INTERNATIONAL MARITIME ORGANIZATION

IMO

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SUB-COMMITTEE ON DANGEROUS GOODS, SOLID CARGOES AND CONTAINERS
10th session
Agenda item 3

DSC 10/3/1
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AMENDMENTS TO THE IMDG CODE AND SUPPLEMENTS, INCLUDING HARMONIZATION OF THE IMDG CODE WITH THE UN RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Amendment 33-06 to the IMDG Code and supplements

Report of the Editorial and Technical Group

Note by the Secretariat

SUMMARY

Executive summary:	This document contains the outcome of the Editorial and Technical (E&T) Group meeting held from 25 to 29 April 2005. During the meeting the Group prepared draft errata and corrigenda to the IMDG Code (32-04) and draft amendment 33-06 to the IMDG Code taking into consideration the relevant decisions of the Committee and DSC 9
Action to be taken:	Paragraph 31
Related documents:	DSC 9/3/2, DSC 9/3/4, DSC 9/3/8, DSC 9/3/10, DSC 9/3/12, DSC 9/3/15

GENERAL

1 The Editorial and Technical Group met from 25 to 29 April 2005 under the Chairmanship of Mrs. Olga P. Lefèvre (France).

2 The Group was attended by delegations from the following Member States:

BELGIUM	NETHERLANDS
CHINA	NORWAY
DENMARK	REPUBLIC OF KOREA
FINLAND	SPAIN
FRANCE	SWEDEN
GERMANY	UNITED KINGDOM
JAPAN	UNITED STATES

3 The meeting was also attended by a representative from the following United Nations and specialized agency:

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

and by observers from the following non-governmental organizations in consultative status:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
DANGEROUS GOODS ADVISORY COUNCIL (DGAC)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)
INTERNATIONAL VESSEL OPERATORS HAZARDOUS MATERIALS ASSOCIATION INC. (VOHMA)

4 The agenda and timetable of the session, as adopted by the Group, and list of participants including their contact addresses, are attached as annexes 1, 2 and 3 respectively.

5 The Group proceeded with the consideration of the issues as detailed in the ensuing paragraphs.

ERRATA AND CORRIGENDA TO THE IMDG CODE (32-04)

6 The Group prepared draft errata and corrigenda, as set out at annex 4, for consideration by DSC 10 and recommended that the Sub-Committee request the Secretariat to release the finalized errata and corrigenda before 1 January 2006, the date from which amendment 32-04 of the IMDG Code attains mandatory status without any transitional period.

PREPARATION OF AMENDMENT 33-06 TO THE IMDG CODE

7 The E&T Group, based on the proposals approved, in principle, by DSC 9 and on the report of the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (UNCOE) on its second session (ST/SG/AC.10/32/Add.1), prepared draft amendment 33-06 to the IMDG Code for consideration by DSC 10. In preparing the aforesaid amendments, the Group considered the following proposals, approved in principle by the Sub-Committee, DSC 9/3/2 (CEFIC), DSC 9/3/4 (Argentina), DSC 9/3/8 (Germany), DSC 9/3/9 (France), DSC 9/3/12 (Germany) and DSC 9/15 (paragraph 3.16).

Reporting of accidents and incidents

8 In considering the insertion of new paragraph 19, on reporting of accidents and incidents, an amendment to the UN Recommendations on the transport of dangerous goods, the Group was of the opinion that the insertion of the text of that new paragraph, in the draft amendment to the IMDG Code, was not necessary as existing SOLAS regulation VII/6 on Reporting of incidents involving dangerous goods required that when an incident took place involving the loss or likely loss of dangerous goods in packaged form into the sea, the master, or other person having charge of the ship, shall report the particulars of such an incident without delay and to the fullest extent possible to the nearest coastal State.

9 In addition, the Group noted that MARPOL Article 8 on Reports on incidents involving harmful substances requires that a report of an incident shall be made without delay to the fullest extent possible in accordance with the provisions of Protocol I to the Convention.

10 In the light of the above, the Group concluded that it was not necessary to incorporate the new paragraph 19, as referenced in paragraph 8 above, in the draft amendment 33-06 to the IMDG Code.

Amendment of flashpoint of 61ºC to 60ºC

11 The Group considered the various amendments to the UN Recommendations on the transport of dangerous goods, whereby flashpoint of 61°C in various places within the IMDG Code would read 60°C, and agreed that a decision to incorporate such proposals within the draft amendment to the Code would require consequential amendments to SOLAS regulation II-2/19 (II-2/54) and perhaps to other IMO instruments. On the other hand, if such amendments were not made to the Code, the provisions concerned of the IMDG Code would not be in line with other relevant modal provisions. In the light of the aforesaid, the Group decided to place those amendments in square brackets and invited Member States and international organizations to submit proposals to the Committee and Sub-Committee, as appropriate, on the way forward.

Requirements and control for transport of class 7 excepted packages

12 The Group, considering an amendment to 2.7.9.7 of the UN Recommendations on the transport of dangerous goods, noted that that paragraph was not a part of the IMDG Code and invited Member States and international organizations to contact class 7 experts and to submit proposals, taking into consideration references to certain paragraph numbers in that paragraph, for consideration at DSC 10. The observer from IAEA informed the Group that the text in 2.7.9.7 did not originate from the IAEA Regulations for the Safe Transport of Radioactive Material.

UN 1950 (Aerosols)

13 The Group considered amendments to the entry for UN 1950 (Aerosols) and noted that compliance with those amendments might lead to a situation whereby large quantities of waste aerosols containing flammable gases, which were not protected against inadvertent discharge, are carried in the holds of ships. That development could result in an accumulation of harmful gases and thus an unsafe atmosphere in the ship's hold. The Group noted the intention of VOHMA and possibly the United States to submit proposals to DSC 10 on the issue and decided to place those amendments to UN 1950 in square brackets.

SP 909

14 According to SP 909, substances which are not designated as marine pollutants but are subject to other transport regulations due to their potential to cause harm to environment other than marine environment, may be transported under UN 3077 and UN 3082 if they do not meet the criteria of classes 1 to 8.

15 In the opinion of the delegation of the United States, there are substances which are not designated as marine pollutants but could be considered as having a potential to cause harm to the aquatic environment according to national or other modal regulations; therefore, it would be appropriate to delete the phrase "other than the marine environment" from SP 909. The Group agreed that the proposal had merit and noted the intention of the United States to submit a formal proposal, on that issue, to DSC 10 for an appropriate amendment to that special provision.

Part 7 of the UN Recommendations on the transport of dangerous goods

16 The Group noted the text of Part 7 of the UN Recommendations on the transport of dangerous goods and also noted that some Member States and international organizations might submit proposals to DSC 10 on the need to incorporate some or all of the provisions.

DSC 9 approved proposals

17 The Group considered the submission by CEFIC (DSC 9/3/2), proposing to allow the transport, in the same cargo transport unit, of certain groups of substances, which do not react dangerously when in contact with each other but which need to be segregated according to 7.2 of the Code, and finalized the proposal as amendments to paragraphs 5.4.1.5.11 and 7.2.1.13 and to column (16) of the dangerous goods list for entries for UN Nos.1285, 1818, 2014, 2189, 2984, 3105, 3107, 3109 and 3149.

18 The Group considered the submission by Argentina (DSC 9/3/4), which proposed to amend gas-specific provision *l* of packing instruction P200 as applied to the transport of Ethylene Oxide, and finalized it along the lines of that adopted by the UN COE.

19 The Group considered the submission by Germany (DSC 9/3/8), regarding the need to clarify provisions for the transport of flammable liquids requiring temperature control for commercial reasons as reflected in part 7, and finalized the proposal by drafting a new paragraph 7.7.6 to the Code.

20 The Group considered the submission by France (DSC 9/3/9), proposing to amend paragraph 3.4.4.1 of the IMDG Code to enable dangerous goods in limited quantities, falling in packing group III category, to be packaged in the same outer packaging, and finalized the proposal as amendments to paragraphs 3.4.4.1 and 5.4.1.5.2 of the Code.

21 The Group referred to the decision of DSC 9 (DSC 9/15, paragraph 3.16) and concluded that by deleting sections 2.4.2.3.3.3 and 2.5.3.3.3 from the IMDG Code the proposal by the Republic of Korea (DSC 9/3/10), that packing group for explosives should appear on dangerous goods transport document in order to avoid user's confusion, should be addressed.

22 The Group considered the submission by Germany (DSC 9/3/12), proposing to clarify the use of tanks for transport of UN 1040 approved in accordance with amendment 29-98 until 2010, and agreed to a new TP 90 for insertion in column (12) of the entry against UN 1040.

23 The Group invited the Sub-Committee to approve the consolidated text of the draft amendment 33-06 to the IMDG Code, attached as annex 5.

Review of Annex III to MARPOL 73/78 and environmentally hazardous substances

24 The Group recalled the relevant decisions of MEPC 51 (MEPC 51/22, paragraphs 10.1 to 10.15) regarding decisions of DSC 8 concerning environmentally hazardous substances.

25 The Group also recalled that the UN SCOE, at its July 2004 meeting, had decided to add the words "Aquatic pollutant" to the proper shipping name in the transport document when a substance met the GHS criteria for environmentally hazardous substances. That Sub-Committee requested IMO to provide comments on that decision of the UN SCOE.

26 The Group noted that, DSC 9 (27 September to 1 October 2004) (DSC 9/15, paragraph 3.31.2), decided to harmonize the terminology with the UN Recommendations and use the term "Aquatic Pollutant" instead of the term "Marine Pollutant", provided that the former was adopted by the UN COE as an amendment to the UN Recommendations on the transport of dangerous goods. Taking into consideration the July 2004 meeting of the UN SCOE, DSC 9 established a working group on the Review of Annex III to MARPOL 73/78. That working group prepared draft text of chapter 2.9 of the IMDG Code (DSC 9/WP.4, annex 1) and identified paragraph numbers of the Code to which consequential amendments were to be made accordingly (DSC 9/WP.4, annex 2).

27 The Group recalled the decision of DSC 9 (DSC 9/15, paragraph 3.33.7) to prepare consequential amendments to IMDG Code paragraphs identified in DSC 9/WP.4, annex 2, and to bring them to the attention of DSC 10. However, the Group noted that the UN SCOE (DSC 10/3, annex) had taken a different position to what was decided at its July 2004 meeting and agreed that, in the light of the most recent decisions taken by the UN SCOE in December 2004, it was premature to prepare those consequential amendments. In that context, the Group came to the conclusion that clear guidance was needed from DSC 10 as to how to progress with the matter. In that context, the Group urged Member Governments and international organizations to submit proposals on the issue for consideration at DSC 10 so that an informed and well considered decision could then be taken.

28 Notwithstanding the above, the Group placed the whole text of the amendments related to chapter 2.9, as adopted by the UN COE, at annex 6.

Contact information for the designated national competent authorities

29 The Group recalled the decision of the Sub-Committee (DSC 9/15, paragraph 3.4) to revise MSC.2/Circ.36 in the light of the mandatory status of the IMDG Code and that the amended section 7.9.3 of that Code (as reflected in annex 5) would only contain contact information for the designated national competent authorities, and prepared draft revised MSC circular, attached as annex 7.

EXPRESSIONS OF APPRECIATION

30 The Group, noting that Mr. E. P. Pfersich, Head of the United States delegation, would soon retire from his position, expressed appreciation for the valuable services rendered by Mr. Pfersich over many years and wished him all the best for his retirement.

ACTION REQUESTED OF THE SUB-COMMITTEE

31 The Sub-Committee is invited to:

.1 approve the draft errata and corrigenda and, subject to finalization by the E&T Group, upon instructions of the Sub-Committee, request the Secretariat to issue the finalized errata and corrigenda before 1 January 2006, the date from which amendment 32-04 of the IMDG Code attains mandatory status without any transitional period (paragraph 6 and annex 4);

.2 agree with the view of the Group that it is not necessary to incorporate new paragraph 19, an amendment to the UN Recommendations on the transport of

dangerous goods, in the draft amendment 33-06, as existing SOLAS regulation VII/6 and MARPOL Article 8 on Reporting of incidents involving dangerous goods, and Reports on incidents involving harmful substances, respectively, adequately address the relevant requirements (paragraph 10);

.3 consider the view of the Group, that by adopting the various amendments to the UN Recommendations on the transport of dangerous goods whereby flashpoint of 61°C in various places within the IMDG Code would read 60°C would require consequential amendments to SOLAS regulation II-2/19 (II-2/54) and perhaps to other IMO instruments, and decide accordingly (paragraph 11);

.4 note that DSC 9 (September 2004) had taken certain decisions based on the outcome of the UN SCOE at its July 2004 meeting and, as the UN SCOE at its December 2004 meeting took a different position to what was decided at its July 2004 meeting the Group agreed that it was premature to prepare consequential amendments to the IMDG Code as requested by DSC 9 (DSC 9/15, paragraph 3.33.7), provide clear guidance as to how to proceed with the matter (paragraphs 24 to 28 and annex 6);

.5 approve draft MSC circular on Contact information for the designated national competent authorities and invite MSC 81 to adopt it (paragraph 29 and annex 7);

.6 approve draft amendment 33-06 to the IMDG Code (paragraph 23 and annex 5); and

.7 approve the report in general.

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ANNEX 1

AGENDA

**for the Editorial and Technical Group held at
IMO Headquarters, 4 Albert Embankment, London SE1 7SR
from Monday, 25 to 29 April 2005**

(session commenced at 9.30 a.m. on Monday, 25 April 2005)

Opening of the session

1 Adoption of the agenda

2 Preparation of draft errata and corrigenda to the IMDG Code (32-04)

3 Preparation of draft amendment 33-06 to the IMDG Code
- harmonization with the amendments to the Recommendations on the Transport of Dangerous Goods, thirteen revised edition;
- incorporation of proposals adopted in principle during DSC 9

4 Informal discussion on substances hazardous to the marine environment (aquatic environment)

5 Preparation of draft MSC circular on Additional contact addresses of the offices of the designated national competent authorities

6 Report to DSC 10

Closing of the session

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ANNEX 2

TIMETABLE

for the session of the Editorial and Technical Group held at IMO Headquarters from 25 to 29 April 2005

Date	Item	
Monday, 25 April		Opening of the session
	1	Adoption of the agenda
	2	Preparation of draft errata and corrigenda to the IMDG Code (32-04)
	3	Preparation of draft amendment 33-06 to the IMDG Code (harmonization with the amendments to the Recommendations on the Transport of Dangerous Goods, thirteenth revised edition)
Tuesday, 26 April	3	Preparation of draft amendment 33-06 to the IMDG Code (harmonization with the amendments to the Recommendations on the Transport of Dangerous Goods, thirteenth revised edition) (cont.) Preparation of amendment 33-06 to the IMDG Code (incorporation of proposals adopted in principle during DSC 9)
Wednesday, 27 April	3	Preparation of amendment 33-06 to the IMDG Code (incorporation of proposals adopted in principle during DSC 9) (cont.)
Thursday, 28 April	4	Informal discussion on substances hazardous to the marine environment (aquatic environment)
	5	Preparation of draft MSC circular on Contact information for the main designated national competent authorities
Friday, 29 April	6	Consideration and adoption of report to DSC 10 Closing of the session

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ANNEX 3

EDITORIAL AND TECHNICAL MEETING
LIST OF PARTICIPANTS AND CONTACT DETAILS

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ANNEX 4

DRAFT ERRATA AND CORRIGENDA TO THE IMDG CODE (32-04)
International Maritime Dangerous Goods (IMDG) Code, 2004 Edition, including Amendment 32-04

December 2005

Note: Corrigenda to the International Maritime Dangerous Goods Code are also made available via Internet on the web site of International Maritime Organization at the following address: [To be inserted]

Volume 1

Page	Correction
30	In 1.4.3.1, in the text against class 7, replace "type B or type C" with Type B(U) or Type B(M) or Type C".
65	For "UN 3107 POLYETHER POLY-*tert*-BUTYLPEROXYCARBONATE", in the column heading "Diluent type B", replace "≥ 23" with "≥ 48".
70	In Note (18), add at the end of the sentence "for concentrations below 80%".
70	In Note (8), replace less than 10.7% with less than or equal to 10.7%.
75	In 2.6.2.2.4.7.1, in the explanation of "f_i" replace "liquid" with "mixture".
75	In 2.6.2.2.4.7.2, insert "comprising the mixture" after "component substances" and before "using the formula".
81	In 2.7.1.2(f), second line, replace "defined" with "set out in the definition for 'contamination' ".
101	In 2.7.9.3(b), first line, insert "manufactured" after "or" and before "article".
104	In 2.8.2.5.3.2, fourth line, amend "SAE 1015" to read "SAE 1020".
113	In the Note to 4.1.1, second line, insert "only" after "(class 7)".
113	In the Note to 4.1.1, third line, replace "P621" with "P620, P621, P650".
114	In 4.1.1.7.2, end of paragraph, replace "shall" with "should".
116	In 4.1.1.17.5, second line, amend the reference to "6.1.5.8" to read "6.1.5.7".
120	In P001, at the end of PP1(a), add "or".
149	In the table for packing instruction P404, second row, delete UN numbers "3052, 3203, 3392, 3394, 3395, 3396, 3397, 3398, 3399 and 3400" and add UN number "3461".
149	In the table for packing instruction P404, fourth row, in the entries against PP31, delete UN numbers "3052, 3203, 3392, 3394, 3395, 3396, 3397, 3398, 3399 and 3400" and add UN number "3461".
161	In the table for packing instruction P650, paragraph 8, sixth line, insert "the package (the outer packaging or the overpack)" after "packagings and" and before "shall be marked".
165	In the table for packing instruction P906, second row, amend "3452" to read "3432".
166	In the table for packing instruction IBC02, special packing provision B5, add ",2984" after "2014".
174	In the last paragraph of 4.1.6.1.8, delete " for unprotected valves as described in .4,".
195	In TP5, amend "shall not be exceeded" to read "shall be met".
201	In paragraph 5.1.2.1, add at the end of the last sentence "unless markings and labels representatives of all dangerous goods, as required by chapter 5.2, in the overpack are visible.".
241	In 6.1.4.19.1.1, amend "6.1.4.8.4" and "6.1.4.8.7" to read "6.1.4.8.3" and "6.1.4.8.6" respectively.
242	In 6.1.4.19.2.8, amend "6.1.4.8.3" and "6.1.4.8.7" to read "6.1.4.8.2" and "6.1.4.8.6" respectively.

245	In 6.1.5.2.5, third line, amend "6.1.4.8.4" to read "6.1.4.8.3".
254	In 6.2.2.5.2.1, fifth line, amend "6.2.2.6" and "6.2.2.7" to read "6.2.2.7" and "6.2.2.8" respectively.
275	In 6.4.13, amend "6.4.1" to read "6.4.15".
278	In 6.4.20.2(a), delete the duplicated words "at the top".
287	In the table of 6.5.1.4.3, in the entry for "HZ Composite with plastics inner receptacle", second column, insert "inner" after "plastics" (six times).
351	In 6.8.3.3.2.1.5, amend "6.7.4.2.1" to read "6.7.4.2.13".
358	In 7.1.1.15, second line, amend "top of side walls …" to read "top or side walls …".
410	In 7.2.7.2.1.1, third line, amend the reference to "7.2.7.4" to read "7.2.7.2.1.5".
422	In 7.4.5.13, first indent, insert before "and the refrigeration", "or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated II-2/1.2.1, as applicable,".
423	In 7.4.6.4.2, first line add, after "class1", "other than division 1.4".
443	In column (2) of the entry for Japan, amend the last paragraph to read "Packagings, IBCs and large packagings in conformity with the IMDG Code will be marked "J", "J/JG" or "J/HK"."

Volume 2

Page	Correction
4	In 3.1.2.6.1, insert "or equal to" after "less than" and before "50^0C".
8	Delete the entry 2253 from the list of acids.
8	Insert 2353 Butyryl Chloride in the list of acids.
28	In column 8 of the entry for UN 0153, amend "P112 (a), (b) or (c)" to read "P112 (b) or (c)".
54	In column (14) of the entry for UN 1268 (PG II and III), delete "TP9".
74	In columns (13 and (14) of the entries for UN 1569, replace "T3" and "TP33" with "T10" and "TP2, TP13" respectively.
83	In column (14) of the entry for UN 1745 add "TP2 , TP12 and TP13".
83	In column (14) of the entry for UN 1746 add "TP2 , TP12 and TP13".
91	In column (12) of the entry for UN 1849, replace "T4" with "-".
108	In column (17) of the entry for UN 2290, replace "nitric" by "nitrous".
108	In column (11) of the entry for UN 2308, replace "B11" with "B20".
110	In column (4) of the entry for UN 2346, replace "P" with "-".
128	In column (4) of the entry for UN 2687, replace "P" with "-".
136	In column (17) of the entry for UN 2802, amend third sentence to read "Corrosive to steel.".
139	In columns (13) and (14) of the entries for UN 2870 (ALUMINIUM BOROHYDRIDE) insert "T21" and "TP7, TP33" respectively
139	In columns (13) and (14) of the entries for UN 2870 (ALUMINIUM BOROHYDRIDE IN DEVICES) delete "T21" and "TP7, TP33" respectively.
143	In column (13) of the entry for UN 2927, PG II, replace "TP 11" with "T11".
154	Insert a new entry for UN 3100, PG II, to read "3100" "OXIDIZING SOLID, SELF-HEATING, N.O.S", "5.1", "4.2, "●", "II", "76, 274", "None", "P099", "-","-","-","-", "-", "-", "F-A, S-Q", "-", "-".
155	In column (4) of the entry for UN 3112, replace "●" with "-".
157	In column (16) of the entry for UN 3130, PG II, add "If under deck, in a mechanically ventilated space.".
157	In column (4) of the entry for UN 3137, add "●"
167	In column (14) of the entry for UN 3254, delete "TP33".
167	In column (13) of the entry for UN 3259, PG III, replace "T3" with "T1"
177	In column (17) of the entry for UN 3360, fourth line, replace "620" with "360".
184	In column (16) of the entry for UN 3424, PG III, in second sentence, delete ", especially lead" after "heavy metals".
185	In column (16) of the entry for UN 3457, add "Segregation as for class 5.1 but "Away from" classes 4.1, 5.1 and 7.".
186	In column (9) of the entry for UN 3461, add "PP31".
191	In SP 215, fourth line, amend "azocarbonamide" to read "azodicarbonamide".
193	In SP 247, sub-paragraph .5, add at the end "or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated II-2/1.2.1, as applicable."
196	In SP 297, second line, amend "5.4.2.1.9" to read "5.4.2.1.8".
196	In SP 299(iii), replace "620" with "360".
197	Insert "SP 306 This entry may only be used for substances that do not exhibit explosive properties of class 1 when tested in accordance to Test Series 1 and 2 of class 1 (see *United Nations Manual of Tests and Criteria*, Part 1)" after "SP 305" and before "SP 307".

236	In column (2) of the entry for "*ortho*-Aminoanisole, see", replace "P" with "-".
239	In column (4) of the entry for "n-Amylbenzene, see Note 1" add "-"
247	In column (2) of the entry for "BUTANEDIONE" delete "P".
251	In column (4) of the entry for "Camphechlor", insert "-".
259	Delete the entry for "Copper Chloride (solution)".
260	In column (2) of the entry for "Cupric Chloride, see", replace "P" with "PP".
260	In column (2) of the entry for "Cuprous Chloride, see", replace "P" with "PP".
267	In column (2) of the entry for "DICYCLOHEXYLAMMONIUM NITRITE", replace "P" with "-".
268	In the entry for "Difluoroethane and Dichlorodifluoromethane, Azeotropic Mixture with approximately 74% dichlorodifluoromethane, see DICHLORODIFLUOROMETHANE and DIFLUOROETHANE, AZEOTROPIC MIXTURE", amend "and" to read "AND".
272	In column (4) of the entry for "Dioxathion" insert "-".
279	In column (2) of the entries for "FIBRES, VEGETABLE with oil" and "FIBRES, ANIMAL with oil", add "N.O.S.".
305	In column (2) of the entry for ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED, replace "●" with "-".
306	Amend "ORGANOMETALLIC SUBSTANCE, SOLID, TOXIC" to read "ORGANOMETALLIC COMPOUND, SOLID, TOXIC".
306	In column (2) of the entry for "OXIDIZING SOLID, FLAMMABLE, N.O.S." replace "●" with "-".
306	In column (2) of the entry for "OXIDIZING SOLID, SELF-HEATING, N.O.S." replace "●" with "-".

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ANNEX 5

DRAFT AMENDMENT 33-06 TO THE IMDG CODE

PART 1

Chapter 1.1

1.1.3.2.3 Insert the following new first sentence “Doses to persons shall be below the relevant dose limits.”.

At the end of the second sentence, replace: "and doses to persons shall be below the relevant dose limits", with "within the restriction that the doses to individuals be subject to dose constraints.".

1.1.3.2.4 Replace "the radiation hazards involved and" with "radiation protection including".

Replace "to ensure restriction of their exposure and that" with "to restrict their occupational exposure and the exposure".

1.1.3.2.5 In the French version, replace "dose effective" with "dose efficace".

Delete indent .1 and renumber .2 and .3 as .1 and .2.

1.1.3.4.1 Insert "of radioactive material" after "which consignments".
Delete "applicable to radioactive material" at the end.

1.1.3.4.2 Delete "international", in the last sentence.

Chapter 1.2

[1.2.1 In the definition of "Elevated temperature substance", amend "61°C" to read "60°C".]

1.2.3 Add the following abbreviations in alphabetical order:

*"*ASTM *American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959, United States of America);"*

*"*CGA *Compressed Gas Association (CGA, 4221 Walney Road, 5th Floor, Chantilly VA 20151-2923, United States of America);"*

*"*EN (standard) *means a European standard published by the European Committee for Standardization (CEN) (CEN – 36 rue de Stassart, B-1050 Brussels, Belgium);"*

*"*IAEA *International Atomic Energy Agency (IAEA, P.O. Box 100 – A -1400 Vienna, Austria);"*

*"*ICAO *International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada);"*

*"*IMO *International Maritime Organization (IMO, 4 Albert Embankment, London SE1 7SR, United Kingdom);"*

*"*ISO (standard) *an international standard published by the International Organization for Standardization (ISO - 1, rue de Varembé, CH-1204 Geneva 20, Switzerland);"*

*"*UNECE *United Nations Economic Commission for Europe (UNECE, Palais des Nations, 8-14 avenue de la Paix, CH-1211 Geneva 10, Switzerland);"*

and delete the current abbreviations and text against IAEA, IMO, ISO and UN ECE and provide addresses of other organizations.

Chapter 1.4

1.4.3.1 For class 6.2 insert "(UN Nos.2814 and 2900)" after "Category A".
Delete the last paragraph.

1.4.3.5 Add a new paragraph after 1.4.3.4 to read as follows:

"1.4.3.5 For radioactive material, the provisions of this chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material and of IAEA INFCIRC/225 (Rev.4) are applied.".

PART 2

Chapter 2.1

2.1.3.5 Insert the following new paragraphs:

"**2.1.3.5** ***Assignment of fireworks to hazard divisions***

2.1.3.5.1 Fireworks shall normally be assigned to hazard divisions 1.1, 1.2, 1.3, and 1.4 on the basis of test data derived from Test Series 6 of the United Nations *Manual of Test and Criteria*. However, since the range of such articles is very extensive and the availability of test facilities may be limited, assignment to hazard divisions may also be made in accordance with the procedure in 2.1.3.5.2.

2.1.3.5.2 Assignment of fireworks to UN Nos. 0333, 0334, 0335 or 0336 may be made on the basis of analogy, without the need for Test Series 6 testing, in accordance with the default fireworks classification table in 2.1.3.5.5. Such assignment shall be made with the agreement of the competent authority. Items not specified in the table shall be classified on the basis of test data derived from Test Series 6 of the United Nations *Manual of Test and Criteria*.

NOTE: *The addition of other types of fireworks to column 1 of the table in 2.1.3.5.5 shall only be made on the basis of full test data submitted to the UN Sub-Committee of Experts on the Transport of Dangerous Goods for consideration.*

2.1.3.5.3 Where fireworks of more than one hazard division are packed in the same package they shall be classified on the basis of the highest hazard division unless test data derived from Test Series 6 of the United Nations Manual of Test and Criteria indicate otherwise.

2.1.3.5.4 The classification shown in the table in 2.1.3.5.5 applies only for articles packed in fibreboard boxes (4G).

2.1.3.5.5 *Default fireworks classification table*[*]

NOTE 1: *References to percentages in the table, unless otherwise stated, are to the mass of all pyrotechnic composition (e.g. rocket motors, lifting charge, bursting charge and effect charge).*

***NOTE 2*:** *"Flash composition" in this table refers to pyrotechnic compositions containing an oxidizing substance, or black powder, and a metal powder fuel that are used to produce an aural report effect or used as a bursting charge in fireworks devices.*

[*] This table contains a list of firework classifications that may be used in the absence of Test Series 6, of the United Nations Manual of Test and Criteria, data (see 2.1.3.5.2).

NOTE 3: *Dimensions in mm refers to:*

- *for spherical and peanut shells the diameter of the sphere of the shell;*
- *for cylinder shells the length of the shell;*
- *for a shell in mortar, Roman candle, shot tube firework or mine the inside diameter of the tube comprising or containing the firework;*
- *for a bag mine or cylinder mine, the inside diameter of the mortar intended to contain the mine.*

Type	Includes: / Synonym:	Definition	Specification	Classification
Shell, spherical or cylindrical	Spherical display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell; report shell: maroon, salute, sound shell, thunderclap, aerial shell kit	Device with or without propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic composition and designed to be projected from a mortar	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: < 180 mm with > 25% flash composition, as loose powder and/ or report effects	1.1G
			Colour shell: < 180 mm with ≤ 25% flash composition, as loose powder and/ or report effects	1.3G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic composition, with ≤ 2% flash composition as loose powder and/ or report effects	1.4G
	Peanut shell	Device with two or more spherical aerial shells in a common wrapper propelled by the same propellant charge with separate external delay fuses	The most hazardous spherical aerial shell determines the classification	
	Preloaded mortar, shell in mortar	Assembly comprising a spherical or cylindrical shell inside a mortar from which the shell is designed to be projected	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: > 50 mm and < 180 mm	1.2G

Type	Includes: / Synonym:	Definition	Specification	Classification
			Colour shell: ≤ 50 mm, or < 60 g pyrotechnic composition, with ≤ 25% flash composition as loose powder and/ or report effects	1.3G
Shell, spherical or cylindrical *(cont'd)*	Shell of shells (spherical) (Reference to percentages for shell of shells are to the gross mass of the fireworks article)	Device without propellant charge, with delay fuse and bursting charge, containing report shells and inert materials and designed to be projected from a mortar	> 120 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing report shells ≤ 25g flash composition per report unit, with ≤ 33% flash composition and ≥ 60% inert materials and designed to be projected from a mortar	≤ 120 mm	1.3G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells and/or pyrotechnic units and designed to be projected from a mortar	> 300 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic composition and designed to be projected from a mortar	> 200 mm and ≤ 300 mm	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
		Device with propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70 mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic composition and designed to be projected from a mortar	≤ 200 mm	1.3G
Battery/ combination	Barrage, bombardos, cakes, finale box, flowerbed, hybrid, multiple tubes, shell cakes, banger batteries, flash banger batteries	Assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	The most hazardous firework type determines the classification	
Roman candle	Exhibition candle, candle, bombettes	Tube containing a series of pyrotechnic units consisting of alternate pyrotechnic composition, propellant charge, and transmitting fuse	≥ 50 mm inner diameter, containing flash composition, or <50 mm with >25% flash composition	1.1G
			≥ 50 mm inner diameter, containing no flash composition	1.2G
			< 50 mm inner diameter and ≤ 25% flash composition	1.3G
			≤ 30 mm inner diameter, each pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G
Shot tube	Single shot Roman candle, small preloaded mortar	Tube containing a pyrotechnic unit consisting of pyrotechnic composition, propellant charge with or without transmitting fuse	≤ 30 mm inner diameter and pyrotechnic unit > 25 g, or > 5% and ≤ 25% flash composition	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
			≤ 30 mm inner diameter, pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G
Rocket	Avalanche rocket, signal rocket, whistling rocket, bottle rocket, sky rocket, missile type rocket, table rocket	Tube containing pyrotechnic composition and/or pyrotechnic units, equipped with stick(s) or other means for stabilization of flight, and designed to be propelled into the air	Flash composition effects only	1.1G
			Flash composition > 25% of the pyrotechnic composition	1.1G
			> 20 g pyrotechnic composition and flash composition ≤ 25 %	1.3G
			≤ 20 g pyrotechnic composition, black powder bursting charge and ≤ 0.13 g flash composition per report and ≤ 1 g in total	1.4G
Mine	Pot-a-feu, ground mine, bag mine, cylinder mine	Tube containing propellant charge and pyrotechnic units and designed to be placed on the ground or to be fixed in the ground. The principal effect is ejection of all the pyrotechnic units in a single burst producing a widely dispersed visual and/or aural effect in the air or: Cloth or paper bag or cloth or paper cylinder containing propellant charge and pyrotechnic units, designed to be placed in a mortar and to	> 25% flash composition, as loose powder and/ or report effects	1.1G
			≥ 180 mm and ≤ 25% flash composition, as loose powder and/ or report effects	1.1G
			< 180 mm and ≤ 25% flash composition, as loose powder and/ or report effects	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
		function as a mine	≤ 150 g pyrotechnic composition, containing ≤ 5% flash composition as loose powder and/ or report effects. Each pyrotechnic unit ≤ 25 g, each report effect < 2g ; each whistle, if any, ≤ 3 g	1.4G
Fountain	Volcanos, gerbs, showers, lances, Bengal fire, flitter sparkle, cylindrical fountains, cone fountains, illuminating torch	Non-metallic case containing pressed or consolidated pyrotechnic composition producing sparks- and flame	≥ 1 kg pyrotechnic composition	1.3G
			< 1 kg pyrotechnic composition	1.4G
Sparkler	Handheld sparklers, non-handheld sparklers, wire sparklers	Rigid wire partially coated (along one end) with slow burning pyrotechnic composition with or without an ignition tip	Perchlorate based sparklers: > 5 g per item or > 10 items per pack	1.3G
			Perchlorate based sparklers: ≤ 5 g per item and ≤ 10 items per pack; Nitrate based sparklers: ≤ 30 g per item	1.4G
Bengal stick	Dipped stick	Non-metallic stick partially coated (along one end) with slow-burning pyrotechnic composition and designed to be held in the hand	Perchlorate based items: > 5 g per item or > 10 items per pack	1.3 G
			Perchlorate based items: ≤ 5 g per item and ≤ 10 items per pack; nitrate based items: ≤ 30 g per item	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Low hazard fireworks and novelties	Table bombs, throwdowns, crackling granules, smokes, fog, snakes, glow worm, serpents, snaps, party poppers	Device designed to produce very limited visible and/ or audible effect which contains small amounts of pyrotechnic and/ or explosive composition.	Throwdowns and snaps may contain up to 1.6 mg of silver fulminate; snaps and party poppers may contain up to 16 mg of potassium chlorate/ red phosphorous mixture; other articles may contain up to 5 g of pyrotechnic composition, but no flash composition	1.4G
Spinner	Aerial spinner, helicopter, chaser, ground spinner	Non-metallic tube or tubes containing gas- or spark-producing pyrotechnic composition, with or without noise producing composition, with or without aerofoils attached	Pyrotechnic composition per item > 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.3G
			Pyrotechnic composition per item ≤ 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.4G
Wheels	Catherine wheels, Saxon	Assembly including drivers containing pyrotechnic composition and provided with a means of attaching it to a support so that it can rotate	≥ 1 kg total pyrotechnic composition, no report effect, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			< 1 kg total pyrotechnic composition, no report effect, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Aerial wheel	Flying Saxon, UFO's, rising crown	Tubes containing propellant charges and sparks- flame- and/ or noise producing pyrotechnic compositions, the tubes being fixed to a supporting ring	> 200 g total pyrotechnic composition or > 60 g pyrotechnic composition per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			≤ 200 g total pyrotechnic composition and ≤ 60 g pyrotechnic composition per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G
Selection pack	Display selection box, display selection pack, garden selection box, indoor selection box; assortment	A pack of more than one type each corresponding to one of the types of fireworks listed in this table	The most hazardous firework type determines the classification	
Firecracker	Celebration cracker, celebration roll, string cracker	Assembly of tubes (paper or cardboard) linked by a pyrotechnic fuse, each tube intended to produce an aural effect	Each tube ≤ 140 mg of flash composition or ≤ 1 g black powder	1.4G
Banger	Salute, flash banger, lady cracker	Non-metallic tube containing report composition intended to produce an aural effect	> 2 g flash composition per item	1.1G
			≤ 2 g flash composition per item and ≤ 10 g per inner packaging	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
			≤ 1 g flash composition per item and ≤ 10 g per inner packaging or ≤ 10 g black powder per item	1.4G

Chapter 2.2

2.2.2.2 Delete "are transported at a pressure not less than 280 kPa at 20°C, or as refrigerated liquids, and which".

2.2.2.5 Add a new paragraph to read as follows:

"2.2.2.5 Gases of class 2.2, other than refrigerated liquefied gases, are not subject to the provisions of this Code if they are transported at a pressure less than 280 kPa at 20°C.".

Chapter 2.3

[2.3.1.2 Amend "61°C" to read "60°C".]

[2.3.2.5 First indent, amend "61°C" to read "60°C".]

[2.3.2.6 In the hazard grouping based on flammability table, amend "61" to read "60".]

Chapter 2.4

2.4.2.3.1.1.2 Amend to read as follows:

".2 they are oxidizing substances according to the classification procedure for class 5.1 (see 2.5.2.1.1) except that mixtures of oxidizing substances which contain 5.0% or more of combustible organic substances shall be subjected to the classification procedure defined in Note 3;".

Add a new NOTE 3 to read as follows:

"NOTE 3*: Mixtures of oxidizing substances meeting the criteria of class 5.1 which contain 5.0% or more of combustible organic substances, which do not meet the criteria mentioned in .1, .3, .4 or .5 above, shall be subjected to the self-reactive substance classification procedure.*

A mixture showing the properties of a self-reactive substance, type B to F, shall be classified as a self-reactive substance of class 4.1.

A mixture showing the properties of a self-reactive substance, type G, according to the principle of 2.4.2.3.3.2.7 shall be considered for classification as a substance of class 5.1 (see 2.5.2).".

2.4.2.3.2.3 Add the following new entry to the table:

UN generic entry	SELF-REACTIVE SUBSTANCE	Concen-tration (%)	Packing method	Control tempera-ture (°C)	Emergency temperature (°C)	Remarks
3228	ACETONE-PYROGALLOL COPOLYMER 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	100	OP8			

In remark (2) after the table, insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.4.2.3.3.2 .2 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.4.2.3.3.3 Delete.

[2.4.5 In the flowchart on classification of organometallic substances, amend “61ºC” to read “60ºC”.]

Chapter 2.5

2.5.3.3.2.2 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

2.5.3.3.3 Delete.

Chapter 2.6

2.6.2.2.4.1 Amend the table to read as follows:

Packing group	Oral toxicity LD_{50} (mg/kg)	Dermal toxicity LD_{50} (mg/kg)	Inhalation toxicity by dusts and mists LC_{50} (mg/l)
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III*	> 50 and ≤ 300	> 200 and ≤ 1000	> 2.0 and ≤ 4.0

2.6.3.1.3 Amend to read as follows:

"Cultures are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens as defined in 2.6.3.1.4.".

2.6.3.1.4 Add a new 2.6.3.1.4 to read as follows and renumber subsequent paragraphs accordingly:

"2.6.3.1.4 *Patient specimens* are human or animal materials, collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for

purposes such as research, diagnosis, investigational activities, disease treatment and prevention.".

2.6.3.2.1 Insert ", UN 3291" after "UN 2900".

2.6.3.2.2.1 In the first sentence, replace "disease to humans or animals" with "disease in otherwise healthy humans or animals".

In the Table with the indicative examples:

Under UN 2814:

- Replace "Hantaviruses causing hantavirus pulmonary syndrome" with "Hantavirus causing hemorragic fever with renal syndrome".

- Add "(cultures only)" after "Rabies virus", "Rift Valley fever virus" and "Venezuelan equine encephalitis virus".

Under UN 2900:

- Delete "African horse sickness virus" and "Bluetongue virus".

- Insert "Velogenic" before "Newcastle disease virus".

- Add "(cultures only)" after each microorganism in the list.

2.6.3.2.2.2 Delete "except that cultures, as defined in 2.6.3.1.3, shall be assigned to UN 2814 or UN 2900 as appropriate".

In the Note amend the proper shipping name to read: "BIOLOGICAL SUBSTANCE, CATEGORY B".

2.6.3.2.3 Renumber current 2.6.3.2.3 as 2.6.3.2.3.1 and add a new 2.6.3.2.3 to read as follows: "2.6.3.2.3 *Exemptions*".

Insert the following new sub-paragraphs:

"2.6.3.2.3.2 Substances containing microorganisms which are non-pathogenic to humans or animals are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.3 Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.4 Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.".

2.6.3.2.4 Current 2.6.3.2.4 becomes new 2.6.3.2.3.5. Amend the beginning of the paragraph to read as follows: "Dried blood spots, collected by applying a drop of blood onto

absorbent material, or faecal occult blood screening tests and blood or blood components…".

Current 2.6.3.2.5 Delete.

2.6.3.2.3.6 Add a new paragraph to read as follows:

"2.6.3.2.3.6 Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the provisions of this Code if the specimen is transported in a packaging which will prevent any leakage and which is marked with the words "Exempt human specimen" or "Exempt animal specimen", as appropriate. The packaging should meet the following conditions:

(a) The packaging should consist of three components:

(i) a leak-proof primary receptacle(s);

(ii) a leak-proof secondary packaging; and

(iii) an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm;

(b) For liquids, absorbent material in sufficient quantity to absorb the entire contents should be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material;

(c) When multiple fragile primary receptacles are placed in a single secondary packaging, they should be either individually wrapped or separated to prevent contact between them.

NOTE: *An element of professional judgment is required to determine if a substance is exempt under this paragraph. That judgment should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be transported under this paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals.*"

2.6.3.5.1 Delete "or containing Category B infectious substances in cultures" in the first sentence and ", other than in cultures, " in the last sentence.

2.6.3.6 Add the following new title:

"**2.6.3.6** ***Infected animals***"

2.6.3.6.1 Current 2.6.3.2.6 becomes new 2.6.3.6.1. In new 2.6.3.6.1 add the following new first sentence: "Unless an infectious substance cannot be consigned by any other means, live animals shall not be used to consign such a substance.".

2.6.3.6.2 Add a new 2.6.3.6.2 to read as follows:

"2.6.3.6.2 Animal carcasses affected by pathogens of category A or which would be assigned to Category A in cultures only, shall be assigned to UN 2814 or UN 2900 as appropriate.

Other animal carcasses affected by pathogens included in Category B shall be transported in accordance with provisions determined by the competent authority.".

Chapter 2.7

2.7.1.2 (e) Replace "the values specified in 2.7.7.2." with "the values specified in 2.7.7.2.1 (b), or calculated in accordance with 2.7.7.2.2 to 2.7.7.2.6.".

2.7.2 follows: In the definition of "*Multilateral approval*", amend the first sentence to read as

Multilateral approval means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable and also, where the consignment is to be transported through or into any other country, approval by the competent authority of that country.".

In the definition of "*Freight container in the case of radioactive material transport*", amend the end of the first sentence and the beginning of the current second sentence to read as follows: "…transport without intermediate reloading which is of a permanent enclosed character, …"."

In the definition of *"Specific activity of a radionuclide"*, delete: "or volume".

In the definition of "Natural Uranium" (under "Uranium-natural, depleted, enriched") replace "chemically separated uranium" with "uranium (which may be chemically separated)".

2.7.3.2 (a)(ii) Amend to read:"Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, providing they are unirradiated and in solid or liquid form;".

2.7.4.6 (a) Amend to read:

"(a) The tests prescribed in 2.7.4.5 (a) and 2.7.4.5 (b) provided the mass of the special form radioactive material

(i) is less than 200 g and they are alternatively subjected to the class 4 impact test prescribed in ISO 2919:1990 "Radiation protection - Sealed radioactive sources - General requirements and classification"; or

(ii) is less than 500 g and they are alternatively subjected to the class 5 impact test prescribed in ISO 2919:1990: "Sealed Radioactive Sources – Classification"; and".

2.7.7.1.7 Amend the beginning of the first sentence to read: "Unless excepted by 6.4.11.2, packages containing…".

2.7.7.1.8 Amend to read as follows:

"Packages containing uranium hexafluoride shall not contain:

(a) a mass of uranium hexafluoride different from that authorized for the package design;

(b) a mass of uranium hexafluoride greater than a value that would lead to an ullage smaller than 5 % at the maximum temperature of the package as specified for the plant systems where the package shall be used; or

(c) uranium hexafluoride other than in solid form or at an internal pressure above atmospheric pressure when presented for transport.".

2.7.7.2.1 In the table, amend the value in the last column for Te-121m to read "1×10^6" instead of "1×10^5".

Amend (a) and (b) after the table as follows:

"(a) A_1 and/or A_2 values for these parent radionuclides include contributions from daughter radionuclides with half-fives less than 10 days, as listed in the following:

Mg-28	Al-28
Ar-42	K-42
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96
Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110

Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m
Sn-121m	Sn-121
Sn-126	Sb-126m
Te-118	Sb-118
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I-135	Xe-135m
Xe-122	I-122
Cs-137	Ba-137m
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210
Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206
Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243

Bk-249	Am-245
Cf-253	Cm-249"

(b) Insert "Ag-108m Ag-108" after: "Ru-106 Rh-106".

Delete: "Ce-134, La-134"; "Rn-220, Po-216"; "Th-226, Ra-222, Rn-218, Po-214"; and "U-240, Np-240m".

2.7.7.2.2 In the first sentence, delete "competent authority approval, or for international transport," and amend the beginning of the second sentence to read as follows: "It is permissible to use an A_2 value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal…".

In the table:

- Amend the second entry in the first column to read: "Alpha emitting nuclides but no neutron emitters are known to be present"

- Amend the third entry in the first column to read: "Neutron emitting nuclides are known to be present or no relevant data are available".

2.7.8.4 (d) and (e) Add at the end: "except under the provisions of 2.7.8.5".

2.7.8.5 Add a new 2.7.8.5 to read:

"2.7.8.5 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, assignment to the category as required in 2.7.8.4 shall be in accordance with the certificate of the country of origin of design.".

2.7.9.7 Add a new paragraph 2.7.9.7 to read:

"2.7.9.7 The following provisions do not apply to excepted packages and the controls for transport of excepted packages: [2.7.4.1, 2.7.4.2, 4.1.9.1.3, 4.1.9.1.4, 5.1.3.2, 5.1.5.1.1, 5.1.5.1.2, 5.2.2.1.12.1, 5.4.1.5.7.1, 5.4.1.5.7.2, 5.4.1.6, 6.4.6.1.]".

Chapter 2.8

2.8.2.2 Amend the beginning of the last sentence to read as follows: "Liquids, and solids which may become liquid during transport, which are judged not to cause…" *(remainder of the sentence unchanged)*.

PART 3

Chapter 3.1

3.1.4.4 In the acids' list, amend the proper shipping names of UN 1779, UN 1848 and UN 2823 to read: "Formic acid with more than 85% acid by mass", "Propionic acid with not less than 10% and 90% by mass" and "Crotonic acid, solid" respectively. In the acids' list, add the following entries in proper order:

"3412 Formic acid with not less than 10% but not more than 85% acid by mass

3412 Formic acid with not less than 5% but not more than 10% acid by mass

3463 Propionic acid with not less than 90% acid by mass"

3472 Crotonic acid, liquid

Chapter 3.2

3.2.1 In the explanations for column (7), insert "or article" after "inner packaging" in the first sentence.

In the explanations for column (13), add the following text at the end: "The gases authorized for transport in MEGCs are indicated in the column "MEGC" in Tables 1 and 2 of packing instruction P200 in 4.1.4.1.".

Dangerous Goods List

Delete the entries for the following UN Nos.: 1014, 1015, 1979, 1980, 1981 and 2600 from the dangerous goods list.

For UN Nos. 1170, 1987 and 1993 insert "330" in column (6).

For UN 1263, add "TP27", "TP28" and "TP29" in column (14) for packing groups I, II and III, respectively.

For UN 3066, add "TP28" and "TP29" in column (14) for packing groups II and III, respectively.

For UN Nos. 1391, 1649 and 2030, in Column (6) replace "282", "162" and "298", respectively, with "329". For UN 1649, in column (15) insert "If flammable: F-E, S-D". For UN 2030, in column (15) insert "If flammable: F-E, S-C".

For UN Nos. 2758, 2760, 2762, 2764, 2772, 2776, 2778, 2780, 2782, 2784, 2787, 3021, 3024 and 3346, 3350 add "61" in column (6).

For UN Nos. 2912, 2915, 3321 and 3322, add "325" in column (6).

For UN Nos. 3101 to 3120, add "323" in column (6).

For UN Nos. 3324, 3325 and 3327, add "326" in column (6).

UN 1040 Insert “TP 90” in column (12).

UN 1143 Amend the name in column (2) to read as follows: "CROTONALDEHYDE or CROTONALDEHYDE, STABILIZED" and add "324" in column (6).

UN 1170 Delete "PP2" from column (9).

UN 1295 Insert “See 7.2.1.13.2” in column (16).

UN 1463 Add "6.1" before "8" in column (4).

UN 1733 Replace "1 L" with "1 kg" in column (7) and "P001" with "P002" in column (8).

UN 1733 Replace "IBC02" with "IBC08" in column (10) and add "B2, B4" in column (11), "T3" in column (13) and "TP33" in column (14). In column (17) delete the first sentence.

UN 1740 Amend the name in column (2) to read: "HYDROGENDIFLUORIDES, SOLID, N.O.S."

UN 1779 Amend the name in column (2), to read as follows: "FORMIC ACID with more than 85% acid by mass" and add "3" in column (4). In column (15) replace “F-A, S-B” with “F-E, S-C”. In column (17), first sentence, insert “flammable” between “colourless” and “liquid”. In column (17), add at the end “Pure FORMIC ACID: flashpoint 42°C c.c.”

UN 1818 Insert “See 7.2.1.13.2” in column (16).

UN 1848 Amend the name in column (2) to read as follows: "PROPIONIC ACID with not less than 10% and less than 90% acid by mass".

[UN 1950 Add "327" in column (6), "LP02" in column (8) and "PP87" and "L2" in column (9).]

UN 1956 Insert "292" in column (6).

UN 2014 Insert “See 7.2.1.13.2” in column (16).

UN 2015 Replace "T10" with "T9" in column (13) and replace “T9” with “-” in column (12).

UN 2030 In column (13), replace "T20" with "T10" for packing group I and "T15" with "T7" for packing group II, and in column (14), replace "TP2" with "TP1" for packing group III.

UN 2189 Insert “See 7.2.1.13.2” in column (16).

UN 2662 Delete this entry.

UN 2823 Amend the name in column (2) to read: "CROTONIC ACID, SOLID".

UN 2880 For packing group II: insert "322" in column (6);
For packing group III: replace "316" with "223", "313" and "314";

UN 2984 Insert “See 7.2.1.13.2” in column (16).

UN 3105 Insert “See 7.2.1.13.2” in column (16).
UN 3107 Insert “See 7.2.1.13.2” in column (16).

UN 3109 Insert “See 7.2.1.13.2” in column (16).

UN 3149 Insert “See 7.2.1.13.2” in column (16).

UN 3245 Amend the proper shipping name in column (2) to read as follows: "GENETICALLY MODIFIED MICROORGANISMS or GENETICALLY MODIFIED ORGANISMS".

UN 3373 Amend the proper shipping name in column (2) to read: "BIOLOGICAL SUBSTANCE, CATEGORY B" and add "T1" and "TP1" in columns (13) and (14), respectively. In column (17) amend existing text to read “ Substances which are known or are reasonably expected to contain pathogens, transported in a form that when exposure to it occurs, are not capable of causing permanent disability, life-threatening or fatal disease to humans or animals. Human or animal specimens for which there is minimal likelihood that pathogens are present, are not subject to the provisions of this Code (see 2.6.3.2.3.6). Other exemptions are stated in 2.6.3.2.3.”.

UN 3375 Amend the existing text in column (17) to read “Non sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. Substances shall satisfactorily pass Test Series 8 of the United Nations Manual of Tests and Criteria, Part I, Section 18 and be approved by the competent authority.".

UN 3435 Delete this entry.

Add the following new entries in the DGL and the Index as appropriate:

							Packing		IBC		Portable tanks and bulk containers						
UN No.	**Name and description**	**Class or division**	**Subsi-diary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3412	FORMIC ACID with not less than 10% but not more than 85% acid by mass	8		II		1 L	P001		IBC02			T7	TP2	F-A, S-B	Category A. Clear of living quarters.	Colourless liquid with a pungent odour. Corrosive to most metals. Causes burns to skin, eyes and mucous membranes.	3412
	FORMIC ACID with not less than 5% but less than 10% acid by mass	8		III		5 L	P001 LP01		IBC03			T4	TP1	F-A, S-B	Category A. Clear of living quarters.	See entry above.	3412
3463	PROPIONIC ACID with not less than 90% acid by mass	8	3	II		1 L	P001		IBC02			T7	TP2	F-E, S-C	Category A.	Colourless flammable liquid with a pungent odour. Miscible with water. Corrosive to lead and most other metals. Burns skin. Vapours irritate mucous membranes. Pure PROPIONIC ACID: flashpoint 50^{o}C c.c.	3463

							Packing		IBC		Portable tanks and bulk containers					
UN No.	**Name and description**	**Class or division**	**Subsi-diary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8 •	I	163	NONE	P001					T11	TP2 TP27	F-E, S-C	Category E. Clear of living quarters.	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3469
		3	8 •	II	163 944	1 L	P001		IBC02			T7	TP2 TP8 TP28	F-E, S-C	Category B. Clear of living quarters.	See entry above.	3469
		3	8 •	III	163 223 944	5 L	P001		IBC03			T4	TP1 TP29	F-E, S-C	Category A. Clear of living quarters.	See entry above.	3469

							Packing		IBC		Portable tanks and bulk containers					
UN No.	**Name and description**	**Class or division**	**Subsidiary risk(s)**	**Packing group**	**Special provisions**	**Limited quantities**	**Instructions**	**Provisions**	**Instruction**	**Provisions**	**IMO**	**UN**	**Provisions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3470	PAINT, CORROSIVE, FLAMMABLE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL CORROSIVE, FLAMMABLE (including paint thinning or reducing compound)	8	3 •	II	163 944	1 L	P001		IBC02			T7	TP2 TP8 TP28	F-E, S-C	Category B. Clear of living quarters.	Miscibility with water depends upon the composition. Corrosive contents cause burns to skin, eyes and mucous membranes.	3470

							Packing		IBC		Portable tanks and bulk containers					
UN No.	**Name and description**	**Class or division**	**Subsi-diary risk(s)**	**Packing group**	**Special provi-sions**	**Limited quanti-ties**	**Instruc-tions**	**Provi-sions**	**Instruc-tion**	**Provi-sions**	**IMO**	**UN**	**Provi-sions**	**EmS**	**Stowage and segregation**	**Properties and observations**	**UN No.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
3471	HYDROGENDIFLUORIDES SOLUTION, N.O.S.	8	6.1 •	II	944	1 L	P001		IBC02			T7	TP2	F-A, S-B	Category A. Shade from radiant heat. Clear of living quarters. “Separated from” acids.	When involved in a fire or in contact with acids, evolves hydrogen fluoride, an extremely irritating and corrosive gas. Corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.	3471
		8	6.1 •	III	223 944	5 L	P001		IBC03			T4	TP1	F-A, S-B	Category A. Shade from radiant heat. Clear of living quarters. “Separated from” acids.	See entry above.	3471
3472	CROTONIC ACID, LIQUID	8		III		5 L	P001 LP01		IBC03			T4	TP1	F-A, S-B	Category A. Keep as cool as reasonably practicable.	Causes burns to skin, eyes and mucous membranes.	3472
3473	FUEL CELL CARTRIDGES containing flammable liquids	3			328	1 L	P003	PP88						F-E, S-D	Category A.	Fuel cell cartridges containing flammable liquids including methanol or methanol/water solutions.	3473

Chapter 3.3

3.3.1 **SP133** Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

SP162 Delete.

SP181 Insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

SP204 Insert "(Model No.8, see 5.2.2.2.2)" after "risk label".

SP216 In the last sentence, insert "and articles" before "containing" and amend the end to read: "… free liquid in the packet or article.".

SP247 Amend the end of the first paragraph to read:

"…may be transported in wooden barrels with a capacity of more than 250 litres and not more than 500 litres meeting the general requirements of 4.1.1, as appropriate, on the following conditions:…".

Replace the word "casks" wherever it appears with "wooden barrels".

SP251 In the first sentence, add "for example" before "for medical," add "or repair" before "purposes". Replace “or” between “analytical” and “testing” with “,”.

SP282 Delete.

SP289 Amend as follows:
Replace "vehicles" and "vehicle" with "conveyances" and "conveyance", respectively.

SP292 Amend to read as follows:

"Mixtures containing not more than 23.5% oxygen by volume may be transported under this entry when no other oxidizing gases are present. A class 5.1 subsidiary risk label is not required for any concentrations within this limit.".

SP298 Delete.

SP303 Amend to read as follows:

"Receptacles shall be assigned to the class and, if any, subsidiary hazard of the gas or mixture of gases contained therein determined in accordance with the provisions of chapter 2.2.".

SP309 Amend to read as follows:

"This entry applies to non sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use.

The mixture for emulsions typically has the following composition: 60-85% ammonium nitrate, 5-30% water, 2-8% fuel, 0.5-4% emulsifier agent, 0-10% soluble

flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

The mixture for suspensions and gels typically has the following composition: 60-85% ammonium nitrate, 0-5% sodium or potassium perchlorate, 0-17% hexamine nitrate or monomethylamine nitrate, 5-30% water, 2-15% fuel, 0.5-4% thickening agent, 0-10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

Substances shall satisfactorily pass Test Series 8 of the United Nations Manual of Tests and Criteria, Part I, Section 18 and be approved by the competent authority.".

SP313 Insert "(Model No.8, see 5.2.2.2.2)" after "risk label".

SP316 Delete "or hydrated".

SP319 Delete the first sentence.

Add the following new special provisions:

"**322** When transported in non-friable tablet form, these goods are assigned to packing group III.

323 The label conforming to the model No.5.2(a) as in 5.2.2.2.2 may be used until 1 January 2011.

324 This substance needs to be stabilized when in concentrations of not more than 99%.

325 In the case of non-fissile or fissile excepted uranium hexafluoride, the material shall be classified under UN 2978.

326 In the case of fissile uranium hexafluoride, the material shall be classified under UN 2977.

[**327** Waste aerosols consigned in accordance with 5.4.1.4.3.3 may be transported under this entry for the purposes of reprocessing or disposal. They need not be protected against inadvertent discharge provided that measures to prevent dangerous build up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provision PP87, or packing instruction LP02 and special packing provision L2. Leaking or severely deformed aerosols shall be transported in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure. Waste aerosols shall not be transported in closed freight containers.]

328 This entry applies to fuel cell cartridges containing flammable liquids including methanol or methanol/water solutions. Fuel cell cartridge means a container that stores fuel for discharge into fuel cell powered equipment through a valve(s) that controls the discharge of fuel into such equipment and is free of electric charge generating components. The cartridge shall be designed and constructed to prevent the fuel from leaking during normal conditions of transport.

This entry applies to fuel cell cartridge design types shown without their packaging to pass an internal pressure test at a pressure of 100 kPa (gauge).

329 Where substances have a flashpoint of [60°C] [61°C] or less, the package(s) shall bear a "FLAMMABLE LIQUID" subsidiary risk label (Model No.3, see 5.2.2.2.2) in addition to the hazard label(s) required by this Code.

330 Alcohols containing petroleum products (e.g. gasoline) up to 5% shall be transported under the entry UN 1987 ALCOHOLS, N.O.S.

938 Delete.

Chapter 3.4

3.4.1 Insert a new sentence before the last sentence to read as follows:
"The provisions of chapter 1.4 do not apply to the transport of dangerous goods packed in limited quantities.".

Amend the beginning of the last sentence to read:
"All other provisions ….".

Amend 3.4.4.1 to read:

“3.4.4.1 Different dangerous goods in limited quantities may be packaged in the same outer packaging, provided:

.1 the goods do not interact dangerously and do not lead to:

.1 combustion and/or release of considerable heat;
.2 release of inflammable, toxic or asphyxiating gases;
.3 formation of corrosive substances; or
.4 formation of unstable substances,

and

.2 the segregation provisions of chapter 7.2, including the provisions in column (16) of the Dangerous Goods List, are taken into account. However, notwithstanding the individual provisions specified in the Dangerous Goods List, substances in packing group III within the same class may be stowed together subject to compliance with 3.4.4.1.1 of the IMDG Code. The following statement shall be included in the transport document: “Transport in accordance with 3.4.4.1.2 of the IMDG Code (see 5.4.1.5.2.2).”.

PART 4

Chapter 4.1

Renumber all references to renumbered paragraphs of chapters 6.1, 6.5 and 6.6, as appropriate.

4.1.1.5 Insert the following new second sentence:

"Inner packagings containing liquids shall be packaged with their closures upward and placed within outer packagings consistent with the orientation markings prescribed in 5.2.1.7 of this Code.".

4.1.1.5.1 Insert a new paragraph 4.1.1.5.1 with the same text as in existing 6.1.5.1.6 with the insertion of the words "or a large packaging" after "combination packaging" and the words "or large packaging" after "outer packaging" in the first sentence. Renumber the current 4.1.1.5.1 and 4.1.1.5.2 as 4.1.1.5.2 and 4.1.1.5.3 respectively.

4.1.1.8 Amend to read as follows:

"4.1.1.8 Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging or IBC may be fitted with a vent provided that the gas emitted will not cause danger on account of its toxicity, its flammability, the quantity released, etc.

A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that, when the packaging or IBC is in the attitude in which it is intended to be transported, leakages of liquid and the penetration of foreign substances are prevented under normal conditions of transport.

4.1.1.8.1 Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of transport.".

4.1.1.12 In the first sentence, replace ", including IBCs," with "as specified in chapter 6.1" and delete ", or 6.5.4.7 for the various types of IBCs".

Delete .3.

In the last paragraph, delete ", or IBC," in the first sentence and "or IBC" in the second sentence.

4.1.1.17.6 Add a new paragraph to read as follows:

"4.1.1.17.6 Appropriate measures shall be taken to ensure there is no dangerous build up of pressure.".

[4.1.2.1 Replace “61^{o}C” with “60^{o}C”.]

4.1.2.2 Replace the first sentence with the following paragraph:

"Every metal, rigid plastics and composite IBC, shall be inspected and tested, as relevant, in accordance with 6.5.1.6.4 or 6.5.1.6.5:

(a) before it is put into service;

(b) thereafter at intervals not exceeding two and a half and five years, as appropriate;

(c) after the repair or remanufacture, before it is re-used for transport."

Amend the second sentence to read “An IBC shall not be filled and offered for transport after the date of expiry of the last periodic test or inspection.".

4.1.3.6 Amend to read as follows:

"4.1.3.6 Pressure receptacles for liquids and solids

4.1.3.6.1 Unless otherwise indicated in this Code, pressure receptacles conforming to:

a) the applicable requirements of chapter 6.2 or

b) the National or International standards on the design, construction, testing, manufacturing and inspection, as applied by the country in which the pressure receptacles are manufactured, provided that the provisions of 4.1.3.6 and 6.2.3.3 are met,

are authorized for the transport of any liquid or solid substance other than explosives, thermally unstable substances, organic peroxides, self-reactive substances, substances where significant pressure may develop by evolution of chemical reaction and radioactive material (unless permitted in 4.1.9).

This sub-section is not applicable to the substances mentioned in 4.1.4.1, packing instruction P200, table 3.

4.1.3.6.2 Every design type of pressure receptacle shall be approved by the competent authority of the country of manufacture or as indicated in chapter 6.2.

4.1.3.6.3 Unless otherwise indicated, pressure receptacles having a minimum test pressure of 0.6 MPa shall be used.

4.1.3.6.4 Unless otherwise indicated, pressure receptacles may be provided with an emergency pressure relief device designed to avoid bursting in case of overfill or fire accidents.

Pressure receptacle valves shall be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or shall be protected from damage which could cause inadvertent release of the contents of the pressure receptacle, by one of the methods as given in 4.1.6.1.8 (.1) to (.5).

4.1.3.6.5 The level of filling shall not exceed 95% of the capacity of the pressure receptacle at 50 °C. Sufficient ullage (outage) shall be left to ensure that the pressure receptacle will not be liquid full at a temperature of 55 °C.

4.1.3.6.6 Unless otherwise indicated pressure receptacles shall be subjected to a periodic inspection and test every 5 years. The periodic inspection shall include an external examination, an internal examination or alternative method as approved by the competent authority, a pressure test or equivalent effective non-destructive testing with the agreement of the competent authority including an inspection of all accessories (e.g. tightness of valves, emergency relief valves of fusible elements). Pressure receptacles shall not be filled after they become due for periodic inspection and test but may be transported after the expiry of the time limit. Pressure receptacle repairs shall meet the requirements of 4.1.6.1.11.

4.1.3.6.7 Prior to filling, the filler shall perform an inspection of the pressure receptacle and ensure that the pressure receptacle is authorized for the substances to be transported and that the provisions of this Code have been met. Shut-off valves shall be closed after filling and remain closed during transport. The consignor shall verify that the closures and equipment are not leaking.

4.1.3.6.8 Refillable pressure receptacles shall not be filled with a substance different from that previously contained unless the necessary operations for change of service have been performed.

4.1.3.6.9 Marking of pressure receptacles for liquids and solids according to 4.1.3.6 (not conforming to the requirements of chapter 6.2) shall be in accordance with the requirements of the competent authority of the country of manufacturing.".

4.1.4.1 **P001** Insert a new row after "Composite packagings" to read as follows:
"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

Amend special packing provision PP2, to read as follows:

"**PP2** For UN 3065, wooden barrels with a maximum capacity of 250 litres and which do not meet the provisions of chapter 6.1 may be used.".

P002 Insert a new row after "Composite packagings" to read as follows:
"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

In special packing provision **PP37**, amend the second sentence to read as follows:
"All bags of any type shall be transported in closed cargo transport units or be placed in closed rigid overpacks.".

P003 Add the following new special packing provisions PP87 and PP88:

"[**PP87** For UN 1950 waste aerosols transported in accordance with special provision 327, the packagings shall have a means of retaining any free liquid that might escape during transport, e.g. absorbent material. The packaging shall be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure.]

PP88 For UN 3473 when fuel cell cartridges are packed with equipment, they shall be packed in inner packagings or placed in the outer packaging with cushioning material so that the cartridges are protected against damage that may be caused by the movement or placement of the equipment and the cartridges within the outer packaging.".

P200 In paragraph (3)(b), in the sentence preceding the first equation, replace "gases for which data are not provided in the table" with "gases and gas mixtures for which relevant data are not available".

In paragraph (3)(c), in the sentence before the equation, replace "gases for which filling data are not provided in the table" with "gases and gas mixtures for which relevant data are not available".

In paragraph (4), amend special provisions "k", "l", "n" and "z" as follows:

Special provision "k": Replace lines 4 to 8 with the following text:

" Bundles containing UN 1045 Fluorine, compressed, may be constructed with isolation valves on assemblies (groups) of cylinders not exceeding 150 litres total water capacity instead of isolation valves on every cylinder.

Cylinders and individual cylinders in a bundle shall have a test pressure greater than or equal to 200 bar and a minimum wall thickness of 3.5 mm for aluminium alloy or 2 mm for steel. Individual cylinders not complying with this requirement shall be transported in a rigid outer packaging that will adequately protect the cylinder and its fittings and meeting the packing group I performance level. Pressure drums shall have a minimum wall thickness as specified by the competent authority.".

Special provision "l": In the last sentence, replace "total quantity" with "maximum net mass".

Special provision "n": Amend to read as follows:
"Individual cylinders and assemblies of cylinders within a bundle shall contain not more than 5 kg of UN 1045 Fluorine compressed. Bundles containing UN 1045 Fluorine, compressed, may be divided in assemblies (groups) of cylinders not exceeding 150 litres total water capacity.".

Special provision “p”: Amend “porous mass” to read “porous material”.

Special provision "z": Amend the third paragraph to read as follows:
"Toxic substances with an LC_{50} less than or equal to 200 ml/m^3 shall not be transported in tubes, pressure drums or MEGCs and shall meet the requirements of special packing provision "k". However, UN 1975 Nitric oxide and dinitrogen tetroxide mixture may be transported in pressure drums.".

In Tables 1 and 2, delete the entries for the following UN Nos.: 1014, 1015, 1979, 1980, 1981 and 2600.
In Table 1, in the heading of column 13 and in the footnote, replace "Working pressure" with "Maximum working pressure"

In Table 2:

- For UN Nos. 2192 and 2199, add "q" (twice for UN No. 2199) in the column under the heading "Special packing provisions".

- For UN 2451, delete "300" and "0.75" in the columns for "Test pressure" and "Filling ratio", respectively.

In Table 3: add a cross in the column "Pressure drums" for UN Nos. 1745, 1746 and 2495.

P400 (1) Amend to read as follows:
"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be made of steel and shall be subjected to an initial test and periodic tests every 10 years at a pressure of not less than 1MPa (10 bar, gauge

pressure). During carriage, the liquid shall be under a layer of inert gas with a gauge pressure of not less than 20 kPa (0.2 bar).".

P401 (1) and P402 (1) Amend to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be made of steel and subjected to an initial test and periodic tests every 10 years at a pressure of not less than 0.6MPa (6 bar, gauge pressure). During carriage, the liquid shall be under a layer of inert gas with a gauge pressure of not less than 20 kPa (0.2 bar).".

P403, P404 and P410 Insert a new row after "Composite packagings" to read as follows:

"Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

P520 Under "Additional provisions" in "4", insert "(Model No.1, see 5.2.2.2.2)" after "risk label".

P601 and P602 Amend paragraph (1) to read as follows:

"(1) Combination packagings with a maximum gross mass of 15 kg, consisting of

- one or more glass inner packaging(s) with a maximum quantity of 1 litre each and filled to not more than 90% of their capacity; the closure(s) of which shall be physically held in place by any means capable of preventing back-off or loosening by impact or vibration during transport, individually placed in
- metal receptacles together with cushioning and absorbent material sufficient to absorb the entire contents of the glass inner packaging(s), further packed in
- 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings.".

Amend paragraph (4) to read as follows:

"(4) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met. They shall be subjected to an initial test and periodic tests every 10 years at a pressure of not less than 1MPa (10 bar) (gauge pressure). Pressure receptacles may not be equipped with any pressure relief device. Each pressure receptacle containing a toxic by inhalation liquid with an LC_{50} less than or equal to 200 ml/m^3 (ppm) shall be closed with a plug or valve conforming to the following:

(a) Each plug or valve shall have a taper-threaded connection directly to the pressure receptacle and be capable of withstanding the test pressure of the pressure receptacle without damage or leakage;

(b) Each valve shall be of the packless type with non-perforated diaphragm, except that, for corrosive materials, a valve may be of the packed type with an assembly made gas-tight by means of a seal cap with gasket joint attached to the valve body or the pressure receptacle to prevent loss of material through or past the packing;

(c) Each valve outlet shall be sealed by a threaded cap or threaded solid plug and inert gasket material;

(d) The materials of construction for the pressure receptacle, valves, plugs, outlet caps, luting and gaskets shall be compatible with each other and with the lading.

Each pressure receptacle with a wall thickness at any point of less than 2.0 mm and each pressure receptacle that does not have fitted valve protection shall be transported in an outer packaging. Pressure receptacles shall not be manifolded or interconnected.".

P650 Amend paragraph (2) to read as follows:

"(2) The packaging shall consist of at least three components:

(a) a primary receptacle;

(b) a secondary packaging; and

(c) a outer packaging

of which either the secondary or the outer packaging shall be rigid."

In paragraph (4):

Amend the second sentence to read as follows: "The mark shall be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm, the width of the line shall be at least 2 mm and the letters and numbers shall be at least 6 mm high.".

Add the following new third sentence: "The proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B" in letters at least 6 mm high shall be marked on the outer package adjacent to the diamond-shaped mark.".

Insert a new paragraph (5) to read as follows and renumber subsequent paragraphs accordingly:

"(5) At least one surface of the outer packaging shall have a minimum dimension of 100 mm × 100 mm.".

Amend current paragraph (5) (renumbered (6)) to read as follows:

"(6) The completed package shall be capable of successfully passing the drop test in 6.3.2.5 as specified in 6.3.2.2 to 6.3.2.4 of this Code at a height of 1.2 m. Following the appropriate drop sequence, there shall be no leakage from the primary receptacle(s) which shall remain protected by absorbent material, when required, in the secondary packaging.".

In (7) (renumbered (8)), add a new sub-paragraph (d) to read as follows:

"(d) If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during transport then a packaging suitable for liquids, including absorbent materials, shall be used.".

Insert a new paragraph (10) to read as follows and renumber subsequent paragraphs accordingly:

"(10) When packages are placed in an overpack, the package markings required by this packing instruction shall either be clearly visible or be reproduced on the outside of the overpack.".

Add a new paragraph (13) to read as follows:

"(13) Other dangerous goods shall not be packed in the same packaging as class 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3, 8 or 9 may be packed in each primary receptacle containing infectious substances. When these small quantities of dangerous goods are packed with infectious substances in accordance with this packing instruction no other provisions of the Code need be met.".

P800 Amend paragraph (1) to read as follows:
"(1) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

P802 In paragraph (4), delete "Austenitic".

Amend paragraph (5) to read as follows:

"(5) Pressure receptacles may be used provided that the general provisions of 4.1.3.6 are met.".

[4.1.4.3 **LP02** Add a new special packing provision "L2" to read as follows:

"**L2** For UN 1950 aerosols, the large packaging shall meet the packing group III performance level. Large packagings for waste aerosols transported in accordance with special provision 327 shall have in addition a means of retaining any free liquid that might escape during transport e.g. absorbent material.".]

4.1.6.1.2 Amend “porous mass” to read “porous material” (twice).

4.1.9.1.3 Amend to read:

"A package shall not contain any items other than those that are necessary for the use of the radioactive material. The interaction between these items and the package under the conditions of transport applicable to the design, shall not reduce the safety of the package.".

4.1.9.2.2 Amend to read: "For LSA material and SCO which is or contains fissile material the applicable provisions of 6.4.11.1, 7.2.9.4 and 7.2.9.5 shall be met.".

Chapter 4.2

4.2.1.15 Add a new 4.2.1.15 to read as follows:

"4.2.1.15 Additional provisions applicable to the transport of class 6.2 substances in portable tanks

(Reserved).".

Renumber subsequent paragraphs accordingly.

4.2.5.1.1 Add a note at the end of the paragraph to read as follows:

"**NOTE**: The gases authorized for transport in MEGCs are indicated in the column "MEGC" in Tables 1 and 2 of packing instruction P200 in 4.1.4.1.".

4.2.5.3 In TP4, replace “4.2.1.15.2” with “4.2.1.16.2”. In TP33 replace “4.2.1.18” with “4.2.1.19”.

Add a new “TP 90” to read “ A portable tank having openings below liquid may also be used”

Chapter 4.3

4.3.2.4 Amend 4.3.2.4 to read: "**4.3.2.4 Bulk waste goods of class 6.2 (UN Nos. 2814 and 2900 (animal carcasses only))**".

4.3.2.4.1
4.3.2.4.1.2
4.3.2.4.1.3 Replace "UN 2900" with "UN 2814 and 2900".

4.3.2.4.2 Add a new paragraph 4.3.2.4.2 to read as follows:

"4.3.2.4.2 Bulk wastes of class 6.2 (UN 3291)

(a) Only closed bulk containers (BK2) shall be permitted;

(b) Closed bulk containers, and their openings, shall be leakproof by design. These bulk containers shall have non porous interior surfaces and shall be free from cracks or other features that could damage packagings inside, impede disinfection or permit inadvertent release;

(c) Wastes of UN 3291 shall be contained within the closed bulk container in UN type tested and approved sealed leakproof plastics bags tested for solids of packing group II and marked in accordance with 6.1.3.1. Such plastics bags shall be capable of passing the tests for tear and impact resistance according to ISO 7765-1:1988 "Plastics film and sheeting. Determination of impact resistance by the free-falling dart method. Part 1: Staircase methods" and ISO 6383-2:1983 "Plastics. Film and sheeting. Determination of tear resistance. Part 2: Elmendorf method". Each bag shall have an impact resistance of at least 165 g and a tear resistance of at least 480 g in both

parallel and perpendicular planes with respect to the length of the bag. The maximum net mass of each plastics bag shall be 30 kg;

(d) Single articles exceeding 30 kg such as soiled mattresses may be transported without the need for a plastics bag when authorized by the competent authority;

(e) Wastes of UN 3291 which contain liquids shall only be transported in plastics bags containing sufficient absorbent material to absorb the entire amount of liquid without it spilling in the bulk container;

(f) Wastes of UN 3291 containing sharp objects shall only be transported in UN type tested and approved rigid packagings meeting the provisions of packing instructions P621, IBC620 or LP621.

(g) Rigid packagings specified in packing instructions P621, IBC620 or LP621 may also be used. They shall be properly secured to prevent damage during normal conditions of transport. Wastes transported in rigid packagings and plastics bags together in the same closed bulk container shall be adequately segregated from each other, e.g. by suitable rigid barriers or dividers, mesh nets or otherwise securing the packagings, such that they prevent damage to the packagings during normal conditions of transport;

(h) Wastes of UN 3291 in plastics bags shall not be compressed in a closed bulk container in such a way that bags may be rendered no longer leakproof;

(i) The closed bulk container shall be inspected for leakage or spillage after each journey. If any wastes of UN 3291 have leaked or been spilled in the closed bulk container, it shall not be re-used until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated with an appropriate agent. No other goods shall be transported together with UN 3291 other than medical or veterinary wastes. Any such other wastes transported in the same closed bulk container shall be inspected for possible contamination.".

PART 5

Chapter 5.1

5.1.2.3 Add a new paragraph to read as follows:

"5.1.2.3 Each package bearing package orientation markings as prescribed in 5.2.1.7 of this Code and which is overpacked, placed in a unit load or used as an inner packaging in a large packaging shall be oriented in accordance with such markings.".

5.1.5.1.2.3 Amend to read:

"For each package requiring competent authority approval, it shall be ensured that all the requirements specified in the approval certificates have been satisfied;".

5.1.5.2.2.3 Amend to read:

"The shipment of packages containing fissile materials if the sum of the criticality safety indexes of the packages in a single freight container or in a single conveyance exceeds 50. Excluded from this requirement shall be shipments by seagoing vessels, if the sum of the criticality safety indexes does not exceed 50 for any hold, compartment or defined deck area and the distance of 6 m between groups of packages or overpacks as required in table 7.1.8.4.2 is met; and".

5.1.5.2.4.4.5 Insert "symbol" after "SI prefix".

Chapter 5.2

5.2.1.4 and 5.2.2.1.7 Add "and large packagings" after "capacity".

5.2.1.5.4.3 Amend the end of the sentence to read as follows: "…origin of design and either the name of the manufacturer or other identification of the packaging specified by the competent authority of the country of origin of design.".

5.2.1.5.8 Add the following new paragraph:

"5.2.1.5.8 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned, marking shall be in accordance with the certificate of the country of origin of the design.".

5.2.1.7 Add the following new paragraphs:

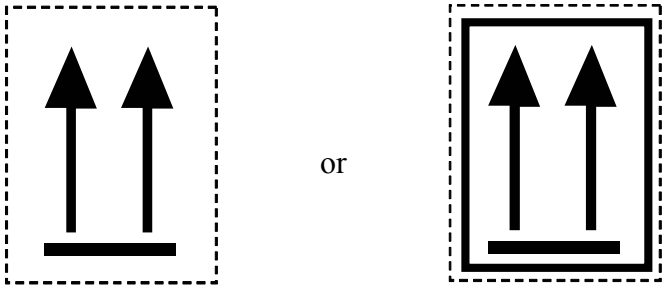
"5.2.1.7 Except as provided in 5.2.1.7.1:

- combination packagings having inner packagings containing liquid dangerous goods;

- single packagings fitted with vents; and

- open cryogenic receptacles intended for the transport of refrigerated liquefied gases,

shall be legibly marked with package orientation arrows which are similar to the illustration shown below or with those meeting the specifications of ISO 780:1985. The orientation arrows shall appear on two opposite vertical sides of the package with the arrows pointing in the correct upright direction. They shall be rectangular and of a size that is clearly visible commensurate with the size of the package. Depicting a rectangular border around the arrows is optional.



Two black or red arrows on white or suitable contrasting background. The rectangular border is optional

5.2.1.7.1 Orientation arrows are not required on packages containing:

(a) pressure receptacles;

(b) dangerous goods in inner packagings of not more than 120 ml which are prepared with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents;

(c) class 6.2 infectious substances in primary receptacles of not more than 50 ml;

(d) class 7 radioactive material in Type B(U), B(M) or C packages; or

(e) articles which are leak-tight in all orientations (e.g. alcohol or mercury in thermometers, aerosols, etc.).

5.2.1.7.2 Arrows for purposes other than indicating proper package orientation shall not be displayed on a package marked in accordance with this sub-section.".

5.2.2.1.2 Amend to read as follows:
"Where articles or substances are specifically listed in the Dangerous Goods List, a danger class label shall be affixed for the hazard shown in column 3. A subsidiary risk label shall also be affixed for any risk indicated by a class or division number in column 4 of the Dangerous Goods List. However, special provisions indicated in column 6 may also require a subsidiary risk label where no subsidiary risk is indicated in column 4 or may exempt from the requirement for a subsidiary risk label where such a risk is indicated in the Dangerous Goods List."

5.2.2.1.12.2.2 Insert "symbol" after "SI prefix".

5.2.2.1.12.5 Add the following new paragraph:

"5.2.2.1.12.5 In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, labelling shall be in accordance with the certificate of the country of origin of design.".

5.2.2.1.13 Delete.

5.2.2.2.1 Add the following note at the end of the existing text:

"***NOTE***: *Where appropriate, labels in 5.2.2.2.2 are shown with a dotted outer boundary as provided for in 5.2.2.2.1.1. This is not required when the label is applied on a background of contrasting colour.".*

5.2.2.2.1.1 Add the following sentence at the end: "Labels shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.".

5.2.2.2.2 In the labels for class 5:

Replace the text under label No. 5.1 with the following:

"(No. 5.1)
Class 5.1
Oxidizing substances
Symbol (flame over circle): black; Background: yellow
Figure "5.1" in bottom corner"

Retain the existing label No. 5.2 and replace the text below it by

"(No. 5.2(a)*)
Class 5.2
Organic peroxides
Symbol (flame over circle): black; Background: yellow
Figure "5.2" in bottom corner"

and add a footnote to read "* May be used until 1 January 2011.".

Add label No.5.2(b) and the text under the label with the following:

"(No. 5.2(b))
Class 5.2
Organic peroxides
Symbol (flame): black or white;
Background: upper half red; lower half yellow;
Figure "5.2" in bottom corner".

Chapter 5.3

5.3.1.1.2 Add the following sentence at the end: "Placards shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.".

5.3.1.1.3 Amend the first sentence to read as follows:
"Placards shall also be displayed for those subsidiary risks for which a subsidiary risk label is required according to 5.2.2.1.2."

Chapter 5.4

5.4.1.4.1 Replace current .2 and .3 with the following:

".2 The proper shipping name, as determined according to 3.1.2, including the technical name enclosed in parenthesis, as applicable (see 3.1.2.8);

.3 The primary hazard class or, when assigned, the division of the goods, including for Class 1, the compatibility group letter. The words "Class" or "Division" may be included preceding the primary hazard class or division numbers;".

Insert a new .4 to read as follows:

".4 Subsidiary hazard class or division number(s) corresponding to the subsidiary risk label(s) required to be applied, when assigned, shall be entered following the primary hazard class or division and shall be enclosed in parenthesis. The words "Class" or "Division" may be included preceding the subsidiary hazard class or division numbers;".

Current ".4" becomes new ".5".

5.4.1.4.2 Amend the first paragraph and the examples to read as follows:

"The five elements of the dangerous goods description specified in 5.4.1.4.1 shall be shown in the order listed above (i.e. .1, .2, .3, .4, .5) with no information interspersed, except as provided in this Code.

[5.4.1.4.3.6 Amend “61^{o}C” to read “60^{o}C”.]

5.4.1.4.4 Amend to read:

“5.4.1.4.4 Examples of a dangerous goods description:

UN1098 ALLYL ALCOHOL 6.1 (3) I (21^{o}C c.c.)
UN1098, ALLYL ALCOHOL, class 6.1, (class 3), PG I, (21^{o}C c.c.)
UN 1779, Formic Acid, class 8 (3), PG II, (59^{o}C c.c)
UN 1092, Acrolein, stabilized, class 6.1 (3), PG I, (-24^{o}C c.c.) MARINE POLLUTANT
UN 2761, Organochlorine pesticide, solid, toxic (Aldrin 19%), class 6.1, PG III, MARINE POLLUTANT"

5.4.1.5.1 In the current last but one sentence, replace "packagings" with "packages" and insert the following sentence before the last sentence: "UN packaging codes may only be used to supplement the description of the kind of package (e.g. one box (4G)).".

5.4.1.5.2 Number the first paragraph as “5.4.1.5.2.1”.

5.4.1.5.2.2 Add a new paragraph to read:

“5.4.1.5.2.2 Where a shipment is offered in accordance with 3.4.4.1.2, the following statement shall be included in the transport document: “Transport in accordance with 3.4.4.1.2 of the IMDG Code.”.

5.4.1.5.7.1.3 Insert "symbol" after "SI prefix".

5.4.1.5.7.3 Insert the following new paragraph:

"5.4.1.5.7.3 In case of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned, the UN number and proper shipping name required in 5.4.1.4.1 shall be in accordance with the certificate of the country of origin of design.".

Renumber existing 5.4.1.5.7.3 as 5.4.1.5.7.4.

5.4.1.5.11 Amend the heading of 5.4.1.5.11 to read:

“**5.4.1.5.11 Special provisions for segregation**”

5.4.1.5.11 Number the first paragraph as “5.4.1.5.11.1”.

5.4.1.5.11.2 Add a new paragraph to read:

“5.4.1.5.11.2 When substances are loaded together in a cargo transport unit in accordance with 7.2.1.13.2 , the following statement shall be included in the transport document: “Transport in accordance with 7.2.1.13.2 of the IMDG Code.”.

PART 6

Chapter 6.1

6.1.2.5 Under 2., replace "wooden barrel" with "[Reserved]".

6.1.2.7 In the table, replace the text in the row for "Wooden barrels" with "[Reserved]".

6.1.4.6 Amend to read: "6.1.4.6 *(Deleted)*".

6.1.5.1.6 Replace current text with the following:

"6.1.5.1.6 [Reserved]

NOTE*: For the conditions for assembling different inner packagings in an outer packaging and permissible variations in inner packagings, see 4.1.1.5.1.*".

6.1.5.2.4 Delete. Renumber next paragraph accordingly.

6.1.5.3.1 In the table, delete "wooden barrels" under "Packaging".

Chapter 6.2

6.2.1.3.6.5.4 Amend the footnote to read as follows:

" * *See for example CGA Publications S-1.2-2003 "Pressure Relief Device Standards - Part 2 - Cargo and Portable Tanks for Compressed Gases" and S-1.1-2003 "Pressure Relief Device Standards - Part 1 - Cylinders for Compressed Gases".*".

6.2.1.4.1.10 Amend “porous mass” to read “porous material”.

6.2.1.5.1 Amend subparagraph .3 to read as follows:

".3 Check of the threads if there is evidence of corrosion or if the fittings are removed;"

Amend the end of Note 2 under subparagraph .4 to read as follows:

"*… based on acoustic emission testing, ultrasonic examination or a combination of acoustic emission testing and ultrasonic examination*.".

6.2.1.5.2 Amend “porous mass” to read “porous material”.

6.2.2.1.1 Insert the following new entry at the end of the table:

ISO 11119-3:2002	Gas cylinders of composite construction - Specification and test methods - Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-load-sharing metallic or non-metallic liners

6.2.2.1.3 In the table, under "For the cylinder shell:", delete the reference to ISO 7866:1999. Amend “porous mass” to read “porous material”.

6.2.2.1.4 Add a new paragraph to read as follows:

"6.2.2.1.4 The following standard applies for the design, construction and initial inspection and test of UN cryogenic receptacles, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:

ISO 21029-1:2004	Cryogenic vessels – Transportable vacuum insulated vessels of not more than 1000 l volume – Part 1: Design, fabrication, inspection and tests

6.2.2.5.3.1 In .1, insert "of personnel" after "responsibilities" and delete ", and power of the management". Delete the “,” and insert “and” between “structure” and “responsibilities”.

In .2, replace "systematic actions" with "procedures".

Delete the commas before "and" in .3 and .4.

6.2.2.5.4.10 Amend to read as follows:

"6.2.2.5.4.10 Modifications to approved design types

The manufacturer shall either:

(a) inform the issuing competent authority of modifications to the approved design type, where such modifications do not constitute a new design, as specified in the pressure receptacle standard; or

(b) request a subsequent design type approval where such modifications constitute a new design according to the relevant pressure receptacle standard. This additional approval shall be given in the form of an amendment to the original design type approval certificate.".

6.2.2.7.2 In (g) add the following new last sentence at the end of the existing text:

"In the case of pressure receptacles for UN 1001 acetylene, dissolved and UN 3374 acetylene, solvent free, at least one decimal shall be shown after the decimal point and two digits for pressure receptacles of less than 1 kg;".

In (k) and (l): Insert ", any coating," after "during filling" and replace "two" with "three" in the first sentence. Insert the following new last sentence at the end of the existing text:

"At least one decimal shall be shown after the decimal point. For pressure receptacles of less than 1 kg, the mass shall be expressed to two significant figures rounded down to the last digit;".

6.2.2.7.2 (g), (k) and (l) Amend "porous mass" to read "porous material".

6.2.2.7.7 Add the following new paragraph:

"6.2.2.7.7 For acetylene cylinders, with the agreement of the competent authority, the date of the most recent periodic inspection and the stamp of the body performing the periodic inspection and test may be engraved on a ring held on the cylinder by the valve. The ring shall be configured so that it can only be removed by disconnecting the valve from the cylinder.".

6.2.4 Renumber current paragraphs 6.2.4.1 and 6.2.4.2 as 6.2.4.1.1 and 6.2.4.1.2 respectively and insert a new 6.2.4.1 to read as follows:

"6.2.4.1 *Small receptacles containing gas (gas cartridges)"*

Add the following new paragraphs:

"6.2.4.2 *Aerosol dispensers*

Each filled aerosol dispenser shall be subjected to a test performed in a hot water bath or an approved water bath alternative.

6.2.4.2.1 *Hot water bath test*

6.2.4.2.1.1 The temperature of the water bath and the duration of the test shall be such that the internal pressure reaches that which would be reached at 55 °C (50 °C if the liquid phase does not exceed 95% of the capacity of the aerosol dispenser at 50 °C). If the contents are sensitive to heat or if the aerosol dispensers are made of plastics material which softens at this test temperature, the temperature of the bath shall be set at between 20 °C and 30 °C but, in addition, one aerosol dispenser in 2000 shall be tested at the higher temperature.

6.2.4.2.1.2 No leakage or permanent deformation of an aerosol dispenser may occur, except that a plastic aerosol dispenser may be deformed through softening provided that it does not leak.

6.2.4.2.2 *Alternative methods*

With the approval of the competent authority alternative methods which provide an equivalent level of safety may be used provided that the requirements of 6.2.4.2.2.1, 6.2.4.2.2.2 and 6.2.4.2.2.3 are met.

6.2.4.2.2.1 Quality system

Aerosol dispenser fillers and component manufacturers shall have a quality system. The quality system shall implement procedures to ensure that all aerosol dispensers that leak or that are deformed are rejected and not offered for transport.

The quality system shall include:

(a) a description of the organizational structure and responsibilities;

(b) the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;

(c) quality records, such as inspection reports, test data, calibration data and certificates;

(d) management reviews to ensure the effective operation of the quality system;

(e) a process for control of documents and their revision;

(f) a means for control of non-conforming aerosol dispensers;

(g) training programmes and qualification procedures for relevant personnel; and

(h) procedures to ensure that there is no damage to the final product.

An initial audit and periodic audits shall be conducted to the satisfaction of the competent authority. These audits shall ensure the approved system is and remains adequate and efficient. Any proposed changes to the approved system shall be notified to the competent authority in advance.

6.2.4.2.2.2 Pressure and leak testing of aerosol dispensers before filling

Every empty aerosol dispenser shall be subjected to a pressure equal to or in excess of the maximum expected in the filled aerosol dispensers at 55 °C (50 °C if the liquid phase does not exceed 95% of the capacity of the receptacle at 50 °C). This shall be at least two-thirds of the design pressure of the aerosol dispenser. If any aerosol dispenser shows evidence of leakage at a rate equal to or greater than 3.3×10^{-2} mbar.l.s^{-1} at the test pressure, distortion or other defect, it shall be rejected.

6.2.4.2.2.3 Testing of the aerosol dispensers after filling

Prior to filling, the filler shall ensure that the crimping equipment is set appropriately and the specified propellant is used.

Each filled aerosol dispenser shall be weighed and leak tested. The leak detection equipment shall be sufficiently sensitive to detect at least a leak rate of 2.0×10^{-3} mbar.l.s^{-1} at 20 °C.

Any filled aerosol dispenser which shows evidence of leakage, deformation or excessive weight shall be rejected.".

6.2.4.3 Add a new paragraph to read as follows:

"6.2.4.3 With the approval of the competent authority, aerosols and receptacles, small, containing pharmaceutical products and non flammable gases which are required to be sterile, but may be adversely affected by water bath testing, are not subject to 6.2.4.1 and 6.2.4.2 if:

(a) They are manufactured under the authority of a national health administration and, if required by the competent authority, follow the principles of Good

Manufacturing Practice (GMP) established by the World Health Organization (WHO)[2]; and

(b) An equivalent level of safety is achieved by the manufacturer's use of alternative methods for leak detection and pressure resistance, such as helium detection and water bathing a statistical sample of at least 1 in 2000 from each production batch.".

Chapter 6.4

6.4.5.2.2 Amend to read as follows:

".2 more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.1.3(ii) Amend to read “more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.2.3 Amend to read “more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.4.3.2 Amend to read “more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.5.4.5.2.2 Amend to read “more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.7.14(b) Amend to read “more than a 20% increase in the maximum radiation level at any external surface of the package.".

6.4.7.16 In the first sentence, replace "liquids" with "liquid radioactive material".

6.4.8.3 In the first sentence, delete "Except as required in 6.4.3.1 for a package transported by air," and replace "6.4.8.4," with "6.4.8.5 and in the absence of insolation,".

6.4.8.4 The text of current 6.4.8.13 becomes new 6.4.8.4, with the following amendments:

In the first sentence, insert "under exclusive use" before "shall not exceed 85 °C" and replace "6.4.8.4" with "6.4.8.5". Delete the second sentence: ("The package shall… exceeds 50 °C.").

6.4.8.4 to 6.4.8.12 Renumber as 6.4.8.5 to 6.4.8.13. Amend all cross-references accordingly.

6.4.11.2.1 Amend the end of the sentence after the formula to read: "provided that the smallest external dimension of each package is not less than 10 cm and that either:".

Amend .3 to read as follows:
".3 there are not more than 5 g of fissile material in any 10 litre volume of material. Neither beryllium nor deuterium shall be present in quantities exceeding 1%

[2] *WHO Publication: "Quality assurance of pharmaceuticals. A compendium of guidelines and related materials. Volume 2: Good manufacturing practices and inspection".*

of the applicable consignment mass limits provided in Table 6.4.11.2, except for deuterium in natural concentration in hydrogen.".

6.4.11.7 (b) Amend the first sentence to read as follows: "For packages containing uranium hexafluoride only, with maximum enrichment of 5 mass percent uranium-235:".

6.4.22.1 (a) and (b) Amend to read as follows:

"(a) Each design that meets the provisions of 6.4.6.4 shall require multilateral approval;

(b) Each design that meets the provisions of 6.4.6.1 to 6.4.6.3 shall require unilateral approval by the competent authority of the country of origin of the design, unless multilateral approval is otherwise required by this Code.".

6.4.23.3 (a) Replace "the consignment" with "the shipment".

6.4.23.14 Insert a new paragraph (m) to read as follows:
"(m) A description of the containment system;"
Renumber current sub-paragraphs (m) and (n) accordingly.

Under (n), insert a new sub-paragraph (ii) to read as follows:
"(ii) A description of the confinement system;".
Renumber current sub-paragraphs (ii) to (vi) accordingly.

Insert a new sub-paragraph (p) to read as follows:
"(p) For packages containing more than 0.1 kg of uranium hexafluoride, a statement specifying those prescriptions of 6.4.6.4 that apply if any and any amplifying information which may be useful to other competent authorities.".
Renumber current sub-paragraphs (o) to (u) accordingly.

6.4.23.15 Delete the last sentence.

6.4.24.3 In the first sentence, delete "until 31 December 2003" and insert "the multilateral approval of package design;" before "the mandatory programme of quality assurance".

Delete the sentence: "After this date use may continue subject, additionally, to multilateral approval of package design.".

Chapter 6.5

6.5.1 Amend the title to read "**General requirements**".

6.5.1.5 Delete “6.5.1.5 Construction provisions”.

6.5.1.5.9 Delete.

Section 6.5.3 Insert a new section 6.5.3 as follows:

6.5.3 and 6.5.3.1 Insert two new paragraphs to read as follows:

"**6.5.3 Construction requirements**

6.5.3.1 ***General requirements***"

6.5.3.1.1 to 6.5.3.1.8: Existing 6.5.1.5.1 to 6.5.1.5.8 become new paragraphs 6.5.3.1.1 to 6.5.3.1.8.

Section 6.5.4 Text of existing 6.5.1.6 with appropriate renumbering of paragraphs, sub-paragraphs and references to paragraphs numbers, becomes text of new sub-section 6.5.4, as follows:

6.5.4 Heading of existing 6.5.1.6.

6.5.4.1 Text of existing 6.5.1.6.1.

6.5.4.2 Text of existing 6.5.1.6.2 with the following modifications:

Replace "periodic tests" with "periodic inspections and tests" and "6.5.4.14" with "6.5.4.4" respectively.

6.5.4.3 Text of existing 6.5.1.6.3.

6.5.4.4 Text of existing 6.5.1.6.4 with the following modifications:

In the first paragraph, replace "Inspection:" with the heading "Inspection and testing" and add a new NOTE after the heading to read as follows:

"NOTE: See also 6.5.4.5 for tests and inspections on repaired IBCs.".

The text beginning with "every metal, rigid plastics…" and sub-paragraphs (a) and (b) become new 6.5.4.4.1 with the following modifications:

In (a), insert "(including after remanufactured)" after "put into service".

Insert a new sentence, after the last sentence of sub-paragraph (b) (ii) ("Thermal insulation, … body of the IBC."), to read as follows: "Each IBC shall correspond in all respects to its design type.".

Insert a new paragraph 6.5.4.4.2 as follows:
"6.5.4.4.2 Every metal, rigid plastics and composite IBC for liquids, or for solids which are filled or discharged under pressure, shall undergo a suitable leakproofness test and be capable of meeting the test level indicated in 6.5.6.7.3:

(a) before it is first used for transport;

(b) at intervals of not more than two and a half years.

For this test the IBC need not have its closures fitted. The inner receptacle of a composite IBC may be tested without the outer casing, provided the test results are not affected.".

The last paragraph of existing 6.5.1.6.4 ("A report of each inspection … requirements in 6.5.2.2.1).") becomes new 6.5.4.4.3 with the following modifications:

In the first sentence, add "and test" after "each inspection" and "or test" after "next inspection" respectively.

In the second sentence, add "and test" after "inspection" twice.

6.5.4.5 Title of existing 6.5.1.6.6.

6.5.4.5.1 Text of existing 6.5.1.6.5.

6.5.4.5.2 Text of existing 6.5.1.6.6.1. Replace "6.5.4.14.3 and 6.5.1.6.5 (a)" with "6.5.4.4".

6.5.4.5.3 Text of existing 6.5.1.6.6.2.

6.5.4.5.4 Text of existing 6.5.1.6.6.3. Replace "6.5.1.6.6.1" with "6.5.4.5.2".

6.5.4.5.5 Text of existing 6.5.1.6.7.

Renumber existing sections 6.5.3 and 6.5.4 in 6.5.5 and 6.5.6 respectively, and renumber accordingly subsequent paragraphs and references thereto.

6.5.6.1.3 (current 6.5.4.1.3) Delete.

6.5.6.5.2 (current 6.5.4.5.2) Replace the last sentence of this paragraph with the following text:

"Flexible IBCs shall be filled with a representative material and then shall be loaded to six times their maximum permissible gross mass, the load being evenly distributed.".

6.5.6.5.5 (b) (current 6.5.4.5.5.2): Add at the end: "and no loss of contents.".

6.5.6.9.2 (current 6.5.4.9.2) In subparagraph .1, amend the first sentence to read:

"Metal IBCs: the IBC shall be filled to not less than 95% of its maximum capacity for solids or 98% of its maximum capacity for liquids.".

Amend subparagraph .2 to read as follows: "Flexible IBCs: the IBC shall be filled to the maximum permissible gross mass, the contents being evenly distributed.".

In subparagraph .3, amend the first sentence to read: "Rigid plastics and composite IBCs: the IBC shall be filled to not less than 95% of its maximum capacity for solids or 98% of its maximum capacity for liquids.".

In subparagraph .4, insert "maximum" before "capacity" and delete "in accordance with the design type".

6.5.6.9.4 (current 6.5.4.9.4) Amend to read as follows:

"6.5.6.9.4 *Drop height*

For solids and liquids, if the test is performed with the solid or liquid to be transported or with another substance having essentially the same physical characteristics:

Packing group I	Packing group II	Packing group III
1.8 m	1.2 m	0.8 m

For liquids if the test is performed with water:

(a) Where the substances to be transported have a relative density not exceeding 1.2:

Packing group II	Packing group III
1.2 m	0.8 m

(b) Where the substances to be transported have a relative density exceeding 1.2, the drop heights shall be calculated on the basis of the relative density (d) of the substance to be transported rounded up to the first decimal as follows:

Packing group II	Packing group III
d × 1.0 m	d × 0.67 m

6.5.6.14 to 6.5.6.14.4 (current 6.5.4.14 to 6.5.4.14.4) Delete.

Chapter 6.6

6.6.5.1.6 Amend to read as follows:

"6.6.5.1.6 (Reserved)

***NOTE**: For the conditions for assembling different inner packagings in a large packaging and permissible variations in inner packagings, see 4.1.1.5.1.".*

6.6.5.2.2 Insert a new 6.6.5.2.2 with the same text as existing 6.5.4.1.3, replacing the reference to 6.5.4.9.4 by a reference to 6.6.5.3.4.4 in sub-paragraph (a).

Renumber accordingly existing 6.6.5.2.2 to 6.6.5.2.3 and references thereto.

6.6.5.3.2.4 and 6.6.5.3.3.5: Amend by replacing the existing text with that of 6.5.4.5.5 (renumbered 6.5.6.5.5) and 6.5.4.6.5 (renumbered 6.5.6.6.5) respectively, but replacing the word "IBCs" by "large packagings".

Chapter 6.7

6.7.2.19.1, 6.7.3.15.1
and 6.7.4.14.1 Replace the existing text and list of standards with the following text:

"Portable tanks meeting the definition of container in the International Convention for Safe Containers (CSC), 1972, as amended, shall not be used unless they are successfully qualified by subjecting a representative prototype of each design to the Dynamic, Longitudinal Impact Test prescribed in the United Nations Manual for Tests and Criteria, Part IV, Section 41.".

6.7.3.8.1.1 In the footnote, replace "CGA S-1.2-1995" and "CGA Pamphlet S-1.2-1995" with "CGA S-1.2-2003 "Pressure Relief Device Standards-Part 2-Cargo and Portable Tanks for Compressed Gases".".

6.7.4.7.4 Add the following footnote “See for example CGA Pamphlet S-1.2-2003 “Pressure Relief Device Standards-Part 2-Cargo and Portable Tanks for Compressed Gases.”.

6.7.5.4.1 Replace the first sentence with the following two sentences:

"The elements of MEGCs used for the transport of UN 1013 carbon dioxide and UN 1070 nitrous oxide shall be isolated by a valve into assemblies of not more than 3000 litres. Each assembly shall be fitted with one or more pressure relief devices.".
(Current final sentence remains unchanged).

6.7.5.5.1 and 6.7.5.5.2 Replace "CGA S-1.2-1995" with "CGA S-1.2-2003 "Pressure Relief Device Standards, Part 2, Cargo and Portable Tanks for Compressed Gases"".

Replace "CGA S-1.1-1994" with "CGA S-1.1-2003 "Pressure Relief Device Standards, Part 1, Cylinders for Compressed Gases"".

6.7.5.6.1 Amend to read as follows:

"6.7.5.6.1 Pressure relief devices shall be clearly and permanently marked with the following:

(a) the manufacturer's name and relevant catalogue number;

(b) the set pressure and/or the set temperature;

(c) the date of the last test.".

6.7.5.6.2 Delete this paragraph and renumber subsequent paragraph accordingly.

6.7.5.8.1 In the third sentence, replace "and oxidising" with ", pyrophoric and oxidizing".

6.7.5.12.1 Replace the existing text and list of standards with the following text:

"MEGCs meeting the definition of container in the CSC shall not be used unless they are successfully qualified by subjecting a representative prototype of each design to the Dynamic, Longitudinal Impact Test prescribed in the United Nations Manual for Tests and Criteria, Part IV, Section 41.".

PART 7

Chapter 7.2

Amend paragraph 7.2.1.13 to read:

"7.2.1.13 No segregation need be applied

.1 between dangerous goods of different classes which comprise the same substance but vary only in their water content, such as sodium sulphide in classes 4.2 and 8 or for class 7 if the difference is due to quantity only;

.2 between dangerous goods which belong to a group of substances of different classes but for which scientific evidence exists that they do not react dangerously when in contact with each other. Substances within the same table shown below are compatible with one another.

Table 1

UN	Proper Shipping Name	Class	Subsidiary risk(s)	Packing group
2014	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)	5.1	8	II
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8% but less than 20% hydrogen peroxide (stabilized as necessary)	5.1		III
3105	ORGANIC PEROXIDE TYPE D, LIQUID (peroxyacetic acid, type D, stabilized)	5.2		
3107	ORGANIC PEROXIDE TYPE E, LIQUID (peroxyacetic acid, type E, stabilized)	5.2		
3109	ORGANIC PEROXIDE TYPE F, LIQUID (peroxyacetic acid, type F, stabilized)	5.2		
3149	HYDROGEN PEROXIDE AND PEROXYACETIC ACID, MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED	5.1	8	II

Table 2

UN	Proper Shipping Name	Class	Subsidiary risk(s)	Packing group
1295	TRICHLOROSILANE	4.3	3/8	I
1818	SILICON TETRACHLORIDE	8	-	II
2189	DICHLOROSILANE	2.3	2.1/8	-

Chapter 7.3

[7.3.2.1 Replace "61°C" with "60°C".]

Chapter 7.7

7.7.6 Insert new 7.7.6 as follows:

"**7.7.6 Special provisions for flammable gases or liquids having a flashpoint below 23°C c.c. transported under temperature control**

7.7.6.1 When flammable gases or liquids having a flashpoint below 23°C c.c. are packed or loaded in a cargo transport unit equipped with a refrigerating or heating system, the cooling or heating equipment shall comply with 7.7.3.

7.7.6.2 When flammable liquids having a flashpoint below 23°C c.c. and not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion-proof electrical fittings are not required, when the substances are pre-cooled to and transported at a control temperature of at least 10°C below the flashpoint. In case of failure of the refrigerating system, the system shall be disconnected from the power supply."

7.7.6 (existing) renumber as 7.7.7

7.7.7 (existing) renumber as 7.7.8

7.7.8 (new) Replace "exemption" with "approval".

Chapter 7.9

7.9.3 Replace existing 7.9.3 with the following:

"**7.9.3 Contact information for the main designated national competent authorities**

Contact information for the main designated national competent authorities concerned is given in this paragraph[*]. Corrections to these addresses should be sent to the Organization[**].

[*] Reference is made to MSC.2/Circ.[…], as may be amended, which provides a more comprehensive listing of contact information for competent authorities and bodies.

[**] International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom
Email: info@imo.org
Fax: +44 207587 3120

LIST OF CONTACT INFORMATION FOR THE MAIN DESIGNATED NATIONAL COMPETENT AUTHORITIES

Country	Contact information for the main designated national competent authorities
ALGERIA	Ministère des Transports/Direction de la Marine Marchande 119 Rue Didouche Mourad Alger ALGÉRIE Telephone: +21326061 46 Telex: 66063 DGAF DZ
ARGENTINA	Prefectura Naval Argentina (Argentine Coast Guard) Dirección de Protección del Medio Ambiente Departamento Mercancías Peligrosas Avda. Eduardo Madero 235 4º piso, Oficina 4.36 y 4.37 Buenos Aires (C1106ACC) REPÚBLICA ARGENTINA Telephone: +54 11 4318 7669 Telefax: +5411 43188669/7474 Telex: 18581 PREFECT AR Email: dpmapna@ciudad.com.ar
AUSTRALIA	*Canberra* Manager, Ship Inspection Maritime Operations Australian Maritime Safety Authority GPO Box 2181 Canberra ACT 2601 AUSTRALIA Telephone: +61 2 6279 5048 Telefax: +61 2 6279 5058 Email: psc@amsa.gov.au Website: http://www.amsa.gov.au
BAHAMAS	Bahamas Maritime Authority Second Floor Latham House 16 Minories London, EC3N 1EH UNITED KINGDOM Telephone: +44 (0)20 7264 2550 Telefax: +44 (0)20 7264 2579 Telex: 892617 BAHREG G

Country	Contact information for the main designated national competent authorities
BELGIUM	*Brussels Office* Federal Public Service Mobility and Transport Directorate-general Maritime Transport Aarlenstraat 104 B-1040 Brussels BELGIUM Telephone: +32 2 233 1211 Telefax: +32 2 230 3002
BRAZIL	Diretoria de Portos e Costas (DPC-20) Rua Teófilo Otoni No. 04 Centro Rio de Janeiro CEP 20090-070 BRAZIL Telephone: +55 21 2104 5203 Telefax: +55 21 2104 5202 Email: secom@dpc.mar.mil.br
BULGARIA	*Main Office* State Shipping Inspectorate Ministry of Transport Levski Str. 9/11 1000 Sofia BULGARIA Telephone: +359 2 88 55 29
CANADA	The Chairman Board of Steamship Inspection Transport Canada -Marine Safety Tower C, Place de Ville 330 Sparks Street, 11th Floor Ottawa, Ontario, K1A ON5 CANADA Telephone: +1 613 991 3132 +1 613 991 3143 +1 613 991 3140 Telefax: +1 613 993 8196
CHILE	Dirección General del Territorio Marítimo y de Marina Mercante Dirección de Seguridad y Operaciones Marítimas Depto. Prevención de Riesgos Errázuriz 537 Valparaiso CHILE Telephone: +56 32 208256 Telefax: +56 32 208262 Telex: 230602 DGTM CL 330461 DGTM CK

Country	Contact information for the main designated national competent authorities
CHINA	Maritime Safety Administration People's Republic of China 11 Jianguomen Nei Avenue Beijing 100736 CHINA Telephone: +86 10 6529 2588 +86 10 6529 2218 Telefax: +86 10 6529 2245 Telex: 222258 CMSAR CN
CROATIA	Ministry of Maritime Affairs Transport and Communication Marine Safety Division Prisavlje 14 1000 Zagreb REPUBLIC OF CROATIA Telephone: +385 1 611 5966 Telefax: +385 1 611 5968 Email: pomorski-promet@zg.tel.hr
CUBA	Ministerio del Transporte Dirección de Seguridad e Inspección Marítima Boyeros y Tulipán. Plaza Ciudad de la Habana CUBA Telephone: +53 7 816 607 +53 7 819 498 Telefax: +53 7811 514 Email: dsim@transmet.cu
CYPRUS	Department of Merchant Shipping Ministry of Communications and Works Kylinis Street Mesa Geitonia CY-4007 Lemesos P.O. Box 56193 CY-3305 Lemesos CYPRUS Telephone: +357 5 848 100 Telefax: +357 5 848 200 Telex: 2004 MERSHIP CY Email: dms@cytanet.com.cy
CZECH REPUBLIC	Ministry of Transport of the Czech Republic Navigation and Waterways Division Nábr. L.. Svobody 12 110 15 Praha 1 CZECH REPUBLIC Telephone: +42 2 230 312 25 Telefax: +42 2 248 105 96 Telex: +42 2 12 10 96 Domi C

Country	Contact information for the main designated national competent authorities
DENMARK	Danish Maritime Authority P.O. Box 2605 Vermundsgade 38C 2100 Copenhagen Ø DENMARK Telephone: +45 39 17 44 00 Telefax: +45 39 17 44 01 Email: SFS@dma.dk
ECUADOR	Dirección General de la Marine Mercante y del Litoral P.O. Box 7412 Guayaquil ECUADOR Telephone: +593 4 526 760 Telefax: +593 4 324 246 Telex: 04 3325 DIGMER ED
ESTONIA	Estonian Maritime Administration Maritime Safety Division Valge 4 EST-11413 Tallinn ESTONIA Telephone: +372 6205 700/715 Telefax: +372 6205 706 Email: mot@vta.ee
FINLAND	Finnish Maritime Administration P.O. Box 171 00181 Helsinki FINLAND Telephone: +358204484840/4336 Telefax: +358204484500 +358 20 4484336
FRANCE	Ministère de l'Equipement, des Transports et du Logement Direction des Affaires maritimes et des Gens de la Mer Sous-Direction de la Sécurité maritime Bureau du contrôle des navires et des effectifs 3 place de Fontenoy 75700 Paris FRANCE Telephone: +33 1 44 49 86 49 Telefax: +33 1 44 49 86 40 Telex: 250 823 FMIMER Email: olga.lefevre@equipement.gouv.fr

Country	Contact information for the main designated national competent authorities
GAMBIA	The Managing Director Gambia Ports Authority Banjulp THE GAMBIA Telephone: +220 27266 Telefax: +220 27268 Telex: 2235 GAMPORTS GV
GERMANY	Federal Ministry of Transport, Building and Housing Dangerous Goods Branch Robert-Schuman-Platz 1 D-53175 Bonn GERMANY Telephone: +49 228 3000 or 300- extension +49 228 300 2643 Telefax: +49 228 300 3428 Email: Ref-A33@bmvbw.bund.de
GREECE	Ministry of Mercantile Marine Safety of Navigation Division International Relations Department 150 Gr. Lambraki Av. 185 18 Piraeus GREECE Telephone: +301 4191188 Telefax: +301 4128150 Telex: +212022, 212239 YEN GR Email: dan@yen.gr
INDIA	The Directorate General of Shipping Jahz Bhawan Walchand Hirachand Marg Bombay 400 001 INDIA Telephone: +91 22 263651 Telex: +DEGESHIP 2813-BOMBAY
INDONESIA	Director of Marine Safety Directorate-General Sea Communication (Department Perhubungan) JI. Merdeka Barat No.8 Jakarta Pusat. INDONESIA Telephone: +381 3269 Telefax: +384 0788

Country	Contact information for the main designated national competent authorities
IRAN	Ports and Shipping Organization 751 Enghelab Avenue ~ Tehran IRAN " Telephone: +98 21 8809280 to 89 Telefax: +98 21 8804100 Telex: 212271 BNDR-IR
IRELAND	The Chief Surveyor Marine Survey Office Department of the Marine 26/27 Eden Quay Dublin 1 IRELAND Telephone: +353 18744900 / 18722045 +353 18743325 Telefax: +353872 4491 Telex: 33358 MSO EI
ISRAEL	Technical Services Department Shipping and Ports Administration 102 Haatzmaut Road Haifa ISRAEL Telephone: +972 4 8535640 Telefax: +972 4 8510185 Telex: 46632 Email: mot.dov@mail.netvision.net.il
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SOUTH AFRICA	South African Maritime Safety Authority P.O. Box 13186 Hatfield 0028 Pretoria SOUTH AFRICA Telephone: +27 12 342 3049 Telefax: +27 12 342 3160 South African Maritime Safety Authority Hatfield Gardens, Block E (Ground Floor) Corner Arcadia and Grosvenor Street Hatfield 0083 Pretoria SOUTH AFRICA

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AMERICAN SAMOA	Silila Patane Harbour Master Port Administration Pagopago American Samoa AMERICAN SAMOA 96799
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Appendix A

In the table for class 6.2, amend the proper shipping name to read “BIOLOGICAL SUBSTANCES, CATEGORY B”

In the table for class 8, amend the proper shipping name of UN No.1740 to read “HYDROGENDIFLUORIDE, SOLID, N.O.S.”, and add a new entry under Specific entries “8” “6.1” “3471” “HYDROGENDIFLUORIDE SOLUTION, N.O.S.”.

Index

Delete the entries for "1,4-Benzenediol", "p-Dihydroxybenzene", "Hydroquinol", "HYDROQUINONE, SOLID", "Quinol" and "HYDROQUINONE SOLUTION".

Delete all entries relevant to UN nos. 1014, 1015, 1979, 1980, 1981, 2600 and 3435.

Amend the proper shipping names for UN nos. 1143, 1740, 1779, 1848, 2823, 3245 and 3373.

Add entries relevant to UN Nos.3412 (two entries depending upon the concentration of acid), 3463, 3469, 3470, 3471, 3472 and 3473.

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ANNEX 6

AMENDMENTS RELATING TO THE ENVIRONMENTALLY HAZARDOUS SUBSTANCES (EHS) AS ADOPTED BY THE UN SCOE ON THE TRANSPORT OF DANGEROUS GOODS

Part 2

Chapter 2.9

2.9.2.1 (a) Amend the current text to read "environmentally hazardous substances which are not covered by other classes".

2.9.3 Insert a new 2.9.3 as follows:

2.9.3 Environmentally hazardous substances (aquatic environment)

2.9.3.1 *General definitions*

2.9.3.1.1 Environmentally hazardous substances include, *inter alia*, liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances (such as preparations and wastes).

2.9.3.1.2 The aquatic environment may be considered in terms of the aquatic organisms that live in the water, and the aquatic ecosystem of which they are part[1]. The basis, therefore, of the identification of hazard is the aquatic toxicity of the substance or mixture, although this may be modified by further information on the degradation and bioaccumulation behaviour.

2.9.3.1.3 While the following classification procedure is intended to apply to all substances and mixtures, it is recognised that in some cases, e.g. metals or poorly soluble inorganic compounds, special guidance will be necessary[2].

2.9.3.1.4 The following definitions apply for acronyms or terms used in this section:

- BCF: Bioconcentration Factor;
- BOD: Biochemical Oxygen Demand;
- COD: Chemical Oxygen Demand;
- GLP: Good Laboratory Practices;
- EC_{50} : the effective concentration of substance that causes 50% of the maximum response;
- ErC_{50} : EC_{50} in terms of reduction of growth;

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1 This does not address aquatic pollutants for which there may be a need to consider effects beyond the aquatic environment such as the impacts on human health etc.

2 This can be found in Annex 9 of the GHS.

- K_{ow}: octanol/water partition coefficient;

- LC_{50} (50% lethal concentration): the concentration of a substance in water which causes the death of 50% (one half) in a group of test animals;

- $L(E)C_{50}$: LC_{50} or EC_{50};
- NOEC: No Observed Effect Concentration;

- OECD Test Guidelines: Test guidelines published by the Organization for Economic Cooperation and Development (OECD);

2.9.3.2 ***Definitions and data requirements***

2.9.3.2.1 The basic elements for classification of environmentally hazardous substances (aquatic environment) are:

- acute aquatic toxicity;
- potential for or actual bioaccumulation;
- degradation (biotic or abiotic) for organic chemicals; and
- chronic aquatic toxicity.

2.9.3.2.2 While data from internationally harmonised test methods are preferred, in practice, data from national methods may also be used where they are considered as equivalent. In general, freshwater and marine species toxicity data can be considered as equivalent data and are preferably to be derived using OECD Test Guidelines or equivalent according to the principles of Good Laboratory Practices (GLP). Where such data are not available, classification shall be based on the best available data.

2.9.3.2.3 **Acute aquatic toxicity** shall normally be determined using a fish 96 hour LC_{50} (OECD Test Guideline 203 or equivalent), a crustacea species 48 hour EC_{50} (OECD Test Guideline 202 or equivalent) and/or an algal species 72 or 96 hour EC_{50} (OECD Test Guideline 201 or equivalent). These species are considered as surrogates for all aquatic organisms. Data on other species such as Lemna may also be considered if the test methodology is suitable.

2.9.3.2.4 **Bioaccumulation** means net result of uptake, transformation and elimination of a substance in an organism due to all routes of exposure (i.e. air, water, sediment/soil and food). **The potential for bioaccumulation** shall normally be determined by using the octanol/water partition coefficient, usually reported as a log K_{ow} determined according to OECD Test Guideline 107 or 117. While this represents a potential to bioaccumulate, an experimentally determined Bioconcentration Factor (BCF) provides a better measure and shall be used in preference when available. A BCF shall be determined according to OECD Test Guideline 305.

2.9.3.2.5 **Environmental degradation** may be biotic or abiotic (eg. hydrolysis) and the criteria used reflect this fact. Ready biodegradation is most easily defined using the OECD biodegradability tests (OECD Test Guideline 301 (A - F)). A pass level in these tests may be considered as indicative of rapid degradation in most aquatic environments. As these are freshwater tests, use of results from OECD Test Guideline 306, which is more suitable for the marine environment, is also included. Where such data are not available, a BOD(5 days)/COD ratio >0.5 is considered as indicative of rapid degradation. Abiotic degradation such as hydrolysis, primary degradation, both abiotic and biotic, degradation in non-aquatic media and proven rapid degradation in the environment may all be considered in defining rapid degradability[3].

2.9.3.2.5.1 Substances are considered rapidly degradable in the environment if the following criteria are met:

(a) In 28-day ready biodegradation studies, the following levels of degradation are achieved:

(i) tests based on dissolved organic carbon: 70%;

(ii) tests based on oxygen depletion or carbon dioxide generation: 60% of theoretical maxima;

These levels of biodegradation shall be achieved within 10 days of the start of degradation which point is taken as the time when 10% of the substance has been degraded; or

(b) In those cases where only BOD and COD data are available, when the ratio of $BOD_5/COD \geq 0.5$; or

(c) If other convincing scientific evidence is available to demonstrate that the substance or mixture can be degraded (biotically and/or abiotically) in the aquatic environment to a level above 70% within a 28 day period.

2.9.3.2.6 **Chronic toxicity** data are less available than acute data and the range of testing procedures less standardized. Data generated according to the OECD Test Guidelines 210 (Fish Early Life Stage) or 211 (Daphnia Reproduction) and 201 (Algal Growth Inhibition) may be accepted. Other validated and internationally accepted tests may also be used. The "No Observed Effect Concentrations" (NOECs) or other equivalent L(E)Cx shall be used.

2.9.3.3 ***Substance classification categories and criteria***

2.9.3.3.1 Substances shall be classified as "environmentally hazardous substances (aquatic environment)", if they satisfy the criteria for Acute I, Chronic I or Chronic II, according to the following tables:

[3] Special guidance on data interpretation is provided in Chapter 3.10 and Annex 8 of the GHS.

Acute toxicity

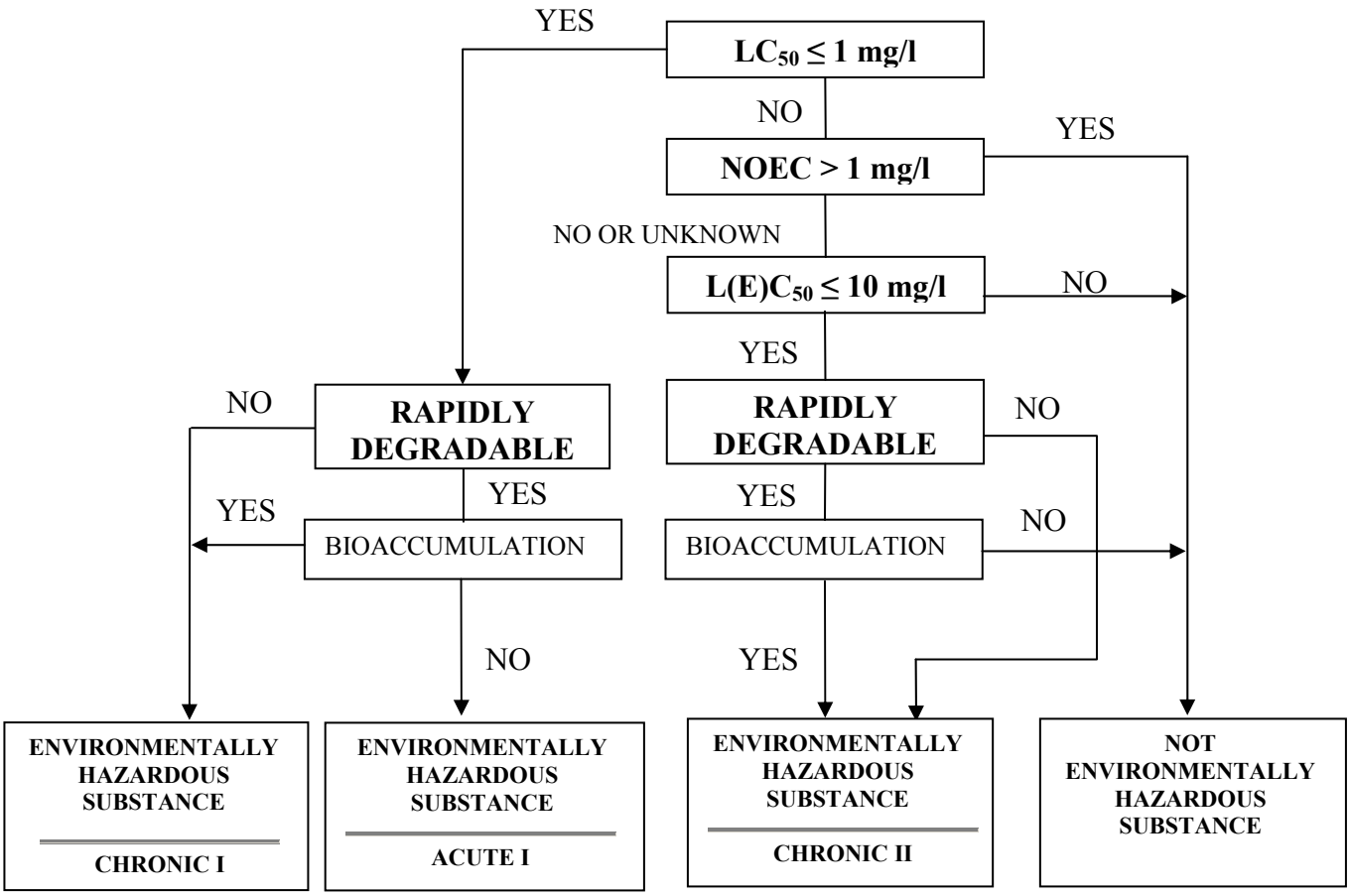
Category: Acute I	
Acute toxicity:	
96 hr LC_{50} (for fish)	≤ 1 mg/l and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/l

Chronic toxicity

Category: Chronic I	
Acute toxicity:	
96 hr LC_{50} (for fish)	≤ 1 mg/l and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/l
and the substance is not rapidly degradable and/or the log K_{ow} ≥ 4 (unless the experimentally determined BCF < 500)	

Category: Chronic II	
Acute toxicity:	
96 hr LC_{50} (for fish)	>1 to ≤ 10 mg/l and/or
48 hr EC_{50} (for crustacea)	>1 to ≤ 10 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	>1 to ≤ 10 mg/l
and the substance is not rapidly degradable and/or the log K_{ow} ≥ 4 (unless the experimentally determined BCF <500), unless the chronic toxicity NOECs are > 1 mg/l	

The classification flowchart below outlines the process to be followed.



2.9.3.4 Mixtures classification categories and criteria

2.9.3.4.1 The classification system for mixtures covers the classification categories which are used for substances meaning acute category I and chronic categories I and II. In order to make use of all available data for purposes of classifying the aquatic environmental hazards of the mixture, the following assumption is made and is applied, where appropriate:

> The "relevant components" of a mixture are those which are present in a concentration of 1% (w/w) or greater, unless there is a presumption (e.g. in the case of highly toxic components) that a component present at less than 1% can still be relevant for classifying the mixture for aquatic environmental hazards.

2.9.3.4.2 The approach for classification of aquatic environmental hazards is tiered and dependent upon the type of information available for the mixture itself and its components. Elements of the tiered approach include:

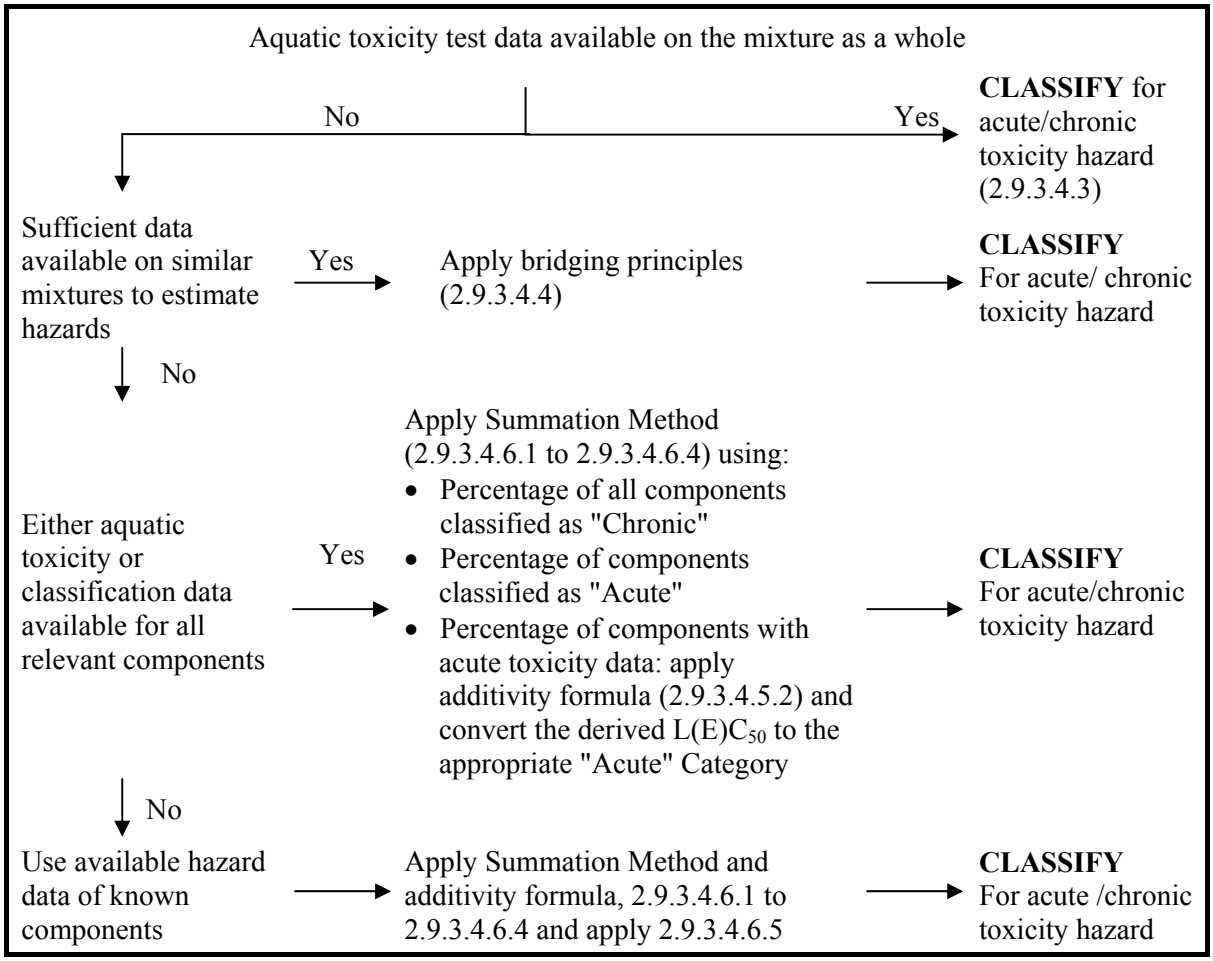
(a) classification based on tested mixtures;

(b) classification based on bridging principles;

(c) the use of "summation of classified components" and /or an "additivity formula".

Figure 2.9.1 below outlines the process to be followed.

Figure 2.9.1: Tiered approach to classification of mixtures for acute and chronic aquatic environmental hazards



2.9.3.4.3 *Classification of mixtures when data are available for the complete mixture*

2.9.3.4.3.1 When the mixture as a whole has been tested to determine its aquatic toxicity, it shall be classified according to the criteria that have been agreed for substances, but only for acute toxicity. The classification is based on the data for fish, crustacea and algae/plants. Classification of mixtures by using LC_{50} or EC_{50} data for the mixture as a whole is not possible for chronic categories since both toxicity data and environmental fate data are needed, and there are no degradability and bioaccumulation data for mixtures as a whole. It is not possible to apply the criteria for chronic classification because the data from degradability and bio-accumulation tests of mixtures cannot be interpreted; they are meaningful only for single substances.

2.9.3.4.3.2 When there is acute toxicity test data (LC_{50} or EC_{50}) available for the mixture as a whole, this data as well as information with respect to the classification of components for chronic toxicity shall be used to complete the classification for tested mixtures as follows. When chronic (long term) toxicity data (NOEC) is also available, this shall be used in addition.

(a) $L(E)C_{50}$ (LC_{50} or EC_{50}) of the tested mixture ≤ 1mg/l and NOEC of the tested mixture ≤ 1.0 mg/l or unknown:

- classify mixture as category acute I;
- apply summation of classified components approach (see 2.9.3.4.6.3 and 2.9.3.4.6.4) for chronic classification (chronic I, II, or no need of chronic classification).

(b) $L(E)C_{50}$ of the tested mixture ≤ 1 mg/l and NOEC of the tested mixture > 1.0 mg/l:

- classify mixture as category acute I;
- apply summation of classified components approach (see 2.9.3.4.6.3 and 2.9.3.4.6.4) for classification as Category Chronic I. If the mixture is not classified as Category Chronic I, then there is no need for chronic classification.

(c) $L(E)C_{50}$ of the tested mixture >1mg/l, or above the water solubility, and NOEC of the tested mixture ≤ 1.0mg/l or unknown:

- no need to classify for acute toxicity;
- apply summation of classified components approach (see 2.9.3.4.6.3 and 2.9.3.4.6.4) for chronic classification or no need for chronic classification.

(d) $L(E)C_{50}$ of the tested mixture >1mg/l, or above the water solubility, and NOEC of the tested mixture > 1.0 mg/l:

- No need to classify for acute or chronic toxicity.

2.9.3.4.4 *Bridging principles*

2.9.3.4.4.1 Where the mixture itself has not been tested to determine its aquatic environmental hazard, but there are sufficient data on the individual components and similar tested mixtures to adequately characterise the hazards of the mixture, this data shall be used in accordance with the following agreed bridging rules. This ensures that the classification process uses the available data to the greatest extent possible in characterising the hazards of the mixture without the necessity for additional testing in animals.

2.9.3.4.4.2 Dilution

2.9.3.4.4.2.1 If a mixture is formed by diluting another classified mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original component and which is not expected to affect the aquatic hazards of other components, then the mixture shall be classified as equivalent to the original mixture or substance.

2.9.3.4.4.2.2 If a mixture is formed by diluting another classified mixture or a substance with water or other totally non-toxic material, the toxicity of the mixture shall be calculated from the original mixture or substance.

2.9.3.4.4.3 Batching

2.9.3.4.4.3.1 The aquatic hazard classification of one production batch of a complex mixture shall be assumed to be substantially equivalent to that of another production batch of the same commercial product and produced by or under the control of the same manufacturer, unless there is reason to believe there is significant variation such that the aquatic hazard classification of the batch has changed. If the latter occurs, new classification is necessary.

2.9.3.4.4.4 Concentration of mixtures which are classified with the most severe classification categories (chronic I and acute I)

2.9.3.4.4.4.1 If a mixture is classified as chronic I and/or acute I, and components of the mixture which are classified as chronic I and/or acute I are further concentrated, the more concentrated mixture shall be classified with the same classification category as the original mixture without additional testing.

2.9.3.4.4.5 Interpolation within one toxicity category

2.9.3.4.4.5.1 If mixtures A and B are in the same classification category and mixture C is made in which the toxicologically active components have concentrations intermediate to those in mixtures A and B, then mixture C shall be in the same category as A and B. Note that the identity of the components is the same in all three mixtures.

2.9.3.4.4.6 Substantially similar mixtures

2.9.3.4.4.6.1 Given the following:

(a) Two mixtures:

i) A + B
ii) C + B

(b) The concentration of component B is the same in both mixtures;

(c) The concentration of component A in mixture (i) equals that of component C in mixture (ii);

(d) Classification for A and C are available and are the same, i.e. they are in the same hazard category and are not expected to affect the aquatic toxicity of B,

then there shall be no need to test mixture (ii) if mixture (i) is already characterised by testing and both mixtures are classified in the same category.

2.9.3.4.5 *Classification of mixtures when data are available for all components or only for some components of the mixture*

2.9.3.4.5.1 The classification of a mixture shall be based on summation of the classification of its components. The percentage of components classified as "Acute" or "Chronic" will feed straight into the summation method. Details of the summation method are described in 2.9.3.4.6.1 to 2.9.3.4.6.4.1.

2.9.3.4.5.2 Mixtures are often made of a combination of both components that are classified (as Acute I and/or Chronic I, II) and those for which adequate test data is available. When adequate toxicity data is available for more than one component in the mixture, the combined toxicity of those components shall be calculated using the following additivity formula, and the calculated toxicity shall be used to assign that portion of the mixture an acute toxicity hazard which is then subsequently used in applying the summation method.

$$\frac{\sum Ci}{L(E)C_{50m}} = \sum_{n} \frac{Ci}{L(E)C_{50i}}$$

where:

C_i = concentration of component i (weight percentage);
$L(E)C_{50i}$ = (mg/L) LC_{50} or EC_{50} for component i;
n = number of components, and i is running from 1 to n;
$L(E)C_m$ = $L(E)C_{50}$ of the part of the mixture with test data

2.9.3.4.5.3 When applying the additivity formula for part of the mixture, it is preferable to calculate the toxicity of this part of the mixture using for each substance toxicity values that relate to the same species (i.e. fish, daphnia or algae) and then to use the highest toxicity (lowest value) obtained (i.e. use the most sensitive of the three species). However, when toxicity data for each component are not available in the same species, the toxicity value of each component shall be selected in the same manner that toxicity values are selected for the classification of substances, i.e. the higher toxicity (from the most sensitive test organism) is used. The calculated acute toxicity shall then be used to classify this part of the mixture as Acute I using the same criteria described for substances.

2.9.3.4.5.4 If a mixture is classified in more than one way, the method yielding the more conservative result shall be used.

2.9.3.4.6 *Summation method*

2.9.3.4.6.1 Classification procedure

2.9.3.4.6.1.1 In general a more severe classification for mixtures overrides a less severe classification, e.g. a classification with chronic I overrides a classification with chronic II. As a consequence the classification procedure is already completed if the results of the classification is chronic I. A more severe classification than chronic I is not possible and it is not necessary therefore to undergo the further classification procedure.

2.9.3.4.6.2 Classification for the acute category I

2.9.3.4.6.2.1 All components classified as acute I shall be considered. If the sum of these components is greater than 25% the whole mixture shall be classified as category acute I. If the result of the calculation is a classification of the mixture as category acute I, the classification process is completed.

2.9.3.4.6.2.2 The classification of mixtures for acute hazards based on this summation of classified components, is summarised in Table 2.9.1 below.

Table 2.9.1: Classification of a mixture for acute hazards, based on summation of classified components

Sum of components classified as:	Mixture is classified as:
Acute I × M[1] >25%	Acute I

[1] *For explanation of the M factor, see 2.9.3.4.6.4.*

2.9.3.4.6.3 Classification for the chronic categories I, II

2.9.3.4.6.3.1 First, all components classified as chronic I are considered. If the sum of these components is greater than 25% the mixture shall be classified as category chronic I. If the result of the calculation is a classification of the mixture as category chronic I the classification procedure is completed.

2.9.3.4.6.3.2 In cases where the mixture is not classified as chronic I, classification of the mixture as chronic II is considered. A mixture shall be classified as chronic II if 10 times the sum of all components classified as chronic I plus the sum of all components classified as chronic II is greater than 25%. If the result of the calculation is classification of the mixture as chronic II, the classification process is completed.

2.9.3.4.6.3.3 The classification of mixtures for chronic hazards, based on this summation of classified components, is summarised in Table 2.9.2 below.

Table 2.9.2: Classification of a mixture for chronic hazards, based on summation of classified components

Sum of components classified as:		Mixture is classified as:
Chronic I × M[1]	>25 %	Chronic I
(M × 10 × Chronic I)+Chronic II	>25%	Chronic II

[1] *For explanation of the M factor, see 2.9.3.4.6.4.*

2.9.3.4.6.4 Mixtures with highly toxic components

2.9.3.4.6.4.1 Acute category 1 components with toxicities well below 1 mg/l may influence the toxicity of the mixture and are given increased weight in applying the summation of classification approach. When a mixture contains components classified as acute or chronic category I, the tiered approach described in 2.9.3.4.6.2 and 2.9.3.4.6.3 shall be applied using a weighted sum by multiplying the concentrations of acute category 1 components by a factor, instead of merely adding up the percentages. This means that the concentration of "Acute I" in the left column of Table 2.9.1 and the concentration of "Chronic I" in the left column of Table 2.9.2 are multiplied by the appropriate multiplying factor. The multiplying factors to be applied to these components are defined using the toxicity value, as summarised in Table 2.9.3 below. Therefore, in order to classify a mixture containing acute I and/or chronic I components, the classifier needs to be informed of the value of the M factor in order to apply the summation method. Alternatively, the additivity formula (2.9.3.4.5.2) may be used when toxicity data are available for all highly toxic components in the mixture and there is convincing evidence that all other components, including those for which specific acute toxicity data are not available, are of low or no toxicity and do not significantly contribute to the environmental hazard of the mixture.

Table 2.9.3: Multiplying factors for highly toxic components of mixtures

$L(E)C_{50}$ value	Multiplying factor (M)
$0.1 < L(E)C_{50} \leq 1$	1
$0.01 < L(E)C_{50} \leq 0.1$	10
$0.001 < L(E)C_{50} \leq 0.01$	100
$0.0001 < L(E)C_{50} \leq 0.001$	1000
$0.00001 < L(E)C_{50} \leq 0.0001$	10000
(continue in factor 10 intervals)	

2.9.3.4.6.5 Classification of mixtures with components without any useable information

2.9.3.4.6.5.1 In the event that no useable information on acute and/or chronic aquatic hazard is available for one or more relevant components, it is concluded that the mixture cannot be attributed (a) definitive hazard category(ies). In this event, the mixture shall be classified based on the known components only with the additional statement that: "× percent of the mixture consists of component(s) of unknown hazards to the aquatic environment.".

2.9.3.5 ***Substances or mixtures dangerous to the aquatic environment not otherwise classified under the provisions of this Code***

2.9.3.5.1 Substances or mixtures dangerous to the aquatic environment not otherwise classified under this Code shall be designated:

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
or

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

They shall be assigned to Packing Group III.".

Part 3

Chapter 3.2

Dangerous Goods List

For UN Nos. 3077 and 3082, insert "331" in Column (6).

Chapter 3.3

Add the following new special provision:

"**331** For environmentally hazardous substances meeting the criteria of 2.9.3, an additional mark as specified in 5.2.1.7 and 5.3.2.3 shall be applied.".

Part 5

Chapter 5.2

5.2.1.7 Add a new 5.2.1.7 to read as follows:

"**5.2.1.7** ***Special marking provisions for environmentally hazardous substances***

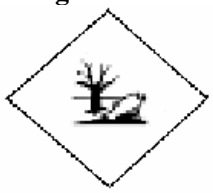
5.2.1.7.1 Packages containing environmentally hazardous substances meeting the criteria of 2.9.3 (UN Nos. 3077 and 3082) shall be durably marked with the environmentally hazardous substance mark with the exception of single packagings and combination packagings containing inner packagings with:

- contents of 5 l or less for liquids; or
- contents of 5 kg or less for solids."

5.2.1.7.2 The environmentally hazardous substance mark shall be located adjacent to the markings required by 5.2.1.1. The requirements of 5.2.1.2 and 5.2.1.4 shall be met.

5.2.1.7.3 The environmentally hazardous substance mark shall be as shown in Figure 5.2.2. For packagings, the dimensions shall be 100 mm × 100 mm, except in the case of packages of such dimensions that they can only bear smaller marks. For transport units (see 5.3.2.3.1), the minimum dimensions shall be 250 mm × 250 mm.

Figure 5.2.2



Symbol (fish and tree): black on white or suitable contrasting background"

5.3.2.3 Add a new 5.3.2.3 to read as follows:

"**5.3.2.3** ***Environmentally hazardous substance mark***

5.3.2.3.1 A transport unit containing environmentally hazardous substances meeting the criteria of 2.9.3 (UN Nos.3077 and 3082) shall be marked on at least two opposing sides of the unit and in any case in such a position as may be seen by all those involved in the loading or unloading processes, with the environmentally hazardous substance mark to be affixed in accordance with the provisions of 5.3.1.1.4 for placards.".

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ANNEX 7

DRAFT MSC CIRCULAR

CARRIAGE OF DANGEROUS GOODS

THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE

Contact information for the designated national competent authority

Annex 7 is distributed as document DSC 10/3/1/Add.1.

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