – this is a new marking requirement to reflect the increasing use of recycled materials in IBCs (this is similar to the requirement for packagings in 6.1.2.6)</p> <p>6.5.5 – there are changes here to reflect the use of recycled plastics materials</p>
6.7	Provisions for the design, construction, inspection and testing of portable tanks and multiple-element gas containers (MEGCs)	<p>New note 2 inserted to reflect the applicability of this chapter to portable tanks with shells made of fibre-reinforced plastics (FRP) to the extent indicated in chapter 6.10. FRPs are now also included in the definition of a portable tank in 6.7.2</p>
6.10	Provisions for the design, construction, inspection and testing of portable tanks with shells made of fibre-reinforced plastics (FRP) materials.	<p>New chapter inserted providing provisions for the design, construction, inspection and testing of portable tanks with shells made of fibre-reinforced plastics (FRP) materials. It applies to portable tanks with an FRP shell intended for the carriage of classes 1, 3, 5.1, 6.1, 6.2, 8 and 9. The structure of the chapter is similar to the portable tank chapter (6.7). It starts with application and general requirements in 6.10.1, and then layout the provisions for the design, construction, inspection and testing of FRP tanks in 6.10.2 including:</p> <p>6.10.2.2 – General design and construction provisions (an overview of what they are, what they consist of, special provisions for the carriage of class 3, and the construction process etc is found in 6.10.2.2.3)</p> <p>6.10.2.3 – Design criteria</p> <p>6.10.2.4 – Minimum wall thickness of the shell</p> <p>6.10.2.5 – Equipment components for portable tanks with FRP shell</p> <p>6.10.2.6 – Design approval</p> <p>6.10.2.7 – Additional provisions applicable to FRP portable tanks</p> <p>6.10.2.8 – Inspection and testing</p> <p>6.10.2.9 – Retention of samples</p> <p>6.10.2.10 – Marking</p>
Part 7 - PROVISIONS CONCERNING TRANSPORT OPERATIONS		
7.2	General segregation provisions	<p>7.2.5.2 – the entry for strong acids ‘SGG1a’ is deleted, as to is SG75 (Stow "separated from" SGG1a - strong acids.) from 7.2.8</p> <p>7.2.7.1.4 – ‘and those requiring special stowage’ deleted from text in brackets in note 1 (just removing redundant wording)</p>

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7.3	Consigning operations concerning the packing and use of cargo transport units (CTUs) and related provisions	7.3.7.2.3.1 – the word ‘Stabilized’ is replaced by ‘Temperature Controlled’																								
7.9.3	Contact information for the main designated national competent authorities	Reference is made to using GISIS for accessing and updating competent authority details																								
Additional changes																										
Index	-	<p>The entry for "Iron powder, see" is deleted</p> <p>For "Bromoethane, see" and "ETHYL BROMIDE", in the class column ‘6.1’ is replaced by ‘3’</p> <p>The entry for ‘EXTRACTS, AROMATIC, LIQUID’ is amended to read to read ‘Extracts, aromatic, liquid, see’</p> <p>The entry for ‘EXTRACTS, FLAVOURING, LIQUID’ is amended to read ‘Extracts, flavouring, liquid, see’</p> <p>There are the following new entries</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Substance, material or article</th> <th style="text-align: center;">MP</th> <th style="text-align: center;">Class</th> <th style="text-align: center;">UN. No.</th> </tr> </thead> <tbody> <tr> <td>1-butylene, <i>see</i></td> <td></td> <td style="text-align: center;">2.1</td> <td style="text-align: center;">1012</td> </tr> <tr> <td><i>cis</i>-2-butylene, <i>see</i></td> <td></td> <td style="text-align: center;">2.1</td> <td style="text-align: center;">1012</td> </tr> <tr> <td><i>trans</i>-2-butylene, <i>see</i></td> <td></td> <td style="text-align: center;">2.1</td> <td style="text-align: center;">1012</td> </tr> <tr> <td>COBALT DIHYDROXIDE POWDER, containing not less than 10% respirable particles</td> <td style="text-align: center;">P</td> <td style="text-align: center;">6.1</td> <td style="text-align: center;">3550</td> </tr> <tr> <td>EXTRACTS, LIQUID, for flavour or aroma</td> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">1197</td> </tr> </tbody> </table>	Substance, material or article	MP	Class	UN. No.	1-butylene, <i>see</i>		2.1	1012	<i>cis</i> -2-butylene, <i>see</i>		2.1	1012	<i>trans</i> -2-butylene, <i>see</i>		2.1	1012	COBALT DIHYDROXIDE POWDER, containing not less than 10% respirable particles	P	6.1	3550	EXTRACTS, LIQUID, for flavour or aroma		3	1197
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EmS	-	<p>UN 1891 – ‘F-A, S-A’ is replaced by ‘F-E, S-D’</p> <p>The new UN 3550 is added with the following schedules ‘F-A, S-A’</p>																								
Annex	-	there are several changes to the ‘Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo transport units’ section																								

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