Report of the Maritime Safety Committee
On Its Seventy-Eighth Session

Attached are annexes 1 to 14 to the report of the Maritime Safety Committee on its seventy-eighth session (MSC 78/26).

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ANNEX

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RESOLUTION MSC.151(78)  
(adopted on 20 May 2004)  

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than to the provisions of chapter I thereof,

NOTING SOLAS regulation II-1/3-6 concerning access to and within spaces in the cargo area of oil tankers of 500 gross tonnage and over and bulk carriers of 20,000 gross tonnage and over, adopted by resolution MSC.134(76), which is applicable to oil tankers and bulk carriers constructed on or after 1 January 2005,

ACKNOWLEDGING concerns expressed with regard to problems which might be encountered when implementing the requirements of the aforementioned SOLAS regulation II-1/3-6,

HAVING CONSIDERED, at its seventy-eighth session, amendments to SOLAS regulation II-1/3-6, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to regulation II-1/3-6 of the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2005, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention;

6. RESOLVES that SOLAS Contracting Governments may apply, in advance, the annexed SOLAS regulation II-1/3-6 adopted by this resolution together with the amendments to the Technical provisions for means of access for inspections adopted by resolution MSC.158(78) in lieu of SOLAS regulation II-1/3-6 adopted by resolution MSC.134(76) and the Technical provisions for means of access for inspections adopted by resolution MSC.133(76) to ships flying their flag constructed on or after 1 January 2005.
Regulation 3-6- Access to and within spaces in the cargo area of oil tankers and bulk carriers

1 The title of the regulation is replaced by the following:

“Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers”

2 In paragraph 1.1, the date “1 January 2005” is replaced with “1 January 2006”.

3 In paragraph 2.1, in the first sentence, the words “within the cargo area” and “a permanent” are deleted.

4 In paragraph 3.1, in the second sentence, the words “or to forward ballast tanks” are inserted between the words “bottom spaces” and “may be from a pump-room”.

5 In paragraph 4.1, in the second sentence, the words “in the cargo area” are deleted.

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ANNEX 2

RESOLUTION MSC.152(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION
FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"), concerning the amendment procedure applicable to the Annex to the Convention, other than the provisions of chapter I thereof,

HAVING CONSIDERED, at its seventy-eighth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.
ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER III
LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 19 – Emergency training and drills

1 The existing text of paragraph 3.3.3 is replaced by the following:

“3.3.3 Except as provided in paragraphs 3.3.4 and 3.3.5, each lifeboat shall be launched, and manoeuvred in the water by its assigned operating crew, at least once every three months during an abandon ship drill.”

Regulation 20 – Operational readiness, maintenance and inspections

2 In paragraph 1, in the second sentence, the words “paragraphs 3 and 6.2” are replaced by the words “paragraphs 3.2, 3.3 and 6.2”.

3 The existing text of paragraph 3 is replaced by the following:

“3 Maintenance

3.1 Maintenance, testing and inspections of life-saving appliances shall be carried out based on the guidelines developed by the Organization and in a manner having due regard to ensuring reliability of such appliances.

3.2 Instructions for on-board maintenance of life-saving appliances complying with regulation 36 shall be provided and maintenance shall be carried out accordingly.

3.3 The Administration may accept, in compliance with the requirements of paragraph 3.2, a shipboard planned maintenance programme, which includes the requirements of regulation 36.”

4 The existing text of paragraph 6 is replaced by the following:

“6 Weekly inspection

The following tests and inspections shall be carried out weekly and a report of the inspection shall be entered in the log-book:

* Refer to the Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (MSC/Circ.1093).
all survival craft, rescue boats and launching appliances shall be visually inspected to ensure that they are ready for use. The inspection shall include, but is not limited to, the condition of hooks, their attachment to the lifeboat and the on-load release gear being properly and completely reset;

all engines in lifeboats and rescue boats shall be run for a total period of not less than 3 min, provided the ambient temperature is above the minimum temperature required for starting and running the engine. During this period of time, it should be demonstrated that the gear box and gear box train are engaging satisfactorily. If the special characteristics of an outboard motor fitted to a rescue boat would not allow it to be run other than with its propeller submerged for a period of 3 min, it should be run for such a period as prescribed in the manufacturer’s handbook. In special cases, the Administration may waive this requirement for ships constructed before 1 July 1986;

lifeboats, except free-fall lifeboats, on cargo ships shall be moved from their stowed position, without any persons on board, to the extent necessary to demonstrate satisfactory operation of launching appliances, if weather and sea conditions so allow; and

the general emergency alarm shall be tested.”

In paragraph 7, the existing text is numbered as paragraph 7.2 and the following new paragraph 7.1 is added:

“7.1 All lifeboats, except free-fall lifeboats, shall be turned out from their stowed position, without any persons on board if weather and sea conditions so allow.”

The existing text of paragraph 11 is replaced by the following:

“11 Periodic servicing of launching appliances and on-load release gear

11.1 Launching appliances shall be:

1 maintained in accordance with instructions for on-board maintenance as required by regulation 36;

2 subject to a thorough examination at the annual surveys required by regulations I/7 or I/8, as applicable; and

3 upon completion of the examination referred to in .2 subjected to a dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the lifeboat without persons on board, except that, at intervals not exceeding five years, the test shall be carried out with a proof load of 1.1 times the maximum working load of the winch.
11.2 Lifeboat on-load release gear shall be:

.1 maintained in accordance with instructions for on-board maintenance as required by regulation 36;

.2 subject to a thorough examination and operational test during the annual surveys required by regulations I/7 and I/8 by properly trained personnel familiar with the system; and

.3 operationally tested under a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such over-hauling and test shall be carried out at least once every five years."

Regulation 32 – Personal life-saving appliances

7 The existing text of paragraph 3 is replaced by the following:

“3 Immersion suits

3.1 This paragraph applies to all cargo ships. However, with respect to cargo ships constructed before 1 July 2006, paragraphs 3.2 to 3.5 shall be complied with not later than the first safety equipment survey on or after 1 July 2006.

3.2 An immersion suit complying with the requirements of section 2.3 of the Code shall be provided for every person on board the ship. However, for ships other than bulk carriers, as defined in regulation IX/1, these immersion suits need not be required if the ship is constantly engaged on voyages in warm climates** where, in the opinion of the Administration, immersion suits are unnecessary.

3.3 If a ship has any watch or work stations which are located remotely from the place or places where immersion suits are normally stowed, additional immersion suits shall be provided at these locations for the number of persons normally on watch or working at those locations at any time.

3.4 Immersion suits shall be so placed as to be readily accessible and their position shall be plainly indicated.

3.5 The immersion suits required by this regulation may be used to comply with the requirements of regulation 7.3.”

* Refer to the Recommendation on testing of life-saving appliances, adopted by the Organization by resolution A.689(17). For life-saving appliances installed on board on or after 1 July 1999, refer to the Revised Recommendations on testing of life-saving appliances, adopted by the Organization by resolution MSC.81(70).

** Refer to the Guidelines for assessment of thermal protection (MSC/Circ.1046).
CHAPTER IV
RADIOCOMMUNICATIONS

Regulation 15 – Maintenance requirements

8 The existing text of paragraph 9 is replaced by the following:

“9 Satellite EPIRBs shall be:

.1 annually tested for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals as specified below:

.1 on passenger ships, within 3 months before the expiry date of the Passenger Ship Safety Certificate; and

.2 on cargo ships, within 3 months before the expiry date, or 3 months before or after the anniversary date, of the Cargo Ship Safety Radio Certificate.

The test may be conducted on board the ship or at an approved testing station; and

.2 subject to maintenance at intervals not exceeding five years, to be performed at an approved shore-based maintenance facility.”

APPENDIX
CERTIFICATES

Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E)

9 In section 2, item 9 is deleted and items 10, 10.1 and 10.2 are renumbered as items 9, 9.1 and 9.2 respectively.

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ANNEX 3

RESOLUTION MSC.153(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION
FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention") concerning the amendment procedure applicable to the Annex to the Convention, other than the provisions of chapter I thereof,

NOTING resolution A.920(22) entitled “Review of safety measures and procedures for the treatment of persons rescued at sea”,

RECALLING ALSO the provisions of the Convention relating to the obligation of:

- shipmasters to proceed with all speed to the assistance of persons in distress at sea; and

- Contracting Governments to ensure arrangements for coast watching and for the rescue of persons in distress at sea round their coasts,

NOTING ALSO article 98 of the United Nations Convention on the Law of the Sea, 1982, regarding the duty to render assistance,

NOTING FURTHER the initiative taken by the Secretary-General to involve competent United Nations specialized agencies and programmes in the consideration of the issues addressed in this resolution, for the purpose of agreeing on a common approach which will resolve them in an efficient and consistent manner,

REALIZING the need for clarification of existing procedures to guarantee that persons rescued at sea will be provided a place of safety regardless of their nationality, status or the circumstances in which they are found,

REALIZING FURTHER that the intent of the new paragraph 1-1 of SOLAS regulation V/33, as adopted by this resolution, is to ensure that in every case a place of safety is provided within a reasonable time. It is further intended that the responsibility to provide a place of safety, or to ensure that a place of safety is provided, falls on the Contracting Government responsible for the search and rescue region in which the survivors were recovered,
HAVING CONSIDERED, at its seventy-eighth session, amendments to the Convention, proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention;

6. ALSO REQUESTS the Secretary General to take appropriate action in further pursuing his inter-agency initiative, informing the Maritime Safety Committee of developments, in particular with respect to procedures to assist in the provision of places of safety for persons in distress at sea, for action as the Committee may deem appropriate.
ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER V
SAFETY OF NAVIGATION

Regulation 2 – Definitions
1  The following new paragraph 5 is added after the existing paragraph 4:

“5 Search and rescue service. The performance of distress monitoring, communication, co-ordination and search and rescue functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources including co-operating aircraft, ships, vessels and other craft and installations.”

Regulation 33 – Distress messages: obligations and procedure
2  The title of the regulation is replaced by the following:

“Distress situations: obligations and procedures”

3  In paragraph 1, the words “a signal” in the first sentence are replaced by the word “information”, and the following sentence is added after the first sentence of the paragraph:

“This obligation to provide assistance applies regardless of the nationality or status of such persons or the circumstances in which they are found.”

4  The following new paragraph 1-1 is inserted after the existing paragraph 1:

“1-1 Contracting Governments shall co-ordinate and co-operate to ensure that masters of ships providing assistance by embarking persons in distress at sea are released from their obligations with minimum further deviation from the ships’ intended voyage, provided that releasing the master of the ship from the obligations under the current regulation does not further endanger the safety of life at sea. The Contracting Government responsible for the search and rescue region in which such assistance is rendered shall exercise primary responsibility for ensuring such co-ordination and co-operation occurs, so that survivors assisted are disembarked from the assisting ship and delivered to a place of safety, taking into account the particular circumstances of the case and guidelines developed by the Organization. In these cases the relevant Contracting Governments shall arrange for such disembarkation to be effected as soon as reasonably practicable.”
5 The following new paragraph 6 is added after the existing paragraph 5:

“6 Masters of ships who have embarked persons in distress at sea shall treat them with humanity, within the capabilities and limitations of the ship.”

Regulation 34 – Safe navigation and avoidance of dangerous situations

6 The existing paragraph 3 is deleted.

7 The following new regulation 34-1 is added after the existing regulation 34:

“Regulation 34-1
Master’s discretion

The owner, the charterer, the company operating the ship as defined in regulation IX/1, or any other person shall not prevent or restrict the master of the ship from taking or executing any decision which, in the master’s professional judgement, is necessary for safety of life at sea and protection of the marine environment.”

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ANNEX 4

RESOLUTION MSC.154(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as “the Convention”) and article VI of the Protocol of 1988 relating to the Convention (hereinafter referred to as “the 1988 SOLAS Protocol”) concerning the procedure for amending the 1988 SOLAS Protocol,

HAVING CONSIDERED, at its seventy-eighth session, amendments to the 1988 SOLAS Protocol proposed and circulated in accordance with article VIII(b)(i) of the Convention and article VI of the 1988 SOLAS Protocol,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention and article VI of the 1988 SOLAS Protocol, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention and article VI of the 1988 SOLAS Protocol, that the said amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Parties to the 1988 SOLAS Protocol or Parties the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES the Parties concerned to note that, in accordance with article VIII(b)(vii)(2) of the Convention and article VI of the 1988 SOLAS Protocol, the amendments shall enter into force on 1 July 2006, upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention and article VI of the 1988 SOLAS Protocol, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the 1988 SOLAS Protocol;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the 1988 SOLAS Protocol.
ANNEX

AMENDMENTS TO THE PROTOCOL OF 1988 RELATING TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

APPENDIX

MODIFICATIONS AND ADDITIONS TO THE APPENDIX TO THE ANNEX TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974

Record of Equipment for the Cargo Ship Safety Equipment Certificate (Form E)

1 In section 2, item 9 is deleted and items 10, 10.1 and 10.2 are renumbered as items 9, 9.1 and 9.2 respectively.

Record of Equipment for the Cargo Ship Safety Certificate (Form C)

2 In section 2, item 9 is deleted and items 10, 10.1 and 10.2 are renumbered as items 9, 9.1 and 9.2 respectively.

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ANNEX 5

RESOLUTION MSC.155(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION
ON MARITIME SEARCH AND RESCUE, 1979, AS AMENDED

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article III(2)(c) of the International Convention on Maritime Search and Rescue (SAR), 1979 (hereinafter referred to as "the Convention"), concerning the procedures for amending the Annex to the Convention, other than the provisions of paragraphs 2.1.4, 2.1.5, 2.1.7, 2.1.10, 3.1.2 or 3.1.3 thereof,

NOTING resolution A.920(22) entitled "Review of safety measures and procedures for the treatment of persons rescued at sea",

RECALLING ALSO the provisions of the Convention relating to the provision of assistance to any person in distress at sea regardless of the nationality or status of such person or the circumstances in which that person is found,

NOTING ALSO article 98 of the United Nations Convention on the Law of the Sea, 1982 regarding the duty to render assistance,

NOTING FURTHER the initiative taken by the Secretary-General to involve competent United Nations specialized agencies and programmes in the consideration of the issues addressed in this resolution, for the purpose of agreeing on a common approach which will resolve them in an efficient and consistent manner,

REALIZING the need for clarification of existing procedures to guarantee that persons rescued at sea will be provided a place of safety regardless of their nationality, status or the circumstances in which they are found,

REALIZING FURTHER that the intent of paragraph 3.1.9 of the Annex to the Convention, as amended by this resolution, is to ensure that in every case a place of safety is provided within a reasonable time. It is further intended that the responsibility to provide a place of safety, or to ensure that a place of safety is provided, falls on the Party responsible for the SAR region in which the survivors were recovered,

HAVING CONSIDERED, at its seventy-eighth session, amendments to the Convention proposed and circulated in accordance with article III(2)(a) thereof,

1. ADOPTS, in accordance with article III(2)(c) of the Convention, amendments to the Convention, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article III(2)(f) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 2006, unless, prior to that date, more than one third of the Parties, have notified their objections to the amendments;

3. INVITES Parties to the Convention to note that, in accordance with article III(2)(h) of the Convention, the amendments shall enter into force on 1 July 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article III(2)(d) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Parties to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Parties to the Convention;

6. REQUESTS ALSO the Secretary-General to take appropriate action in further pursuing his inter-agency initiative informing the Maritime Safety Committee of developments, in particular, with respect to procedures to assist in the provision of places of safety for persons in distress at sea, for action as the Committee may deem appropriate.
ANNEX

AMENDMENTS TO THE INTERNATIONAL CONVENTION ON MARITIME SEARCH AND RESCUE, 1979, AS AMENDED

CHAPTER 2
ORGANIZATION AND CO-ORDINATION

2.1 Arrangements for provision and co-ordination of search and rescue services

1 The following sentence is added at the end of the existing paragraph 2.1.1:

“The notion of a person in distress at sea also includes persons in need of assistance who have found refuge on a coast in a remote location within an ocean area inaccessible to any rescue facility other than as provided for in the annex.”

CHAPTER 3
CO-OPERATION BETWEEN STATES

3.1 Co-operation between States

2 In paragraph 3.1.6, the word “and” is deleted in subparagraph .2, a full stop is replaced by “; and” in subparagraph .3 and the following new subparagraph .4 is added after the existing subparagraph .3:

“.4 to make the necessary arrangements in co-operation with other RCCs to identify the most appropriate place(s) for disembarking persons found in distress at sea.”

3 The following new paragraph 3.1.9 is added after the existing paragraph 3.1.8:

“3.1.9 Parties shall co-ordinate and co-operate to ensure that masters of ships providing assistance by embarking persons in distress at sea are released from their obligations with minimum further deviation from the ships’ intended voyage, provided that releasing the master of the ship from these obligations does not further endanger the safety of life at sea. The Party responsible for the search and rescue region in which such assistance is rendered shall exercise primary responsibility for ensuring such co-ordination and co-operation occurs, so that survivors assisted are disembarked from the assisting ship and delivered to a place of safety, taking into account the particular circumstances of the case and guidelines developed by the Organization. In these cases, the relevant Parties shall arrange for such disembarkation to be effected as soon as reasonably practicable.”
CHAPTER 4
OPERATING PROCEDURES

4.8 Termination and suspension of search and rescue operations

The following new paragraph 4.8.5 is added after the existing paragraph 4.8.4:

“4.8.5 The rescue co-ordination centre or rescue sub-centre concerned shall initiate the process of identifying the most appropriate place(s) for disembarking persons found in distress at sea. It shall inform the ship or ships and other relevant parties concerned thereof.”

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ANNEX 6

RESOLUTION MSC.156(78)
(adopted on 20 May 2004)

ADOPITION OF AMENDMENTS TO THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization
concerning the functions of the Committee,

RECALLING FURTHER article XII and regulation I/1.2.3 of the International
Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW),
1978, hereinafter referred to as "the Convention", concerning the procedures for amending Part A
of the Seafarers' Training, Certification and Watchkeeping (STCW) Code,

HAVING CONSIDERED, at its seventy-eighth session, amendments to Part A of the
STCW Code, proposed and circulated in accordance with article XII(1)(a)(i) of the Convention,

1. ADOPTS, in accordance with article XII(1)(a)(iv) of the Convention, amendments to the
STCW Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article XII(1)(a)(vii)(2) of the Convention, that the
said amendments to the STCW Code shall be deemed to have been accepted on 1 January 2006,
unless, prior to that date, more than one third of Parties or Parties the combined merchant fleets
of which constitute not less than 50% of the gross tonnage of the world’s merchant shipping of
ships of 100 gross tonnage or more, have notified their objections to the amendments;

3. INVITES Parties to the Convention to note that, in accordance with article XII(1)(a)(ix)
of the Convention, the annexed amendments to the STCW Code shall enter into force on
1 July 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General, in conformity with article XII(1)(a)(v) of the
Convention, to transmit certified copies of the present resolution and the text of the amendments
contained in the Annex to all Parties to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and
its Annex to Members of the Organization, which are not Parties to the Convention.
ANNEX

AMENDMENTS TO THE SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW) CODE

PART A
MANDATORY STANDARDS REGARDING PROVISIONS
OF THE ANNEX TO THE STCW CONVENTION

Chapter I
Standards regarding general provisions

Section A-1/2 - Certificates and endorsements

1 In paragraph 1, the phrase “in 1995” in the heading of the certificate is deleted.

2 In paragraph 2, the phrase “in 1995” in the heading of the endorsement is deleted.

3 In paragraph 3, the phrase “in 1995” in the heading of the endorsement is deleted.

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ANNEX 7

RESOLUTION MSC.157(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE INTERNATIONAL MARITIME
DANGEROUS GOODS (IMDG) CODE

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization
concerning the functions of the Committee,

NOTING resolution MSC.122(75) by which it adopted the International Maritime
Dangerous Goods Code (hereinafter referred to as "the IMDG Code"), which has become
mandatory under chapter VII of the International Convention for the Safety of Life at Sea
(SOLAS), 1974, as amended (hereinafter referred to as "the Convention") on 1 January 2004,

NOTING ALSO article VIII(b) and regulation VII/1.1 of the Convention concerning the
amendment procedure for amending the IMDG Code,

HAVING CONSIDERED, at its seventy-eighth session, amendments to the IMDG Code,
proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the
IMDG Code, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the
said amendments shall be deemed to have been accepted on 1 July 2005, unless, prior to that
date, more than one third of the Contracting Governments to the Convention or Contracting
Governments the combined merchant fleets of which constitute not less than 50% of the gross
tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to the Convention to note that, in accordance with
article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on
1 January 2006 upon their acceptance in accordance with paragraph 2 above;

4. BEING COGNIZANT that amendments to other modal instruments dealing with the
carriage of dangerous goods come into force on 1 January 2005;

5. ENCOURAGES Contracting Governments to the Convention to apply the
aforementioned amendments in whole or in part on a voluntary basis as from 1 January 2005;

6. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the
Convention, to transmit certified copies of the present resolution and the text of the amendments
contained in the Annex to all Contracting Governments to the Convention;
7. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.
ANNEX

AMENDMENTS TO THE INTERNATIONAL MARITIME
DANGEROUS GOODS (IMDG) CODE*

VOLUME 1

Foreword

CONTENTS

Chapter 1.4  Add to read "Security provisions"

1.4.1  General provisions for companies, ships and facilities
1.4.2  General provisions for shore-side personnel
1.4.3  Provisions for high consequence dangerous goods

Chapter 2.4

Add:
2.4.5  Classification of organometallic substances
2.9.2  Amend to read "Assignment to class 9"

Chapter 4.2

4.2.6  Amend to read "Additional provisions for the use of road tank vehicles"
4.2.7  Delete

Chapter 4.3  Amend to read: "Use of bulk containers"

4.3.1  Amend to read "General provisions"
4.3.2  Amend to read "Additional provisions applicable to bulk goods of classes 4.2, 4.3, 5.1, 6.2, 7 and 8"

Chapter 5.5  Delete the whole chapter

PART 6  Amend title to read: "... PORTABLE TANKS, MULTIPLE-ELEMENT GAS CONTAINERS (MEGCs) AND ROAD TANK VEHICLES"

Chapter 6.2

6.2.2  Delete "certified"
6.2.3  Delete "certified"

* As adopted by resolution MSC.122(75)
Chapter 6.9  Add to read "Provisions for the design, construction, inspection and testing of bulk containers"

6.9.1  Definitions
6.9.2  Application and general provisions
6.9.3  Provisions for the design, construction, inspection and testing of freight containers used as bulk containers
6.9.4  Provisions for the design, construction, inspection and approval of bulk containers other than freight containers"

Chapter 7.9  Amend to read "Exemptions, Approvals and Certificates"

Add:
7.9.1  Exemptions

Add:
7.9.2  Approvals (including permits, authorizations or agreements) and certificates

Add:
7.9.3  Addresses of competent authorities

PART 1

Chapter 1.1

1.1.1.3  Amend "materials" to read "material".

(new)
1.1.1.5.2  Add "chapter 1.4 (security provisions) except 1.4.1.1, which will be mandatory;" and renumber the remaining paragraphs.

(old)
1.1.1.5.5  Delete "chapter 3.5 (Transport schedules for class 7 - radioactive material)".

1.1.1.5.8  Add "section 7.9.3 (addresses of competent authorities);", and renumber accordingly.

1.1.2.2.1  Regulation 1, delete second footnote and replace "†" in 1.3.3 with "*"

1.1.3.1.1  Amend to read "These provisions establish standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to persons, property and the environment that are associated with the transport of radioactive material. These provisions, which are based upon the International Atomic Energy Agency's (IAEA's) Regulations for the safe transport of radioactive material, 1996 edition, (Revised) Safety Standards Series No. TS-R-1 (ST-1, Revised) (ISBN 92-0-104996-X), establish requirements particularly for shipowners and for those handling packages containing radioactive materials in ports and on board ships without necessarily consulting IAEA regulations."
However, the published IAEA regulations also include Schedules of requirements for transport of specified types of radioactive material consignments, which are not included in this Code. These schedules summarize the requirements of those regulations, but do not contain any additional provisions. Schedules may be consulted for quick reference, but do not take precedence over the provisions of TS-R-1 or of this Code."

1.1.3.6 Add a new sub-section to read as follows:

"1.1.3.6 Non-compliance

1.1.3.6.1 In the event of non-compliance with any limit in this Code applicable to radiation level or contamination:

.1 the consignor shall be informed of the non-compliance by the carrier if the non-compliance is identified during transport; or by the consignee if the non-compliance is identified on receipt;

.2 the carrier, consignor or consignee, as appropriate shall:

(i) take immediate steps to mitigate the consequences of the non-compliance;

(ii) investigate the non-compliance and its causes, circumstances and consequences;

(iii) take appropriate action to remedy the causes and circumstances that led to the non-compliance and to prevent a recurrence of similar circumstances that led to the non-compliance; and

(iv) communicate to the relevant competent authority(ies) the causes of the non-compliance and on corrective or preventive actions taken or to be taken; and

.3 communication of the non-compliance to the consignor and relevant competent authority(ies), respectively, shall be made as soon as practicable and shall be immediate whenever emergency exposure has developed or is developing.".

1.1.4.1 Amend to read "… or vapours under normal conditions of transport".

Chapter 1.2

1.2.1 In the definition of "tank", delete the words "with a capacity of not less than 450 litres" and add at the end "and has a capacity of not less than 450 litres when used for the transport of gases of class 2.".
Insert a new definition for "Routine maintenance of flexible IBCs" under "Intermediate Bulk Containers (IBCs)" as follows:

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

a) cleaning; or

b) replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer’s specification;

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

NOTE: For rigid IBCs, see "Routine maintenance of rigid IBCs"."

Replace "Routine maintenance of IBCs" with "Routine maintenance of rigid IBCs" and add a note at the end of the existing text to read as follows:

"NOTE: For flexible IBCs, see "Routine maintenance of flexible IBCs".".

In the definition of "Repaired IBCs", insert the word "rigid" before "IBCs" in the last but one sentence and add the following sentence at the end of the existing text: "Flexible IBCs are not repairable, unless approved by the competent authority.".

Delete the last three sentences of the definition of "Road tank vehicle".

Delete existing definition of "Bulk packagings".

Insert the following new definition:

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

Bulk containers are:

- of a permanent character and accordingly strong enough to be suitable for repeated use;

- specially designed to facilitate the transport of goods by one or more means of transport without intermediate reloading;

- fitted with devices permitting ready handling; and

- have a capacity of not less than 1 cubic metre.
Examples of bulk containers are freight containers, offshore bulk containers, skips, bulk bins, swap bodies, trough-shaped containers, roller containers, load compartments of vehicles.

In the definition of "Aerosols", for "6.2.2" read "6.2.4".

In the definition of "Recycled plastics material" for "6.1.1.2.5" read "6.1.1.3".

Amend existing definition to read:

_Elevated temperature substance_ means a substance which is transported or offered for transport:

- in the liquid state at a temperature at or above 100 °C;
- in the liquid state with a flashpoint above 61°C that is intentionally heated to a temperature above its flashpoint; or
- in a solid state and at a temperature at or above 240 °C.

Amend the last sentence of the definition of "Freight container" to read:

"For freight containers for the transport of radioactive material, see 2.7.2."

Insert the following new definitions:

_Offshore bulk container_ means a bulk container specially designed for repeated use for the transport of dangerous goods to, from and between offshore facilities. An offshore bulk container is designed and constructed in accordance with MSC/Circ.860 "Guidelines for the approval of containers handled in open seas".

_GHS_ means the _Globally Harmonized System of Classification and Labelling of Chemicals_, published by the United Nations as document ST/SG/AC.10/30.".

1.2.2.4 Amend "1.2.2.4.1, 1.2.2.4.2 and 1.2.2.4.3" to read as sub-paragraphs .1, .2 and .3, begin each with "in" and end .1 and .2 with a semi-colon.

### Chapter 1.3

1.3.1.1 Amend "shall" to read "should". Add the following sentence at the end: "Training requirements specific to security of dangerous goods in Chapter 1.4 should also be addressed.".

1.3.1.4.1 amend to read "identification".

1.3.1.4.2 for "bulk packaging" read "bulk container".

1.3.1.4.6 for "discharging" read "discharge".
1.3.1.3 Insert a new 1.3.1.3 to read as follows:

"Records of all safety training undertaken should be kept by the employer and made available to the employee if requested."

Renumber existing 1.3.1.3 to 1.3.1.6 as 1.3.1.4 to 1.3.1.7.

In (new) 1.3.1.5, amend references in headings to "1.3.1.6" to read "1.3.1.7";

In (new) 1.3.1.7.8 add "(CSC)" after "Containers".

Chapter 1.4

Add a new chapter as follows:

"CHAPTER 1.4

SECURITY PROVISIONS

Introductory note

The provisions of this chapter address the security of dangerous goods in transport by sea. National competent authorities may apply additional security provisions, which should be considered when offering or transporting dangerous goods. The provisions of this chapter remain recommendatory except 1.4.1.1 (see 1.1.1.5).

1.4.1 General provisions for companies, ships and port facilities

1.4.1.1 The relevant provisions of chapter XI-2 of SOLAS 74, as amended, and of part A of the International Ship and Port Facility Security (ISPS) Code apply to companies, ships and port facilities engaged in the transport of dangerous goods and to which regulation XI-2 of SOLAS 74, as amended, apply taking into account the guidance given in part B of the ISPS Code.

1.4.1.2 For cargo ships of less than 500 gross tons engaged in the transport of dangerous goods, it is recommended that Contracting Governments to SOLAS 74, as amended, consider security provisions for these cargo ships.

1.4.1.3 Any shore-based company personnel, ship based personnel and port facility personnel engaged in the transport of dangerous goods should be aware of the security requirements for such goods, in addition to those specified in the ISPS Code, and commensurate with their responsibilities.
1.4.1.4 The training of the company security officer, shore-based company personnel having specific security duties, port facility security officer and port facility personnel having specific duties, engaged in the transport of dangerous goods, should also include elements of security awareness related to those goods.

1.4.1.5 All shipboard personnel and port facility personnel who are not mentioned in 1.4.1.4 and are engaged in the transport of dangerous goods should be familiar with the provisions of the relevant security plans related to those goods, commensurate with their responsibilities.

1.4.2 General provisions for shore-side personnel

1.4.2.1 For the purpose of this subsection, Shore-side personnel covers individuals mentioned in 1.3.1.2. However, the provisions of 1.4.2 do not apply to:

- the company security officer and appropriate shore-based company personnel mentioned in 13.1 of part A of the ISPS Code,
- the ship security officer and the shipboard personnel mentioned in 13.2 and 13.3 of part A of the ISPS Code,
- the port facility security officer, the appropriate port facility security personnel and the port facility personnel having specific security duties mentioned in 18.1 and 18.2 of part A of the ISPS Code.

For the training of those officers and personnel, refer to the International Ship and Port Facility Security (ISPS) Code.

1.4.2.2 Shore-side personnel engaged in transport by sea of dangerous goods should consider security provisions for the transport of dangerous goods commensurate with their responsibilities.

1.4.2.3 Security training

1.4.2.3.1 The training of shore-side personnel, as specified in chapter 1.3, shall also include elements of security awareness.

1.4.2.3.2 Security awareness training should address the nature of security risks, recognizing security risks, methods to address and reduce risks and actions to be taken in the event of a security breach. It should include awareness of security plans (if appropriate, refer to 1.4.3) commensurate with the responsibilities of individuals and their part in implementing security plans.

1.4.2.3.3 Such training should be provided or verified upon employment in a position involving dangerous goods transport and should be periodically supplemented with retraining.

1.4.2.3.4 Records of all security training undertaken should be kept by the employer and made available to the employee if requested.
1.4.3 Provisions for high consequence dangerous goods

1.4.3.1 For the purposes of this section, high consequence dangerous goods are those which have the potential for misuse in a terrorist incident and which may, as a result, produce serious consequences such as mass casualties or mass destruction. The following is an indicative list of high consequence dangerous goods:

Class 1 Division 1.1 explosives
Class 1 Division 1.2 explosives
Class 1 Division 1.3 compatibility group C explosives
Class 1 Division 1.5 explosives
Class 2.1 Flammable gases in quantities greater than 3000 l in a road tank vehicle, a railway tank wagon or a portable tank
Class 2.3 Toxic gases
Class 3 Flammable liquids of packing groups I and II in quantities greater than 3000 l in a road tank vehicle, a railway tank wagon or a portable tank
Class 3 Desensitized liquid explosives
Class 4.1 Desensitized solid explosives
Class 4.2 Goods of packing group I in quantities greater than 3000 kg or 3000 l in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 4.3 Goods of packing group I in quantities greater than 3000 kg or 3000 l in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 5.1 Oxidizing liquids of packing group I in quantities greater than 3000 l in a road tank vehicle, a railway tank wagon or a portable tank
Class 5.1 Perchlorates, ammonium nitrate and ammonium nitrate fertilizers in quantities greater than 3000 kg or 3000 l in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 6.1 Toxic substances of packing group I
Class 6.2 Infectious substances of category A
Class 7  Radioactive material in quantities greater than 3000 A1 (special from) or 3000 A2, as applicable, in type B or type C packages

Class 8  Corrosive substances of packing group I in quantities greater than 3000 kg or 3000 l in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container

For purposes of non-proliferation of nuclear material, the Convention on Physical Protection of Nuclear Material applies to international transport, supported by IAEA INFCIRC/225 (Rev.4).

1.4.3.2  The provisions of this section do not apply to ships and to port facilities (see the ISPS Code for ship security plan and for port facility security plan).

1.4.3.3  Consignors and others engaged in the transport of high consequence dangerous goods should adopt, implement and comply with a security plan that addresses at least the elements specified in 1.4.3.4.

1.4.3.4  The security plan should comprise at least the following elements:

.1 specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;

.2 records of dangerous goods or types of dangerous goods transported;

.3 review of current operations and assessment of vulnerabilities, including intermodal transfer, temporary transit storage, handling and distribution, as appropriate;

.4 clear statements of measures, including training, policies (including response to higher threat conditions, new employee/employment verification, etc.), operating practices (e.g. choice/use of routes where known, access to dangerous goods in temporary storage, proximity to vulnerable infrastructure, etc.), equipment and resources that are to be used to reduce security risks;

.5 effective and up to date procedures for reporting and dealing with security threats, breaches of security or security-related incidents;

.6 procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;

.7 measures to ensure the security of transport information contained in the plan; and

.8 measures to ensure that the distribution of transport information is limited as far as possible. (Such measures shall not preclude provision of transport documentation required by chapter 5.4 of this Code.)
PART 2

Chapter 2.0

2.0.3.6 Add "*" after "3 I" in first column.

2.1.0 In Note 1, amend to read: "It is intended that these entries should only be used when …".

Chapter 2.3

2.3.1.4 In the last sentence, replace "and UN 3343" with ", UN 3343, UN 3357 and UN 3379".

2.3.2.5 In the last sentence, delete "paragraph".

Chapter 2.4

Add a new introductory note to read as follows:

"2.4.0 Since organometallic substances can be classified in classes 4.2 or 4.3 with additional subsidiary risks, depending on their properties, a specific classification flowchart for these substances is given in 2.4.5."

2.4.2.3.2.2 Amend the two first sentences of this paragraph to read as follows:

"Self-reactive substances permitted for transport in packagings are listed in 2.4.2.3.2.3, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the appropriate generic entry of the Dangerous Goods List (UN 3221 to UN 3240) is assigned, and appropriate subsidiary risks and remarks providing relevant transport information are given.".

2.4.2.3.2.3 In the title, add at the end: "in packagings".

Add the following text before the existing Note 1: "In the column "Packing Method" codes "OP1" to "OP8" refer to packing methods in packing instruction P520. Self-reactive substances to be transported shall fulfil the classification and the control and emergency temperatures (derived from the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23".

Delete Note 2. As a consequence, "Note 1" becomes "Note".
Within the table in section 2.4.2.3.2.3, in the second of the entries for UN 3226, for "1,1-AZODI(HEXAHYDROBENZONITRILE)" read "1,1'-AZODI(HEXAHYDROBENZONITRILE)".

Within the table in section 2.4.2.3.2.3, in the fourth of the entries for UN 3236 on that page, for "3-(HYDROXYETHOXY)-4-(PYRROLIDIN-1YL)-BENZENEDIAZONIUM ZINC CHLORIDE" read "3-(2-HYDROXYETHOXY)-4-(PYRROLIDIN-1-YL)-BENZENEDIAZONIUM ZINC CHLORIDE".

2.4.2.3.2.4 Amend the beginning of the first sentence to read: "Classification of self-reactive substances not listed in 2.4.2.3.2.3, packing instruction IBC 520 or portable tank instruction T23 and assignment to…".

2.4.2.4.1.1 Amend the list of UN numbers at the end to read ", UN 3370, UN 3376 and UN 3380."

2.4.5 Add a new paragraph 2.4.5 and a new flowchart as follows:

"2.4.5 Classification of organometallic substances

Depending on their properties, organometallic substances may be classified in classes 4.2 or 4.3, as appropriate, in accordance with the following flowchart:
Flowchart scheme for organometallic substances¹, ²

1, 2

If applicable and testing is relevant, taking into account reactivity properties, class 6.1 and class 8 properties shall be considered according to the Precedence of hazards table 2.0.3.6.

Test methods N.1 to N.5 can be found in the United Nations Manual of Tests and Criteria, Part III, Section 33.
Chapter 2.5

2.5.3.2.3 Amend the two first sentences of this paragraph to read as follows:

"Organic peroxides permitted for transport in packagings are listed in 2.5.3.2.4, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the generic entry of the Dangerous Goods List (UN 3101 to UN 3120) is assigned, appropriate subsidiary risks and remarks providing relevant transport information are given."

2.5.3.2.4 In the title add, at the end: "in packagings".

Replace the existing note under the title with the following text:

"Note: Packing Method" codes "OP1" to "OP8" refer to packing methods in packing instruction P520. Peroxides to be transported shall fulfil the classification and the control and emergency temperatures (derived form the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23."

In the table:
In the column "Subsidiary risks and remarks", delete "30)".
Amend the entries listed below as follows:

<table>
<thead>
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<th>Subsidiary risks and remarks</th>
<th>Original Entry</th>
<th>New Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>30)</td>
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<td></td>
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</tbody>
</table>
### List of currently assigned organic peroxides

<table>
<thead>
<tr>
<th>Number</th>
<th>ORGANIC PEROXIDE</th>
<th>Concentration (%)</th>
<th>Diluent type A (%)</th>
<th>Diluent type B (%)</th>
<th>Inert solid (%)</th>
<th>Water (%)</th>
<th>Packing Method</th>
<th>Control Temperature (°C)</th>
<th>Emergency temperature (°C)</th>
<th>Subsidiary risks and remarks</th>
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<td>3101</td>
<td>tert-AMYL PEROXY-3,5,5-TRIMETHYLMETHANOATE</td>
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<tr>
<td></td>
<td>tert-BUTYL PEROXYACETATE</td>
<td>&gt;52-77</td>
<td>≥ 23</td>
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<tr>
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<td>1,1-DI-(tert-BUTYLPEROXY)CYCLOHEXANE</td>
<td>&gt; 80 – 100</td>
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<tr>
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<td>1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE</td>
<td>&gt;90-100</td>
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<td></td>
<td>METHYL ETHYL KETONE PEROXIDE(S)</td>
<td>see remark 8)</td>
<td>≥ 48</td>
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<tr>
<td></td>
<td>2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXYNE-3</td>
<td>&gt; 86 – 100</td>
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<tr>
<td>3102</td>
<td>tert-BUTYL MONOPEROXYMALEATE</td>
<td>&gt;52-100</td>
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<tr>
<td></td>
<td>3-CHLOROPEROXYBENZOIC ACID</td>
<td>&gt;57-86</td>
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<td>&gt; 6</td>
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<td>DI-4-CHLOROBENZOYL PEROXIDE</td>
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<td>≥ 23</td>
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<td>OP5</td>
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<tr>
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<td>DI-2,4-DICHLOROBENZOYL PEROXIDE</td>
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<td>≥ 23</td>
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<td>OP5</td>
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<td>≥ 73</td>
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<td>&gt;82-100</td>
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<td>OP5</td>
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<td>OP5</td>
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<td>DISUCCINIC ACID PEROXIDE</td>
<td>&gt;72-100</td>
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<td>OP4</td>
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<tr>
<td>3103</td>
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<td>p-MENTHYL HYDROPEROXIDE</td>
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<td>Diluent type A (%)</td>
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<td>Inert solid (%)</td>
<td>Water (%)</td>
<td>Packing Method</td>
<td>Control Temperature (°C)</td>
<td>Emergency temperature (°C)</td>
<td>Subsidiary risks and remarks</td>
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<td>3111 tert-BUTYL PEROXYISOBUTYRATE</td>
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<td>OP5</td>
<td>+15</td>
<td>+20</td>
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<td>DISOBUTYRYL PEROXIDE</td>
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<td>ISOPROPYL sec-BUTYL PEROXYDICARBONATE + DI-sec-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE</td>
<td>≤ 52 + 28 + 22</td>
<td></td>
<td>OP5</td>
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<td>3112 ACETYL CYCLOHEXANESULPHONYL PEROXIDE</td>
<td>&gt; 82</td>
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<td>DICYCLOHEXYL PEROXYDICARBONATE</td>
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<td>OP3</td>
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<td>+15</td>
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<td>OP2</td>
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<td>-5</td>
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<td>DI-(2-METHYLBENZOYL) PEROXIDE</td>
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<td>OP5</td>
<td>+30</td>
<td>+35</td>
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<td>3113 tert-AMYL PEROXYPIVALATE</td>
<td>≤ 77</td>
<td>≥ 23</td>
<td>OP5</td>
<td>+10</td>
<td>+15</td>
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<td>tert-BUTYL PEROXYDIETHYLACETATE</td>
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<td>OP5</td>
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<td>tert-BUTYL PEROXY-2-ETHYLHEXANOATE</td>
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<td>OP6</td>
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<td>&gt; 67 – 77</td>
<td>≥ 23</td>
<td>OP5</td>
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<td>+10</td>
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<td>DI-sec-BUTYL PEROXYDICARBONATE</td>
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<td>≥ 23</td>
<td>OP4</td>
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<td>DI-(2-ETHYLHEXYL) PEROXYDICARBONATE</td>
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<td>OP5</td>
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<td>OP5</td>
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<td>DI-n-PROPYL PEROXYDICARBONATE</td>
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<td>OP3</td>
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<td>≥ 23</td>
<td>OP5</td>
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<tr>
<td>ORGANIC PEROXIDE, LIQUID, SAMPLE, TEMPERATURE CONTROLLED</td>
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<td>≥ 20</td>
<td>OP5</td>
<td>+30</td>
<td>+35</td>
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<td>3114 DI-(4-tert-BUTYLCYCLOHEXYL) PEROXYDICARBONATE</td>
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<td>OP6</td>
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<td>+20</td>
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<td>ORGANIC PEROXIDE</td>
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<td>Diluent type A (%)</td>
<td>Diluent type B (%)</td>
<td>Inert solid (%)</td>
<td>Water (%)</td>
<td>Packing Method</td>
<td>Control Temperature (°C)</td>
<td>Emergency temperature (°C)</td>
<td>Subsidiary risks and remarks</td>
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<td>≥ 23</td>
<td>OP7</td>
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<td>≤ 31 + ≤ 36</td>
<td>≥ 33</td>
<td>OP7</td>
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<td>OP7</td>
<td>+15</td>
<td>+20</td>
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<td>≥ 23</td>
<td>OP7</td>
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<td>+5</td>
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<td>≥ 23</td>
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<td>+10</td>
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<td>≥ 23</td>
<td>OP7</td>
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<td>≥ 23</td>
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<td>≥ 73</td>
<td>OP7</td>
<td>+20</td>
<td>+25</td>
<td>7) 13)</td>
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<tr>
<td>DI-n-BUTYL PEROXYDICARBONATE</td>
<td>&gt; 27 – 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-15</td>
<td>-5</td>
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<tr>
<td>DI-sec-BUTYL PEROXYDICARBONATE</td>
<td>≤ 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-15</td>
<td>-5</td>
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<tr>
<td>DI-(2-ETHOXYETHYL)PEROXYDICARBONATE</td>
<td>≤ 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-10</td>
<td>0</td>
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<tr>
<td>DI-(2-ETHYLHEXYL)PEROXYDICARBONATE</td>
<td>≤ 77</td>
<td>≥ 23</td>
<td>OP7</td>
<td>-15</td>
<td>-5</td>
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<tr>
<td>DISOBUTYRYL PEROXIDE</td>
<td>≤ 32</td>
<td>≥ 68</td>
<td>OP7</td>
<td>-20</td>
<td>-10</td>
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<tr>
<td>DISOPROPYL PEROXYDICARBONATE</td>
<td>≤ 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-20</td>
<td>-10</td>
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<tr>
<td>DISOPROPYL PEROXYDICARBONATE</td>
<td>≤ 28</td>
<td>≥ 72</td>
<td>OP7</td>
<td>-15</td>
<td>-5</td>
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<tr>
<td>DI-(3-METHOXYBUTYL) PEROXYDICARBONATE</td>
<td>≤ 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-5</td>
<td>+5</td>
<td></td>
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<tr>
<td>DI-(3-METHYL(2-ETHYLHEXYL)PEROXYDICARBONATE + BENZOYL (3-METHYLBENZOYL) PEROXIDE + DIBENZOYL PEROXIDE</td>
<td>≤ 20 + 18 + ≤ 4</td>
<td>≥ 58</td>
<td>OP7</td>
<td>+35</td>
<td>+40</td>
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<td>≤ 52</td>
<td>≥ 48</td>
<td>OP7</td>
<td>-10</td>
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<tr>
<td>DI-(3,5,5-TRIMETHYLBANJANOL) PEROXIDE</td>
<td>&gt; 38 – 82</td>
<td>≥ 18</td>
<td>OP7</td>
<td>0</td>
<td>+10</td>
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<td>1-(2-ETHYLHEXANOLPEROXY)-1,3-DIMETHYL BUTYL PEROXYPIVALATE</td>
<td>≤ 52</td>
<td>≥ 45</td>
<td>≥ 10</td>
<td>OP7</td>
<td>-20</td>
<td>-10</td>
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<tr>
<td>tert-HEXYL PEROXYNEODECANOATE</td>
<td>≤ 71</td>
<td>≥ 29</td>
<td>OP7</td>
<td>0</td>
<td>+10</td>
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<tr>
<td>tert-HEXYL PEROXYPIVALATE</td>
<td>≤ 72</td>
<td>≥ 28</td>
<td>OP7</td>
<td>+10</td>
<td>+15</td>
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<tr>
<td>ISOPROPYL sec-BUTYL PEROXYDICARBONATE</td>
<td>≤ 32 + ≤ 38</td>
<td>OP7</td>
<td>-20</td>
<td>-10</td>
<td></td>
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<tr>
<td>DI-sec-BUTYL PEROXYDICARBONATE</td>
<td>≤ 12 –18+</td>
<td>OP7</td>
<td>+35</td>
<td>+40</td>
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<tr>
<td>DI-ISOPROPYL PEROXYDICARBONATE</td>
<td>≤ 12 – 15</td>
<td>OP7</td>
<td>-15</td>
<td>+20</td>
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<td>METHYLCYCLOHEXANONE PEROXIDE(S)</td>
<td>≤ 67</td>
<td>≥ 33</td>
<td>OP7</td>
<td>+5</td>
<td>+5</td>
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<tr>
<td>1,1,3,3-TETRAMETHYL BUTYL PEROXY-2-ETHYLHEXANOATE</td>
<td>≤ 100</td>
<td>OP7</td>
<td>+15</td>
<td>+20</td>
<td></td>
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<tr>
<td>1,1,3,3-TETRAMETHYL BUTYL PEROXYNEODECANOATE</td>
<td>≤ 72</td>
<td>≥ 28</td>
<td>OP7</td>
<td>-5</td>
<td>+5</td>
<td></td>
<td></td>
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<tr>
<td>1,1,3,3-TETRAMETHYL BUTYL PEROXYPIVALATE</td>
<td>≤ 77</td>
<td>≥ 23</td>
<td>OP7</td>
<td>0</td>
<td>+10</td>
<td></td>
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<tr>
<td>DICETYL PEROXYDICARBONATE</td>
<td>≤ 100</td>
<td>OP7</td>
<td>+30</td>
<td>+35</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>DIMYRISTYL PEROXYDICARBONATE</td>
<td>≤ 100</td>
<td>OP7</td>
<td>+20</td>
<td>+25</td>
<td></td>
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<tr>
<td>DI-n-NONANOYL PEROXIDE</td>
<td>≤ 100</td>
<td>OP7</td>
<td>0</td>
<td>+10</td>
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<td>DISUCCINIC ACID PEROXIDE</td>
<td>≤ 28</td>
<td>≤ 28</td>
<td>OP7</td>
<td>+10</td>
<td>+15</td>
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<tr>
<td>tert-BUTYL PEROXY-2-ETHYLHEXANOATE</td>
<td>&gt; 32 – 52</td>
<td>≥ 48</td>
<td>OP8</td>
<td>+30</td>
<td>+35</td>
<td></td>
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</tr>
<tr>
<td>DI-n-BUTYL PEROXYDICARBONATE</td>
<td>≤ 27</td>
<td>≥ 73</td>
<td>OP8</td>
<td>-10</td>
<td>0</td>
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<td>Number (generic entry)</td>
<td>ORGANIC PEROXIDE</td>
<td>Concentration (%)</td>
<td>Diluent type A (%)</td>
<td>Diluent type B (%)</td>
<td>Inert solid (%)</td>
<td>Water (%)</td>
<td>Packing Method</td>
<td>Control Temperature (°C)</td>
<td>Emergency temperature (°C)</td>
<td>Subsidiary risks and remarks</td>
</tr>
<tr>
<td>------------------------</td>
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<tr>
<td>tert-BUTYL PEROXYNEOHEPTANOATE</td>
<td>≤ 42 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
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<td>DI-(2-ETHYLHEXYL)PEROXYDICARBONATE</td>
<td>≤ 62 as a stable dispersion in water</td>
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<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-15</td>
<td>-5</td>
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<td>1,1-DIMETHYL-3-HYDROXYBUTYL PEROXYNEOHEPTANOATE</td>
<td>≤ 52 ≥ 48</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
<td></td>
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<td>DIPROPIONYL PEROXIDE</td>
<td>≤ 27 ≥ 73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+15</td>
<td>+20</td>
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<td>3118 tert-BUTYL PEROXY-2-ETHYLHEXANOATE</td>
<td>≤ 52 ≥ 48</td>
<td></td>
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<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
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<td>tert-BUTYL PEROXYNEODECANOATE</td>
<td>≤ 42 as a stable dispersion in water (frozen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-15</td>
<td>-5</td>
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<td>DI-n-BUTYL PEROXYDICARBONATE</td>
<td>≤ 42 as a stable dispersion in water (frozen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
<td></td>
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<td>PEROXYLAURIC ACID</td>
<td>≤ 100</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+35</td>
<td>+40</td>
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<td>3119 tert-BUTYL PEROXY-2-ETHYLHEXANOATE</td>
<td>≤ 32 ≥ 68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+40</td>
<td>+45</td>
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<tr>
<td>tert-BUTYL PEROXYNEODECANOATE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
<td></td>
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<tr>
<td>tert-BUTYL PEROXYNEODECANOATE</td>
<td>≤ 52 ≥ 68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>0</td>
<td>+10</td>
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<tr>
<td>tert-BUTYL PEROXYPIVALATE</td>
<td>≤ 27 ≥ 73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+30</td>
<td>+35</td>
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<td>CUMYL PEROXYNEODECANOATE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-10</td>
<td>0</td>
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<td>DI-(4-tert-BUTYL CYCLOHEXYL)PEROXYDICARBONATE</td>
<td>≤ 42 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+30</td>
<td>+35</td>
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<tr>
<td>DICHEXYL PEROXYDICARBONATE</td>
<td>≤ 42 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+30</td>
<td>+35</td>
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<tr>
<td>DICYCLOHEXYL PEROXYDICARBONATE</td>
<td>≤ 62 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+15</td>
<td>+20</td>
<td></td>
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<tr>
<td>DI-(2-ETHYLHEXYL) PEROXYDICARBONATE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-15</td>
<td>-5</td>
<td></td>
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<tr>
<td>DIMYRISTYL PEROXYDICARBONATE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+20</td>
<td>+25</td>
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<tr>
<td>DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-10</td>
<td>+15</td>
<td></td>
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<tr>
<td>DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE</td>
<td>≤ 38 ≥ 62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>+20</td>
<td>+25</td>
<td></td>
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<tr>
<td>1,1,3,3-TETRAMETHYLBUTYL PEROXYNEODECANOATE</td>
<td>≤ 52 as a stable dispersion in water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OP8</td>
<td>-5</td>
<td>+5</td>
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<tr>
<td>3120 DI-(2-ETHYLHEXYL) PEROXYDICARBONATE</td>
<td>≤ 52 as a stable dispersion in water (frozen)</td>
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<td></td>
<td></td>
<td>OP8</td>
<td>-15</td>
<td>-5</td>
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<td>Exempt</td>
<td>CYCLOHEXANONE PEROXIDE(S)</td>
<td>≤ 32 ≥ 68</td>
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<td>DIBENZOYL PEROXIDE</td>
<td>≤ 35 ≥ 65</td>
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<tr>
<td></td>
<td>DI-(2-tert-BUTYLPEROXYISOPROPYL)BENZENE(S)</td>
<td>≤ 42 ≥ 58</td>
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<tr>
<td></td>
<td>DI-4-CHLOROBENZYL PEROXIDE</td>
<td>≤ 32 ≥ 68</td>
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<tr>
<td></td>
<td>DICUMYL PEROXIDE</td>
<td>≤ 32 ≥ 48</td>
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</table>
Remarks on 2.5.3.2.4

1) Diluent type B may always be replaced by diluent type A. The boiling point of diluent type B shall be at least 60°C higher than the SADT of the organic peroxide.
2) Available oxygen ≤ 4.7%
3) “EXPLOSIVE” subsidiary risk label required. (Model No. 1, see 5.2.2.2.2)
4) Diluent may be replaced by di-tert-butyl peroxide.
5) Available oxygen ≤ 9%
6) With ≤ 9% hydrogen peroxide; available oxygen ≤ 10%
7) Only non-metallic packagings are allowed.
8) Available oxygen > 10% and < 10.7%, with or without water.
9) Available oxygen ≤ 10%, with or without water.
10) Available oxygen ≤ 8.2%, with or without water.
11) See 2.5.3.2.5.1
12) Up to 2000 kg per receptacle assigned to ORGANIC PEROXIDE TYPE F on the basis of large scale trials.
13) “CORROSIVE” subsidiary risk label required (Model No; 8, see 5.2.2.2.2)
14) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.4
15) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.5
16) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.6
17) Addition of water to this organic peroxide will decrease its thermal stability.
18) No “CORROSIVE” subsidiary risk required.
19) Mixtures with hydrogen peroxide, water and acid(s).
20) With diluent type A, with or without water.
21) With ≥ 25% diluent type A by mass, and in addition ethylbenzene.
22) With ≥ 19% diluent type A by mass, and in addition methyl isobutyl ketone.
23) With < 6% di-tert-butyl peroxide.
24) With ≤ 8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.
25) Diluent type B with boiling point > 110 °C.
26) With < 0.5% hydroperoxides content.
27) For concentrations more than 56%, a “CORROSIVE” subsidiary risk label is required (Model No. 8, see 5.2.2.2.2).
28) Available active oxygen ≤ 7.6% in diluent Type A having a 95% boil-off point in the range 200 - 260°C.
29) Not subject to the provisions of this Code for class 5.2.
2.5.3.2.5  Amend the beginning of the first sentence to read: "Classification of organic peroxides not listed in 2.5.3.2.4, packing instruction IBC520 or portable tank instruction T23 and assignment to…".

Chapter 2.6

2.6.1  In Class 6.2 text, replace "or recombinant micro-organisms (hybrid or mutant), that are known or reasonably expected to cause infectious disease in animals or humans." with "and other agents such as prions, which can cause disease in humans or animals.".

2.6.2.1.1  Replace the existing definition for "LD50 for acute oral toxicity" with the following text: "LD50 (median lethal dose) for acute oral toxicity is the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50 per cent of young adult albino rats when administered by the oral route. The LD50 value is expressed in terms of mass of test substance per mass of test animal (mg/kg).".

2.6.2.2.4.3  Move the footnote "**" as a Note in the main text and replace "Tear gases" with "Tear gas substances".

2.6.3  Replace the existing text with the following:

"2.6.3  Class 6.2 - Infectious substances

2.6.3.1  Definitions

For the purposes of this Code:

2.6.3.1.1  Infectious substances are substances which are known or are reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

2.6.3.1.2  Biological products are those products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigation purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.

2.6.3.1.3  Cultures (laboratory stocks) are the result of a process by which pathogens are amplified or propagated in order to generate high concentrations, thereby increasing the risk of infection when exposure to them occurs. This definition refers to cultures prepared for the intentional generation of pathogens and does not include cultures intended for diagnostic and clinical purposes."
2.6.3.1.4 Genetically modified micro-organisms and organisms are micro-organisms and organisms in which genetic material has been purposely altered through genetic engineering in a way that does not occur naturally.

2.6.3.1.5 Medical or clinical wastes are wastes derived from the medical treatment of animals or humans or from bio-research.

2.6.3.2 Classification of infectious substances

2.6.3.2.1 Infectious substances shall be classified in class 6.2 and assigned to UN 2814, UN 2900 or UN 3373, as appropriate.

2.6.3.2.2 Infectious substances are divided into the following categories:

2.6.3.2.2.1 Category A: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease to humans or animals. Indicative examples of substances that meet these criteria are given in the table in this paragraph.

Note: An exposure occurs when an infectious substance is released outside the protective packaging, resulting in physical contact with humans or animals.

(a) Infectious substances meeting these criteria which cause disease in humans or in both humans and animals shall be assigned to UN 2814. Infectious substances which cause disease only in animals shall be assigned to UN 2900.

(b) Assignment to UN 2814 or UN 2900 shall be based on the known medical history and symptoms of the source human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the human or animal source.

Note 1: The Proper Shipping Name for UN 2814 is INFECTIOUS SUBSTANCE, AFFECTING HUMANS. The Proper Shipping Name for UN 2900 is INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only.

Note 2: The following table is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in the table but which meet the same criteria shall be assigned to Category A. In addition, if there is doubt as to whether or not a substance meets the criteria it shall be included in Category A.

Note 3: In the following table, the micro-organism names written in italics are bacteria, mycoplasmas, rickettsia or fungi.
<table>
<thead>
<tr>
<th>UN Number and Proper Shipping Name</th>
<th>Micro-organism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN 2814</strong></td>
<td></td>
</tr>
<tr>
<td>Infectious substance, affecting humans</td>
<td></td>
</tr>
<tr>
<td>Bacillus anthracis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Brucella abortus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Brucella melitensis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Brucella suis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Burkholderia mallei - Pseudomonas mallei – Glanders (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Burkholderia pseudomallei – Pseudomonas pseudomallei (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Chlamydia psittaci - avian strains (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Clostridium botulinum (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Coccidioides immitis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Coxiella burnetii (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Crimean-Congo hemorrhagic fever virus</td>
<td></td>
</tr>
<tr>
<td>Dengue virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Eastern equine encephalitis virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli, verotoxigenic (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Ebola virus</td>
<td></td>
</tr>
<tr>
<td>Flexal virus</td>
<td></td>
</tr>
<tr>
<td>Francisella tularensis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Guanarito virus</td>
<td></td>
</tr>
<tr>
<td>Hantaan virus</td>
<td></td>
</tr>
<tr>
<td>Hantaviruses causing hantavirus pulmonary syndrome</td>
<td></td>
</tr>
<tr>
<td>Hendra virus</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Herpes B virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Human immunodeficiency virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Highly pathogenic avian influenza virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Japanese Encephalitis virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Junin virus</td>
<td></td>
</tr>
<tr>
<td>Kyasanur Forest disease virus</td>
<td></td>
</tr>
<tr>
<td>Lassa virus</td>
<td></td>
</tr>
<tr>
<td>Machupo virus</td>
<td></td>
</tr>
<tr>
<td>Marburg virus</td>
<td></td>
</tr>
<tr>
<td>Monkeypox virus</td>
<td></td>
</tr>
<tr>
<td>Mycobacterium tuberculosis (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Nipah virus</td>
<td></td>
</tr>
<tr>
<td>Omsk hemorrhagic fever virus</td>
<td></td>
</tr>
<tr>
<td>Poliovirus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Rabies virus</td>
<td></td>
</tr>
<tr>
<td>Rickettsia prowazekii (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Rickettsia rickettsii (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Rift Valley fever virus</td>
<td></td>
</tr>
<tr>
<td>Russian spring-summer encephalitis virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Sabia virus</td>
<td></td>
</tr>
<tr>
<td>Shigella dysenteriae type 1 (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Tick-borne encephalitis virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Variola virus</td>
<td></td>
</tr>
<tr>
<td>Venezuelan equine encephalitis virus</td>
<td></td>
</tr>
<tr>
<td>West Nile virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Yellow fever virus (cultures only)</td>
<td></td>
</tr>
<tr>
<td>Yersinia pestis (cultures only)</td>
<td></td>
</tr>
</tbody>
</table>
### INDICATIVE EXAMPLES OF INFECTIOUS SUBSTANCES INCLUDED IN CATEGORY A IN ANY FORM UNLESS OTHERWISE INDICATED (2.6.3.2.2.1 (a))

<table>
<thead>
<tr>
<th>UN Number and Proper Shipping Name</th>
<th>Micro-organism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN 2900</strong></td>
<td>African horse sickness virus</td>
</tr>
<tr>
<td></td>
<td>African swine fever virus</td>
</tr>
<tr>
<td></td>
<td>Avian paramyxovirus Type 1 - Newcastle disease virus</td>
</tr>
<tr>
<td></td>
<td>Bluetongue virus</td>
</tr>
<tr>
<td></td>
<td>Classical swine fever virus</td>
</tr>
<tr>
<td></td>
<td>Foot and mouth disease virus</td>
</tr>
<tr>
<td></td>
<td>Lumpy skin disease virus</td>
</tr>
<tr>
<td></td>
<td><em>Mycoplasma mycoides</em> - Contagious bovine pleuropneumonia</td>
</tr>
<tr>
<td></td>
<td>Peste des petits ruminants virus</td>
</tr>
<tr>
<td></td>
<td>Rinderpest virus</td>
</tr>
<tr>
<td></td>
<td>Sheep-pox virus</td>
</tr>
<tr>
<td></td>
<td>Goatpox virus</td>
</tr>
<tr>
<td></td>
<td>Swine vesicular disease virus</td>
</tr>
<tr>
<td></td>
<td>Vesicular stomatitis virus</td>
</tr>
</tbody>
</table>

2.6.3.2.2 Category B: An infectious substance which does not meet the criteria for inclusion in Category A. Infectious substances in Category B shall be assigned to UN 3373 except that cultures, as defined in 2.6.3.1.3, shall be assigned to UN 2814 or UN 2900, as appropriate.

*Note: The Proper Shipping Name for UN 3373 is "DIAGNOSTIC SPECIMENS" or "CLINICAL SPECIMENS."

2.6.3.2.3 Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to the provisions of this Code, unless they meet the criteria for inclusion in another class.

2.6.3.2.4 Blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplants are not subject to this Code.

2.6.3.2.5 Substances for which there is a low probability that infectious substances are present, or where the concentration is at a level naturally encountered, are not subject to this Code. Examples are: foodstuffs, water samples, living persons and substances which have been treated so that the pathogens have been neutralized or deactivated.

2.6.3.2.6 A live animal which has been intentionally infected and is known or suspected to contain an infectious substance shall only be transported under terms and conditions approved by the competent authority.
2.6.3.3 Biological products

2.6.3.3.1 For the purposes of this Code, biological products are divided into the following groups:

(a) those which are manufactured and packaged in accordance with the requirements of appropriate national authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals. Substances in this group are not subject to the provisions of this Code.

(b) those which do not fall under (a) and are known or reasonably believed to contain infectious substances and which meet the criteria for inclusion in Category A or Category B. Substances in this group shall be assigned to UN 2814, UN 2900 or UN 3373, as appropriate.

Note: Some licensed biological products may present a biohazard only in certain parts of the world. Competent authorities may require that such biological products comply with local requirements for infectious substances or may impose other restrictions.

2.6.3.4 Genetically modified micro-organisms and organisms

2.6.3.4.1 Genetically modified micro-organisms not meeting the definition of infectious substance shall be classified in accordance with chapter 2.9.

2.6.3.5 Medical or clinical wastes

2.6.3.5.1 Medical or clinical wastes containing Category A infectious substances or containing Category B infectious substances in cultures shall be assigned to UN 2814 or UN 2900, as appropriate. Medical or clinical wastes containing infectious substances in Category B, other than cultures, shall be assigned to UN 3291.

2.6.3.5.2 Medical or clinical wastes which are reasonably believed to have a low probability of containing infectious substances shall be assigned to UN 3291.

Note: The Proper Shipping Name for UN 3291 is CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.

2.6.3.5.3 Decontaminated medical or clinical wastes which previously contained infectious substances are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class."
Chapter 2.7

Except for the definition in 2.7.2, replace, throughout the chapter, "Industrial package Type 1 (Type IP-1)" with "Type IP-1 package", "Industrial package Type 2 (Type IP-2)" with "Type IP-2 package" and "Industrial package Type 3 (Type IP-3)" with "Type IP-3 package".

2.7.1.2 In (e), insert the following text after "naturally occurring radionuclides":

"which are either in their natural state, or have only been processed for purposes other than for extraction of the radionuclides, and"

Add a new (f) as follows:

"(f) Non-radioactive solid objects with radioactive substances present on any surfaces in quantities not exceeding the limit defined in 2.7.2".

2.7.2 In the definition of "package", add "package" after "Type IP-1", "Type IP-2" and "Type IP-3".

2.7.6.1.1 Amend the title of the table to read: "Multiplication factor for tanks, freight containers and unpackaged LSA-I and SCO-I".

2.7.6.2.2 Amend to read: "The criticality safety index for each overpack or freight container shall be determined as the sum of the CSIs of all the packages contained. The same procedure shall be followed for determining the total sum of the CSIs in a consignment or aboard a conveyance."

2.7.7.1.3 For "4.1.7.2.1" read "4.1.9.2.1".

2.7.7.2.1 In the table, for "Cf-252", replace $5 \times 10^{-2}$ with $1 \times 10^{-1}$ under the heading A1.

2.7.8.3 Insert the words "or overpack" after "package".

2.7.9.3 (b) Amend to read as follows:

" (b) each instrument or article bears the marking "RADIOACTIVE" except:

i) radioluminescent time-pieces or devices;

ii) consumer products that either have received regulatory approval according to 2.7.1.2(d) or do not individually exceed the activity limit for an exempt consignment in Table 2.7.7.2.1 (column 5), provided such products are transported in a package that bears the marking "RADIOACTIVE" on an internal surface in such a manner that warning of the presence of radioactive material is visible on opening the package, and".
Chapter 2.8

2.8.2.5.3.2 Replace the two last sentences of this subparagraph with the following text:

"For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37-2), S275J2G3+CR (1.0144 resp. St 44-3), ISO 3574:1999, Unified Numbering System (UNS) G10200 or SAE 1015, and for testing aluminium, non-clad, types 7075-T6 or AZ5GU-T6 shall be used. An acceptable test is prescribed in the United Nations Manual of Tests and Criteria, Part III, Section 37".

Chapter 2.9

Replace the existing text with the following:

"Chapter 2.9

2.9.1 Definitions

2.9.1.1 Class 9 substances and articles (miscellaneous dangerous substances and articles) are substances and articles which, during transport, present a danger not covered by other classes.

2.9.1.2 Genetically modified micro-organisms (GMMOs) and genetically modified organisms (GMOs) are micro-organisms and organisms in which genetic material has been purposely altered through genetic engineering in a way that does not occur naturally.

2.9.2 Assignment to class 9

2.9.2.1 Class 9 includes, inter alia:

.1 substances and articles not covered by other classes which experience has shown, or may show, to be of such a dangerous character that the provisions of part A of chapter VII of SOLAS 1974, as amended, shall apply.

.2 substances not subject to the provisions of part A in chapter VII of the aforementioned Convention, but to which the provisions of Annex III of MARPOL 73/78, as amended, apply. The properties or characteristics of each substance are given in the Dangerous Goods List in chapter 3.2 pertaining to the substance or article.

.3 substances that are transported or offered for transport at temperatures equal to, or exceeding, 100°C, in a liquid state, and solids that are transported or offered for transport at temperatures equal to or exceeding 240°C.
4 GMMOs and GMOs which do not meet the definition of infectious substances (see 2.6.3) but which are capable of altering animals, plants or microbiological substances in a way not normally the result of natural reproduction. They shall be assigned to UN 3245. GMMOs or GMOs are not subject to the provisions of this Code when authorized for use by the competent authorities of the countries of origin, transit and destination.”
PART 4

Chapter 4.1

4.1.1 In the NOTE, delete "only".

4.1.1.8 Amend to read as follows:

"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. 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, including an IBC, may be fitted with a vent. A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. However, the gas emitted shall not cause danger on account of its toxicity, its flammability, the quantity released, etc. The vent shall be so designed that, when the packaging, including an IBC, is in the attitude in which it is intended to be transported, leakages of liquid and the penetration of foreign matter are prevented under normal conditions of transport."

4.1.1.9 Insert the words "or routinely maintained" after "repaired", in the first and last sentences.

4.1.1.10 In the table in 4.1.1.10, in column 5 of the entry for UN 1155, for "100" read "199".

4.1.1.15 Add a new paragraph 4.1.1.15 as follows:

"For plastics drums and jerricans, rigid plastics IBCs and composite IBCs with plastics inner receptacles, unless otherwise approved by the competent authority, the period of use permitted for the transport of dangerous substances shall be five years from the date of manufacture of the receptacles, except where a shorter period of use is prescribed because of the nature of the substance to be transported".

Renumber subsequent paragraphs and subparagraphs in 4.1.1 accordingly.

4.1.1.17.5 Amend to read "… 5.2.1.3, 5.4.1.5.3, 6.1.2.4, 6.1.5.1.11 and 6.1.5.8."

4.1.2.3 Delete this paragraph and renumber the following paragraphs in 4.1.2 accordingly.

4.1.2.3 (new) Amend to read "IBCs of type 31HZ2 when transporting liquids shall be ...".

4.1.2.4 (new) Replace "rigid plastics and composite IBCs" with "rigid plastics, composite and flexible IBCs" in the first sentence.
4.1.3.4 Add a new line for large packagings, immediately before the line for IBCs, as follows:

"Large packagings
Flexible plastics: 51H (outer packaging)"

4.1.3.5 In the first sentence, delete "outer" (twice) and "in a combination packaging" and add "; 1A2" after "4G" and "; 1A2V", "1A2U" or "1A2W" after "4GW" in the examples between brackets.

4.1.3.6 Replace "Cylinders, bundles of cylinders, pressure drums and tubes" with "All cylinders, tubes, pressure drums and bundles of cylinders".

4.1.4.1 P001 In Composite packagings, for " Plastics receptacle in steel or aluminium crate or box or plastics receptacle in wood, wickerwork hamper, fibreboard or solid plastics box (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2) Glass receptacle in steel, aluminium, fibre, plywood, solid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or in a steel, aluminium, wood, fibreboard or plywood box (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)" read "Plastics receptacle in steel or aluminium crate or box or plastics receptacle in wood, plywood, fibreboard or solid plastics box (6HA2,6HB2, 6HC, 6HD2, 6HG2 or 6HH2) Glass receptacle in steel, aluminium, fibre, plywood, solid plastics or expanded plastics drum (6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2) or in a steel, aluminium, wood or fibreboard box or in a wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2)"

In PP31, delete UN Nos. 1680, 1689

In PP31, add UN Nos. 3413, 3414

In PP81, for "For UN 1790 with not more than 85% …" read " For UN 1790 with more than 60% but not more than 85% …".

4.1.4.1 P002 Under "Special packing provisions":
In special packing provision PP9, add a new sentence at the end to read as follows:

"For UN 3175 the leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags.".

P002 Add to end of footnotes 4 and 5 "(see 4.1.3.4).".

P002 In PP31, delete UN Nos. 1693, 1694, 1699

P002 In PP31, add UN Nos. 3448, 3449, 3450
P002 Amend "PP78" to read "PP85".

Add, before (new) PP85:

"PP84 For UN 1057, rigid outer packagings meeting the packing group II performance level shall be used. The packagings shall be designed and constructed and arranged to prevent movement, inadvertent ignition of the devices or inadvertent release of flammable gas or liquid.

P134 Under "Drums", for "fibreboard (4G)" read "fibre (1G)".

P138 Under "Drums" for "fibreboard" read "fibre".

P200 In paragraph (2)(d), insert a note to read as follows:

"Note: For pressure receptacles which make use of composite materials, the periodic inspection frequencies shall be as determined by the competent authority which approved the receptacles."

In paragraph (4), under "Requirements for toxic substances with an LC₅₀ less than or equal to 200 ml/m³ (ppm), provision "k", amend the sentence beginning "The pressure receptacle(s) shall" and paragraphs (i) and (ii) to read "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 meet the packing group I performance level. Pressure drums shall have a minimum wall thickness of 3.5 mm for aluminium alloy or 2 mm for steel."

In paragraph (4), under "Gas specific provisions", add a new provision "t" to read as follows:

"t: (i) The wall thickness of pressure receptacles shall be not less than 3 mm.

(ii) Prior to transport, it shall be ensured that the pressure has not risen due to potential hydrogen generation."

In "z", add at the end: "However, UN 1975 Nitric oxide and dinitrogen tetroxide mixtures may be transported in pressure drums."

Indent the last paragraph in line with the one above in "z".
Amendments to the tables:
Rearrange the order of the columns in Tables 2 and 3 according to the sequence in Table 1, (i.e. Cylinders, Tubes, Pressure drums, Bundles of cylinders, MEGCs…).

Delete all asterisks on LC50 values and delete the associated footnote.

Amend Table 1 as follows:

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Column</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1049, 1953, 1955, 3303, 3304, 3305 and 3306</td>
<td>MEGCs LC50</td>
<td>Add &quot;X&quot; Add &quot;≤ 5000&quot;</td>
</tr>
<tr>
<td>2600</td>
<td>LC50</td>
<td>Add &quot;between 3760 and 5000&quot;</td>
</tr>
</tbody>
</table>

Amend Table 2 as follows:

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Column</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010</td>
<td>Name and description</td>
<td>replace &quot;BUTADIENE, STABILIZED (mixtures of 1,3-butadiene and hydrocarbons)&quot; with &quot;BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED with more than 40% butadienes&quot;.</td>
</tr>
<tr>
<td></td>
<td>&quot;Test pressure, bar&quot;</td>
<td>Delete &quot;10&quot;</td>
</tr>
<tr>
<td></td>
<td>Filling ratio</td>
<td>Delete &quot;0.50&quot;</td>
</tr>
<tr>
<td></td>
<td>Special packing provisions</td>
<td>Add &quot;v,&quot;</td>
</tr>
<tr>
<td>1067, 1062</td>
<td>Pressure drums</td>
<td>Add &quot;X&quot; Amend name in second column to read: &quot;METHYLBROMIDE with not more than 2% chloropicrin&quot; Add to name in second column: &quot;with more than 2% chloropicrin&quot;</td>
</tr>
<tr>
<td>1581</td>
<td>Pressure drums</td>
<td>Add &quot;X&quot; Amend name in second column to read: &quot;METHYLBROMIDE with not more than 2% chloropicrin&quot; Add to name in second column: &quot;with more than 2% chloropicrin&quot;</td>
</tr>
<tr>
<td>3160, 3162, 3307, 3308, 3309 and 3310</td>
<td>LC50</td>
<td>Add &quot;≤ 5000&quot;</td>
</tr>
<tr>
<td>3083</td>
<td>Special packing provisions</td>
<td>Delete &quot;k&quot;</td>
</tr>
</tbody>
</table>
Amend Table 3 as follows:

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Column</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1051</td>
<td>LC₅₀</td>
<td>Replace &quot;140&quot; with &quot;40&quot;</td>
</tr>
<tr>
<td>1052</td>
<td>Special packing provisions</td>
<td>Add &quot;t&quot;</td>
</tr>
<tr>
<td>1746</td>
<td>LC₅₀</td>
<td>Replace &quot;180&quot; with &quot;50&quot;</td>
</tr>
</tbody>
</table>

**P203** Replace the existing packing instruction P203 with the following:

<table>
<thead>
<tr>
<th><strong>P203</strong></th>
<th><strong>PACKING INSTRUCTION</strong></th>
<th><strong>P203</strong></th>
</tr>
</thead>
</table>
| This instruction applies to Class 2 refrigerated liquefied gases in closed cryogenic receptacles. Refrigerated liquefied gases in open cryogenic receptacles shall conform to the construction, testing and filling requirements approved by the competent authority.
| For closed cryogenic receptacles, the general provisions of 4.1.6.1 shall be met.
| Closed cryogenic receptacles constructed as specified in chapter 6.2 are authorized for the transport of refrigerated liquefied gases.
| The closed cryogenic receptacles shall be so insulated that they do not become coated with frost.
| (1) Test pressure
| Refrigerated liquids shall be filled in closed cryogenic receptacles with the following minimum test pressures:
| (a) For closed cryogenic receptacles with vacuum insulation, the test pressure shall not be less than 1.3 times the sum of the maximum internal pressure of the filled receptacle, including during filling and discharge, plus 100 kPa (1 bar);
| (b) For other closed cryogenic receptacles, the test pressure shall be not less than 1.3 times the maximum internal pressure of the filled receptacle, taking into account the pressure developed during filling and discharge.
| (2) Degree of filling
| For non-flammable, non-toxic refrigerated liquefied gases the volume of liquid phase at the filling temperature and at a pressure of 100 kPa (1 bar) shall not exceed 98% of the water capacity of the pressure receptacle.
| For flammable refrigerated liquefied gases the degree of filling shall remain below the level at which the volume of the liquid phase would reach 98% of the water capacity at that temperature, if the contents were raised to the temperature at which the vapour pressure equalled the opening pressure of the relief valve.
| (3) Pressure relief devices
| Closed cryogenic receptacles shall be fitted with at least one pressure relief device.
| (4) Compatibility
| Materials used to ensure the leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents. In the case of receptacles intended for the transport of oxidizing gases, (i.e. with a subsidiary risk 5.1) these materials shall not react with these gases in a dangerous manner.
P301 Amend (1) and (2) to read as two paragraphs of continuous text with five and four sentences, respectively.

P400 In paragraph (1), at the end of the second sentence, replace "in strong wood, fibreboard or plastics boxes" with "in strong rigid outer packagings", and in the third sentence, replace "box" with "outer packaging".

At the end of the table, add new special packing provision PP86, as follows:

"PP86 For UN 3392 and UN 3394, air shall be eliminated from the vapour space by nitrogen or other means.".

P401 Amend to read "Special packing provision".

P402 In PP31, add UN Nos. 1420, 1422.

P403 Under "Inner packagings", replace "have threaded closures" with "be hermetically sealed (e.g. by taping or by threaded closures).".

In PP31, delete UN Nos. 1389, 1392, 1420, 1422.

In PP31, add UN Nos. 3401, 3402, 3403, 3404.

At the end of the table, add a new special packing provision PP83, as follows:

"Special packing provisions

PP83 For UN 2813, waterproof bags containing not more than 20 g of substance for the purposes of heat formation may be packaged for transport. Each waterproof bag shall be sealed in a plastics bag and placed within an intermediate packaging. No outer packaging shall contain more than 400 g of substance. Water or liquid which may react with the water reactive substance shall not be included in the packaging."

P404 In the list of pyrophoric solids, add all UN Nos. from UN 3391 to UN 3400.

At the end of the table, add a new row with the heading "Special packing provisions" and a new special packing provision PP86, as follows:

"Special packing provisions

PP86 For UN 3391 and UN 3393, air shall be eliminated from the vapour space by nitrogen or other means.".

P405 Amend to read: "Special packing provision".

P406 In PP26 for "and 3344" read ", 3344 and 3376".
The third line under **Composite packagings** to read "Glass receptacle in steel, aluminium, plywood or fibre drum (6PA1, 6PB1, 6PD1 or 6PG1) or in steel, aluminium, wooden, **wickerwork hamper** or fibreboard box (6PA2, 6PB2, 6PC, 6PD2, or 6PG2) or in solid or expanded plastics packaging (6PH1 or 6PH2)".

Under "Special packing provisions", add PP83, as follows:

**PP83** For UN 2813, waterproof bags containing not more than 20 g of substance for the purposes of heat formation may be packaged for transport. Each waterproof bag shall be sealed in a plastics bag and placed within an intermediate packaging. No outer packaging shall contain more than 400 g of substance. Water or liquid which may react with the water reactive substance shall not be included in the packaging."

Delete ":(3N2)", "metal other than steel or aluminium (3N1)" and "60 l".

Delete "metal other than steel or aluminium (3N1)" and "60 l".

Delete special provision PP29, and add PP10 as to read follows:

"**PP10** For UN 2014 and UN 3149, the packaging shall be vented".

In table, amend text under "Composite packagings" in line with amendment to P001 above.

In column OP8, replace "200^2" with "400^2" and amend note 2 to read:

"^2 60 kg for jerricans/200 kg for boxes and, for solids, 400 kg in combination packagings with outer packagings comprising boxes (4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2) and with inner packagings of plastics or fibre with a maximum net mass of 25 kg.".

Amend end of Additional provision 2 to read: "….0.5 kg for solids or 0.5 l for liquids.".

Amend third sentence in second box of text to read: "are listed in 2.4.2.3.2.3 and 2.5.3.2.4.".

In (3), replace "Combination packagings" with "Packagings consisting of:" and amend the first paragraph to read as follows:

"Outer packagings: Steel or plastics drums, removable head (1A2 or 1H2), tested in accordance with the test provisions in 6.1.5 at a mass corresponding to the mass of the assembled package either as a packaging intended to contain inner packagings, or as a single packaging intended to contain solids or liquids, and marked accordingly.".
At the end of the table, add a new row with the heading "Special packing provisions" and a new special packing provision PP82, as follows:

"Special packing provision

PP82 For UN 1744, glass inner packagings with a capacity of not more than 1.3 l may be used in a permitted outer packaging with a maximum gross mass of 25 kg.".

P602 In paragraph (3), amend the text between brackets in the first line, to read: "(... 1H1, 6HA1 or 6HH1)".

P620 In .1(iii), insert "either" before "individually" and "or separated" after "wrapped" at the end.

In .2, replace "An outer packaging" with "A rigid outer packaging" in the first sentence and replace "at least" with "not less than" in the second sentence.

In 2, under "Additional provisions", replace existing "(a), (b), (i), (ii), (iii)" with the following:

(a) Substances consigned at ambient temperatures or at a higher temperature. Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leakproof seal shall be provided, e.g. a heat seal, a skirted stopper or a metal crimp seal. If screw caps are used, they shall be secured by positive means, e.g., tape, paraffin sealing tape or a manufactured locking closure;

(b) Substances consigned refrigerated or frozen. Ice, dry ice or other refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.3.1.1. Interior supports shall be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack shall be leakproof. If dry ice is used, the outer packaging or overpack shall permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used;

(c) Substances consigned in liquid nitrogen. Plastics primary receptacles capable of withstanding very low temperature shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.
(d) Lyophilized substances may also be transported in primary receptacles that are flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals."

P650 Replace the existing P650 with the following:

<table>
<thead>
<tr>
<th>P650</th>
<th>PACKING INSTRUCTION</th>
<th>P650</th>
</tr>
</thead>
<tbody>
<tr>
<td>This packing instruction applies to UN 3373</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including transhipment between cargo transport units and between cargo transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of transport by vibration or by changes in temperature, humidity or pressure.

(2) The packaging shall consist of three components:

(a) a primary receptacle;

(b) a secondary packaging; and

(c) an outer packaging.

(3) Primary receptacles shall be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.

(4) For transport, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The width of the line shall be at least 2 mm; the letters and numbers shall be at least 6 mm high.

UN3373
(5) The completed package shall be capable of successfully passing the drop test in 6.3.2.5 as specified in 6.3.2.3 and 6.3.2.4 of this Code except that the height of the drop shall not be less than 1.2 m.

(6) For liquid substances

(a) The primary receptacle(s) shall be leakproof;

(b) The secondary packaging shall be leakproof;

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

(d) Absorbent material shall be placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in a quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;

(e) The primary receptacle or the secondary packaging shall be capable of withstanding, without leakage, an internal pressure of 95 kPa (0.95 bar).

(7) For solid substances

(a) The primary receptacle(s) shall be sifproof;

(b) The secondary packaging shall be sifproof;

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

(8) Refrigerated or frozen specimens: Ice, dry ice and liquid nitrogen

(a) When dry ice or liquid nitrogen is used to keep specimens cold, all applicable provisions of this Code shall be met. When used, ice or dry ice shall be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports shall be provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack shall be leakproof. If carbon dioxide, solid (dry ice) is used, the packaging shall be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings and shall be marked "Carbon dioxide, solid" or "Dry ice".

(b) The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.

(9) Infectious substances assigned to UN 3373 which are packed and marked in accordance with this packing instruction are not subject to any other provisions of this Code.

(10) Clear instructions on filling and closing such packages shall be provided by packaging manufacturers and subsequent distributors to the consignor or to the person who prepares the package (e.g. patient) to enable the package to be correctly prepared for transport.
In paragraph 2 amend "2.5 l" to read "3.0 l".

Amend PP79 to read: "For UN 1790 with more than 60% but not more than 85% ....". For "PP82" read "PP81".

Add the following paragraph after the sentence "Packaging conforming to the packing group II performance level."

"In addition, batteries with a strong, impact resistant outer casing of a gross mass of 12 kg or more, and assemblies of such batteries, may be packed in strong outer packagings, in protective enclosures (e.g., in fully enclosed or wooden slatted crates) unpackaged or on pallets. Batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements."

Amend (2) to read as follows:

(2) (iii) absorbent material placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in a quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;

(iv) if multiple fragile primary receptacles are placed in a single secondary packaging they shall be individually wrapped or separated to prevent contact between them.

(b) An outer packaging shall be strong enough for its capacity, mass and intended use and with a smallest external dimension of at least 100 mm.

Additional provision

Dry ice and liquid nitrogen

When carbon dioxide, solid, (dry ice) is used as a refrigerant, the packaging shall be designed and constructed to permit the release of the gaseous carbon dioxide to prevent the build up of pressure that could rupture the packaging.

Substances consigned in liquid nitrogen or dry ice shall be packed in primary receptacles that are capable of withstanding very low temperatures. The secondary packaging shall also be capable of withstanding very low temperatures and, in most cases, will need to be fitted over the primary receptacle individually.
P906 Amend the sub-heading to read: "This instruction applies to UN Nos. 2315, 3151, 3152 and 3452."

P906(1) and (2) After "PCBs", insert "or polyhalogenated biphenyls or terphenyls" in (1) and ", polyhalogenated biphenyls or terphenyls" in (2).

4.1.4.2 IBC02 Amend "B11" to read "B20".

IBC06 In IBC06, in number 3, for ",.. and 31HZ1)" read ", 31HZ1 and 31HZ2)." And under the heading "Additional provision" for ",21HZ2 and 31HZ2" read "and 21HZ2".

IBC08 In special provision B6, insert "1408," after "1386,"

IBC520 UN 3119 Amend last entry to read:
"1,1,3,3-Trimethylbutyl peroxyneodecanoate, not more than ……"

IBC520 Insert the following new entries and heading:

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Organic peroxide</th>
<th>Type of IBC</th>
<th>Maximum quantity (litres)</th>
<th>Control temperature</th>
<th>Emergency temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>3119</td>
<td>Dicyclohexylperoxycarbonate, not more than 42% as a stable dispersion, in water</td>
<td>31A</td>
<td>1250</td>
<td>+10 °C</td>
<td>+15 °C</td>
</tr>
<tr>
<td>3110</td>
<td>Dicumyl peroxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3120</td>
<td>ORGANIC PEROXIDE, TYPE F, SOLID, TEMPERATURE CONTROLLED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.1.4.3 LP02 Insert "Flexible plastics (51H)" in the column for "Large outer packagings", and a note 3 under the table, as follows: "To be used with flexible inner packagings only."

4.1.6.1.2 Replace "material" with "mass" in the third sentence.

In .2, insert "porous" before "mass".

4.1.6.1.4 Amend as follows: "... have been performed. The change of service for compressed and liquefied gases shall be in accordance with ISO 11621:1997, as applicable. In addition, a pressure receptacle …".

The existing second paragraph of 4.1.6.1.4 becomes new paragraph 4.1.6.1.5. Insert "Shut-off" before "valves" at the beginning of the second sentence.
Renumber subsequent paragraphs accordingly.

4.1.6.1.8 Amend the beginning of the first sentence to read as follows: "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 …".

Delete subparagraph .4 and renumber subsequent subparagraphs accordingly.

Amend the end of the last paragraph to read: "… in .4, for valves with inherent protection, the provisions of annex B …".

4.1.6.1.10 Amend the first sentence to read as follows: "Refillable pressure receptacles, other than cryogenic receptacles, shall be periodically inspected in accordance with 6.2.1.5 and packing instruction P200".

Delete "charged or" before "filled" in the second sentence.

4.1.6.1.11 Amend the first paragraph to read as follows:
"Repairs shall be consistent with the manufacture and testing requirements of the applicable design and construction standards and are only permitted as indicated in the relevant periodic inspection standards specified in 6.2.2.4. Pressure receptacles, other than the jacket of closed cryogenic receptacles, shall not be subjected to repairs of any of the following:"

4.1.6.1.12.2 Replace "and" with "or" at the end.

4.1.6.1.13 Replace "Charged" with "Filled" at the beginning of the first sentence and replace "and" with "or" at the end of subparagraph.3.

4.1.6.2 - Delete these sections.

4.1.6.6.3

4.1.7.2.1 Amend to read: "The currently assigned organic peroxides specifically listed in packing instruction IBC520 may be transported in IBCs in accordance with this packing instruction.".

4.1.8.3 Add the following sentence at the end:
"When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN 2814 or UN 2900, the words "suspected category A infectious substance" shall be shown, in parentheses, following the Proper Shipping Name on the document inside the outer packaging.".

4.1.9.1.4 Replace "and intermediate bulk containers" with "IBCs and conveyances".

4.1.9.2.1 Replace "Industrial package Type 1 (Type IP-1), Industrial package Type 2 (Type IP-2), Industrial package Type 3 (Type IP-3)" with "Type IP-1 package, Type IP-2 package, Type IP-3 package,".
Chapter 4.2

4.2.0 Amend to read: "The provisions for the use and construction of portable tanks in this chapter and chapter 6.7 are based on the United Nations Recommendations on the transport of dangerous goods. IMO type portable tanks and road tank vehicles may continue to be constructed in accordance with the provisions of the IMDG Code in force on 1 July 1999 (amendment 29) until 1 January 2003. Tanks certified and approved prior to 1 January 2003 may continue to be used provided that they are found to meet the applicable periodic inspections and test provisions. They shall meet the provisions set out in columns (13) and (14) of chapter 3.2. However, the provisions of column (12) may be used instead of the provisions of column (13) until 1 January 2010. Detailed explanation and construction provisions may be found in DSC/Circ.12 (Guidance on the continued use of existing IMO type portable tanks and road tank vehicles for the transport of dangerous goods.

Note: IMO type 4, 6 and 8 road tank vehicles may be constructed after 1 January 2003 in accordance with the provisions of chapter 6.8.

4.2.1 Insert "class 1 and" before "classes 3 to 9".

4.2.1.1 Amend the end of the first sentence to read: "… transport of substances of classes 1, 3, 4, 5, 6, 7, 8 and 9.". Delete the last sentence.

4.2.1.4 Amend the second sentence to read as follows: "When necessary, the shell shall be thermally insulated."

4.2.1.9.5.1 Amend the sentence before the formula to read as follows: "The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following formula:".

4.2.1.9.8 Add to read "Portable tanks shall not be filled or discharged while they remain on board."

4.2.1.18 Add a new paragraph 4.2.1.18 to read as follows:

"4.2.1.18 Additional provisions applicable to the transport of solid substances transported above their melting point"

4.2.1.18.1 Solid substances transported or offered for transport above their melting point which are not assigned a portable tank instruction in column (10) of the Dangerous Goods List of chapter 3.2 or when the assigned portable tank instruction does not apply to transport at temperatures above their melting point may be transported in portable tanks provided that the solid substances are classified in classes 4.1, 4.2, 4.3, 5.1, 6.1, 8 or 9 and have no subsidiary risk
other than that of class 6.1 or class 8 and are in packing group II or III.

4.2.1.18.2 Unless otherwise indicated in the Dangerous Goods List, portable tanks used for the transport of these solid substances above their melting point shall conform to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II. A portable tank that affords an equivalent or greater level of safety may be selected in accordance with 4.2.5.2.5. The maximum degree of filling (in %) shall be determined according to 4.2.1.9.5 (TP3)".

4.2.2.7.4 Add to read "Portable tanks shall not be filled or discharged while they remain on board".

4.2.3.6.5

4.2.4.5.4 Amend "multiple-element gas containers" to read "MEGCs".

4.2.4.6 Amend "Charged" to read "Filled".

4.2.5.2.1 Replace "2" with "1" at the end of the first sentence.

4.2.5.2.2 Insert "class 1 and" before "classes 3 to 9" at the beginning of the first sentence.

4.2.5.2.5 Add at end "T50 None".

4.2.5.2.6 Insert the following paragraph after the title:

"Portable tank instructions specify the provisions applicable to a portable tank when used for the transport of specific substances. Portable tank instructions T1 to T22 specify the applicable minimum test pressure, the minimum shell thickness (in mm reference steel), and the pressure relief and bottom-opening provisions."

In the table for portable tank instruction "T1-T22" add a reference "a" to a footnote at the end of the heading "Pressure relief provisions". The footnote will read as follows:

"a When the word "Normal" is indicated, all the provisions of 6.7.2.8 apply except for 6.7.2.8.3."

T23 For UN 3109, in the entry for Pinanyl hydroperoxyde, replace "50%" with "56%".

T50 In the table for portable tank instruction "T50":

- In the heading "Max. allowable working pressure (bar) Small, Bare; Sunshield; Insulated", add at the end "respectively" and a footnote to read as follows:

"a Small" means tanks having a shell with a diameter of 1.5 metres or less; "Bare" means tanks having a shell with a diameter of more than
1.5 metres without insulation or sun shield (see 6.7.3.2.12); "Sunshield" means tanks having a shell with a diameter of more than 1.5 metres with sun shield (see 6.7.3.2.12); "Insulated" means tanks having a shell with a diameter of more than 1.5 metres with insulation (see 6.7.3.2.12); (see definition of "Design reference temperature" in 6.7.3.1).

- Add a reference "b" to a footnote at the end of the heading "Pressure relief provisions", and a footnote to read as follows:

\[ b \] The word "Normal" in the pressure relief column indicates that a frangible disc as specified in 6.7.3.7 is not required.

- Add a new row as follows:

<table>
<thead>
<tr>
<th>UN No.</th>
<th>Non-refrigerated liquefied gases</th>
<th>Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated, respectively(^{(a)})</th>
<th>Openings below liquid level</th>
<th>Pressure relief provisions (^{(b)}) (see 6.7.3.7)</th>
<th>Maximum filling density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010</td>
<td>Butadienes and hydrocarbon mixture, stabilized with more than 40% butadienes</td>
<td>See MAWP definition in 6.7.3.1</td>
<td>Allowed</td>
<td>Normal</td>
<td>See 4.2.2.7</td>
</tr>
</tbody>
</table>

Amend existing entries to read as follows:

1062  Methylbromide with not more than 2% chloropicrin
1581  Chloropicrin and methyl bromide mixture with more than 2% chloropicrin

4.2.5.3 TP3 Amend to read as follows: "The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined in accordance with 4.2.1.9.5."

Add the following new portable tank instructions:

"TP32 For UN 0331, UN 0332 and UN 3375, portable tanks may be used subject to the following conditions:

(a) To avoid unnecessary confinement, each portable tank constructed of metal shall be fitted with a pressure relief device that may be of the reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge or burst pressure, as applicable, shall not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar.

(b) Suitability for transport in tanks shall be demonstrated. One method to evaluate this suitability is test 8 (d) in Test Series 8 (see United Nations "Manual of Tests and Criteria", Part 1, Sub-section 18.7).
(c) Substances shall not be allowed to remain in the portable tank for any period that could result in caking. Appropriate measures shall be taken to avoid accumulation and packing of substances in the tank (e.g. cleaning, etc).

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point and which are cooled and transported as a solid mass. For solids which are transported above their melting point, see 4.2.1.18.

TP34 Portable tanks need not be subjected to the impact test in 6.7.4.14.1 if the portable tank is marked "NOT FOR RAIL TRANSPORT" on the plate specified in 6.7.4.15.1 and also in letters at least 10 cm high on both sides of the outer jacket.

4.2.5.1.1 Delete "and paragraph 4.2.7" in the third sentence. Delete "Except as provided for solid substances in 4.2.7," in the fourth sentence. Delete "and in 4.2.7" in the fifth sentence.

4.2.6 Amend to read:

"4.2.6 Additional provisions for the use of road tank vehicles"

4.2.6.1 The tank of a road tank vehicle shall be attached to the vehicle during normal operations of filling, discharge and transport. IMO type 4 tanks shall be attached to the chassis when transported on board ships. Road tank vehicles shall not be filled or discharged while they remain on board. A road tank vehicle shall be driven on board on its own wheels and be fitted with permanent tie-down attachments for securing on board the ship.

4.2.6.2 Road tank vehicles shall comply with the provisions of chapter 6.8. IMO type 4, 6 and 8 tanks may be used according to the provisions of chapter 6.8 for short international voyages only.

4.2.7 Delete this section.
Chapter 4.3

Delete existing chapter and replace with a new chapter as follows:

"CHAPTER 4.3

USE OF BULK CONTAINERS

Note: Sheeted bulk containers shall not be used for sea transport.

4.3.1 General provisions

4.3.1.1 These general provisions are applicable to the use of containers for the transport of solid substances in bulk. Substances shall be transported in closed bulk containers conforming to the applicable bulk container instruction identified by the code BK2 in column 13 of the Dangerous Goods List in chapter 3.2. The closed bulk container used shall conform to the requirements of chapter 6.9.

4.3.1.2 Except as provided in 4.3.1.3, bulk containers shall only be used when a substance is assigned a bulk container code in column 13 of the Dangerous Goods List.

4.3.1.3 When a substance is not assigned a bulk container code in column 13 of the Dangerous Goods List, interim approval for transport may be issued by the competent authority of the country of origin. The approval shall be included in the documentation of the consignment and contain, as a minimum, the information normally provided in the bulk container instruction and the conditions under which the substance shall be transported. Appropriate measures should be initiated by the competent authority to have the assignment included in the Dangerous Goods List.

4.3.1.4 Substances which may become liquid at temperatures likely to be encountered during transport are not permitted in bulk containers.

4.3.1.5 Bulk containers shall be sifproof and shall be so closed that none of the contents can escape under normal conditions of transport including the effect of vibration, or by changes of temperature, humidity or pressure.

4.3.1.6 Bulk solids shall be loaded into bulk containers and evenly distributed in a manner that minimizes movement that could result in damage to the container or leakage of the dangerous goods.

4.3.1.7 Where venting devices are fitted, they shall be kept clear and operable.

4.3.1.8 Bulk solids shall not react dangerously with the material of the bulk container, gaskets, equipment including lids and tarpaulins, or with protective coatings, which are in contact with the contents, or significantly weaken them. Bulk containers shall be so constructed or adapted that the goods cannot penetrate between wooden floor coverings or come into contact with those parts of the bulk containers that may be affected by the dangerous goods or residues thereof.
### 4.3.1.9
Before being filled and offered for transport, each bulk container shall be inspected and cleaned to ensure that it does not contain any residue on the interior or exterior that could:

- cause a dangerous reaction with the substance intended for transport;
- detrimentally affect the structural integrity of the bulk container; or
- affect the dangerous goods retention capabilities of the bulk container.

### 4.3.1.10
During transport, no dangerous residues shall adhere to the outer surfaces of a bulk container.

### 4.3.1.11
If several closure systems are fitted in series, the system which is located nearest to the dangerous goods to be transported shall be closed first before filling.

### 4.3.1.12
Empty bulk containers that have contained dangerous goods shall be treated in the same manner as is prescribed in this Code for a filled bulk container, unless adequate measures have been taken to nullify any hazard.

### 4.3.1.13
If bulk containers are used for the carriage of bulk goods liable to cause a dust explosion, or evolve flammable vapours (e.g. for certain wastes), measures shall be taken to exclude sources of ignition and to prevent dangerous electrostatic discharge during transport loading or unloading of the goods.

### 4.3.1.14
Substances, for example wastes, which may react dangerously with one another and substances of different classes and goods not subject to this Code, which are liable to react dangerously with one another shall not be mixed together in the same bulk container. Dangerous reactions are:

1. combustion and/or evolution of considerable heat;
2. emission of flammable and/or toxic gases;
3. formation of corrosive liquids; or
4. formation of unstable substances.

### 4.3.1.15
Before a bulk container is filled, it shall be visually examined to ensure it is structurally serviceable, its interior walls, ceiling and floors are free from protrusions or damage and that any inner liners or substance retaining equipment are free from rips, tears or any damage that would compromise its cargo retention capabilities. Structurally serviceable means the bulk container does not have major defects in its structural components, such as top and bottom side rails, top and bottom end rails, door sill and header, floor cross members, corner posts, and corner fittings in a freight container. Major defects include:

1. bends, cracks or breaks in the structural or supporting members that affect the integrity of the container;
more than one splice or an improper splice (such as a lapped splice) in top or bottom end rails or door headers;

more than two splices in any one top or bottom side rail;

any splice in a door sill or corner post;

door hinges and hardware that are seized, twisted, broken, missing, or otherwise inoperative;

gaskets and seals that do not seal;

any distortion of the overall configuration great enough to prevent proper alignment of handling equipment, mounting and securing chassis or vehicle, or insertion into ships' cargo spaces;

any damage to lifting attachments or handling equipment interface features; or

any damage to service or operational equipment.

4.3.2 Additional provisions applicable to bulk goods of classes 4.2, 4.3, 5.1, 6.2, 7 and 8

4.3.2.1 Bulk goods of class 4.2

The total mass carried in a bulk container shall be such that its spontaneous ignition temperature is greater than 55 °C

4.3.2.2 Bulk goods of class 4.3

Such goods shall be transported in bulk containers which are watertight.

4.3.2.3 Bulk goods of class 5.1

Bulk containers shall be so constructed or adapted that the goods cannot come into contact with wood or any other incompatible material.

4.3.2.4 Bulk waste goods of class 6.2

4.3.2.4.1 Bulk wastes of class 6.2 (UN 2900)

Closed bulk containers, and their openings, shall be leakproof by design or by the fitting of a suitable liner.

Waste goods UN 2900 shall be thoroughly treated with an appropriate disinfectant before loading prior to transport.
3. Closed bulk containers used for the transport of waste goods UN 2900 shall not be re-used until they have been thoroughly cleaned and disinfected.

4.3.2.5 Bulk material of class 7

For the transport of unpackaged radioactive material, see 4.1.9.2.3.

4.3.2.6 Bulk goods of class 8

Such goods shall be transported in closed bulk containers which are watertight."
PART 5

Chapter 5.1

Note: Move the Note under the heading of 5.1.5

5.1.2.1 Add at the end of the sentence "An overpack, in addition, shall be marked with the word "OVERPACK".

5.1.2.2 Insert the following sentence after "this Code.": "The "OVERPACK" marking on an overpack is an indication of compliance with this provision."

5.1.3.3 Add "or empty uncleaned bulk containers" after "uncleaned packages" and "or bulk container" at the end. Delete "or" after "unit" and add comma.

5.1.4 Amend "Secondary" to read "Subsidiary".

5.1.5.1.2.6 Delete "special form" before "approval".

Chapter 5.2

5.2.1.5.4.1 Replace "an Industrial package Type 1", "an Industrial package Type 2" and "an Industrial package Type 3" with "a Type IP-1 package", "a Type IP-2 package" and "a Type IP-3 package" respectively.

5.2.2.1.2.1 Amend last sentence to read: "They shall have a line …".

5.2.2.1.2.1 Amend to read:

"A package containing a dangerous substance, which has a low degree of danger, may be exempt from these labelling requirements. In this case, a special provision specifying that no hazard label is required appears in column 6 of the Dangerous Goods List for the relevant substance. However, for certain substances the package shall be marked with the appropriate text as it appears in the special provision e.g.:

<table>
<thead>
<tr>
<th>Substance</th>
<th>UN No.</th>
<th>Class</th>
<th>Mark required on bales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baled hay in cargo transport unit</td>
<td>UN 1327</td>
<td>4.1</td>
<td>None</td>
</tr>
<tr>
<td>Baled hay not in cargo transport unit</td>
<td>UN 1327</td>
<td>4.1</td>
<td>Class 4.1</td>
</tr>
<tr>
<td>Baled dry vegetable fibres in cargo transport unit</td>
<td>UN 3360</td>
<td>4.1</td>
<td>None</td>
</tr>
</tbody>
</table>
### Substance UN No. Class Mark required on packages in addition to the Proper Shipping Name and UN number

<table>
<thead>
<tr>
<th>Substance</th>
<th>UN No.</th>
<th>Class</th>
<th>Mark required on packages in addition to the Proper Shipping Name and UN number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishmeal*</td>
<td>UN 1374</td>
<td>4.2</td>
<td>Class 4.2 ** only applicable to fishmeal in packing group III</td>
</tr>
<tr>
<td>Batteries, wet non-spillable</td>
<td>UN 2800</td>
<td>8</td>
<td>Class 8 *** exempt from class marking when loaded in a cargo transport unit containing only batteries under UN 2800</td>
</tr>
</tbody>
</table>

* only applicable to fishmeal in packing group III
** exempt from class marking when loaded in a cargo transport unit containing only fishmeal under UN 1374
*** exempt from class marking when loaded in a cargo transport unit containing only batteries under UN 2800

5.2.2.1.4 Amend second heading in table to read "… shown in chapter 2.2".

5.2.2.1.6 Amend the beginning of this paragraph to read:
"Except as provided in 5.2.2.2.1.2, each label shall:"

5.2.2.1.12.1 Amend end of penultimate sentence to read "... specified in this chapter."

5.2.2.1.13 Add a new paragraph to read as follows:

"The following orientation label shall be displayed on two opposite sides of cryogenic receptacles intended for the transport of refrigerated liquefied gases. They shall be rectangular, of standard format 74 × 105 mm (A7). If the size of the package so requires, the dimensions of the labels may be changed, provided that they remain clearly visible.

Two black or red arrows on white or suitable contrasting background

5.2.2.2.1.1 Insert "shall" before "have" in last sentence.

5.2.2.2.1.2 Add the following text at the end of the existing paragraph:
"Labels may overlap to the extent provided for by ISO 7225:1994 "Gas cylinders - Precautionary labels", however, in all cases, the labels representing the primary hazard and the numbers appearing on any label shall remain fully visible and the symbols recognizable."

**Chapter 5.3**

Add a new 5.3.1.3 to read:

"5.3.1.3 Fumigated units

Class 9 placards shall not be affixed to a fumigated unit except as required for other class 9 substances or articles packed therein."

5.3.1.1.4.1 For "freight container" read "cargo transport unit".

5.3.1.1.4.1.1 For "cargo transport unit" read "freight container".

5.3.2.0.2 Amend "bulk packagings" to read "bulk containers".

5.3.2.1.1 Amend .5 to read as follows: "5 solid dangerous goods in bulk containers."

5.3.2.3 Amend to read "Cargo transport units containing marine pollutants shall clearly display the marine pollutant mark in locations indicated in 5.3.1.1.4.1, even if the cargo transport unit contains packages not required to bear the marine pollutant mark. The triangular mark shall conform to the specifications given in 5.2.1.6.3.1 and shall have sides of at least 250 mm".

5.3.2.5 Add a new 5.3.2.5 to read:

"5.3.2.5 Fumigated units

.1 The marking of the proper shipping name (FUMIGATED UNIT) and the UN number (UN 3359) is not required on fumigated units. However, if a fumigated unit is loaded with dangerous goods, any mark required by the provisions in 5.3.2.0 to 5.3.2.4 shall be marked on the fumigated unit.

.2 A closed fumigated unit shall be marked with a warning sign, as specified in .3, affixed in a location where it will be easily seen by persons attempting to enter the interior of the unit. When the fumigated unit has been ventilated to remove harmful concentrations of fumigant gas, the warning sign shall be removed.

.3 The fumigation warning sign shall be rectangular and shall be not less than 300 mm wide and 250 mm high. The markings shall be in black print on a white background with lettering not less than 25 mm high. An illustration of this sign is given below:
Chapter 5.4

5.4.1.4.3.2 Add ", bulk containers", in the title after "packagings", and in the text between brackets after "IBCs".

5.4.1.4.4 In the entry for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (calcium naphthenate), class 9, for "UN 3077" read "UN 3082", and for "(calcium naphthenate)" read "(hexylbenzene)".

In 4th example, amend "(-18°C)" to read "(18°C)".

5.4.1.5.7.1.8 Amend to read as follows:

".8 For consignments of more than one package, the information contained in 5.4.1.4.1.1 to .3 and 5.4.1.5.7.1.1 to .7 shall be given for each package. For packages in an overpack, freight container, or conveyance, a detailed statement of the contents of each package within the overpack, freight container, or conveyance and, where appropriate, of each overpack, freight container, or conveyance shall be included. If packages are to be removed from the overpack, freight container, or conveyance at a point of intermediate unloading, appropriate transport documents shall be made available;".

5.4.1.5.7.2 For "(see 7.14.4)" read "(see 7.1.14.4)".

5.4.1.5.9.2 In second line, amend "phlematizer" to read "phlegmatizer".
5.4.1.5.10 Delete "the provisions of paragraph".

5.4.1.5.11 Add new paragraph to read:

"5.4.1.5.11 Segregation groups for substances

For substances, mixtures, solutions or preparations consigned under N.O.S. entries not included in the segregation groups listed in 3.1.4.4 but belonging, in the opinion of the consignor, to one of these groups (see 3.1.4.2), the appropriate segregation group shall be shown in the transport document.*

* It is recognized that a segregation group is not applicable in all cases and may, therefore, not appear in the transport document."

5.4.1.5.12 Add a new paragraph to read:

"5.4.1.5.12 Transport of solid dangerous goods in bulk containers

For bulk containers other than freight containers, the following statement shall be shown on the transport document (see 6.9.4.6):

"Bulk container BK2 approved by the competent authority of …"

5.4.2.1 In the Note, insert "portable" before "tank".

5.4.3.1 For "5.4.1" read "5.4.1.4 and 5.4.1.5".

5.4.4.1 Insert "or other documents" after "special certificates".

5.4.4.2 Add new paragraph to read:

"5.4.4.2 Fumigated units

The transport document for a fumigated unit shall show the type and amount of fumigant used and the date and time of fumigation. In addition, instructions for disposal of any residual fumigant, including fumigation devices, if used, shall be provided."

Chapter 5.5 Delete whole chapter.
PART 6

Add "MULTIPLE ELEMENT GAS CONTAINERS (MEGCs)" after "PORTABLE TANKS" in main title.

Chapter 6.1

6.1.2.2 Delete "and infectious substances packagings".

6.1.2.7 Under "1" amend "N1" and "N2" to read "1N1" AND 1N2".

6.1.3.2 Amend referenced ISO standard to read "ISO 3574:1999 for steel".

6.1.3.4 Amend last sentence to read "Every other remanufactured metal drum …".

6.1.3.6 Insert a new paragraph 6.1.3.6 to read as follows:

"Packagings manufactured with recycled plastics material as defined in 1.2.1 shall be marked "REC". This mark shall be placed near the mark prescribed in 6.1.3.1."

Renumber subsequent paragraphs accordingly and all cross-references within them.

6.1.3.7 Merge the unnumbered subparagraph to main text.

(new) 6.1.3.12 Move the Note following this paragraph to the left.

6.1.4.1.1 Add a Note to read as follows:

"Note: For carbon steel drums, "suitable" steels are identified in ISO 3573:1999 "Hot rolled carbon steel sheet of commercial and drawing qualities" and ISO 3574:1999 "Cold-reduced carbon steel sheet of commercial and drawing qualities". For carbon steel drums below 100 litres "suitable" steels in addition to the above standards are also identified in ISO 11949:1995 "Cold-reduced electrolytic tinplate", ISO 11950:1995 "Cold-reduced electrolytic chromium/chromium oxide-coated steel" and ISO 11951:1995 "Cold-reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium-oxide coated steel.".

6.1.4.3.1 Amend to read "… constructed of metal or metal alloy …".

6.1.4.8.2 Delete this paragraph and renumber all subsequent paragraphs and subparagraph accordingly.

6.1.4.18.1 Amend to read: "… net-cloth with adhesive bonding to the outermost ply. The strength … and to its intended use. Joins …".

6.1.4.18.2 Amend: "contained substance" to read "substance contained".
6.1.5.1.7.7 In the last sentence, amend "package marking" to read "packaging mark".

6.1.5.1.11.1.2 Replace "6.1.5.8" with "6.1.5.7".

6.1.5.2.1 In the second sentence, insert ", other than bags," after "packagings".

Insert the following new third sentence: "Bags shall be filled to the maximum mass at which they may be used."

6.1.5.2.2 Replace "6.1.5.3.4" with "6.1.5.3.5".

6.1.5.3.2.3 Amend "polystyrene" to read "plastics".

6.1.5.3.3 Add a new 6.1.5.3.3 to read as follows:

"Removable head packagings for liquids shall not be dropped until at least 24 hours after filling and closing to allow for any possible gasket relaxation."

Renumber subsequent paragraphs and subparagraphs accordingly.

6.1.5.3.5 Replace the sentence: "For liquids if the test is performed with water:"… with "For liquids in single packagings and for inner packagings of combination packagings, if the test is performed with water:"

Add the following note before the table:

"Note: The term water includes water/antifreeze solutions with a minimum specific gravity of 0.95 for testing at -18 °C."

6.1.5.3.6.2 Insert the words "while retaining its containment function," after "closure".

6.1.5.7 Delete this paragraph and renumber the paragraph and subparagraphs relating to "Test report" accordingly.

Chapter 6.2

Delete "certified" in relation to "UN certified" in paragraphs: 6.2.2, 6.2.2.4 and 6.2.3.

6.2.1.1.1 Insert ", including fatigue," after "to withstand all conditions".

6.2.1.1.3 Delete the first sentence.

6.2.1.1.5 Renumbe the first sentence of this paragraph as 6.2.1.1.8 and amend as follows:

Insert "additional provisions" in place of "requirements" and delete "pressure" before "receptacles".
6.2.1.1.5.1 Renumber as 6.2.1.1.8.1 and delete "at the initial inspection".

6.2.1.1.5.2 Renumber as 6.2.1.1.8.2 and amend as follows:
2nd sentence: replace "continuous sheathing" with "a jacket".
3rd sentence: replace "sheathing" and "protective sheathing" with "jacket" and amend the end of the sentence to read as follows: "... (1 bar) calculated in accordance with a recognised technical code or a calculated critical collapsing pressure of not less than 200 kPa (2 bar) gauge pressure.".
4th sentence: replace "sheathing" with "jacket".

6.2.1.1.6 Renumber as 6.2.1.1.5.

6.2.1.1.7 Renumber as 6.2.1.1.6. In the last sentence, delete "class 2.3", insert "toxic" before "liquefied" and replace "can be separately charged" with "can be filled separately".

6.2.1.1.7 Insert a new paragraph 6.2.1.1.7 to read as follows:
"Contact between dissimilar metals which could result in damage by galvanic action shall be avoided.".

6.2.1.1.8.3 and 6.2.1.1.8.4 Add the following two new subparagraphs:
".3 Closed cryogenic receptacles intended for the transport of refrigerated liquefied gases having a boiling point below -182 °C at atmospheric pressure shall not include materials which may react with oxygen or oxygen enriched atmospheres in a dangerous manner, when located in parts of the thermal insulation where there is a risk of contact with oxygen or with oxygen enriched liquid.

.4 Closed cryogenic receptacles shall be designed and constructed with suitable lifting and securing arrangements.".

6.2.1.3.2 Replace "4.1.6.1.7" with "4.1.6.1.8" in the last sentence.

6.2.1.3.4 In the first sentence, delete "approved", replace "required" with "specified" and "as specified by the country of use" with "in 6.2.1.3.6.4 and 6.2.1.3.6.5.".

Insert the following new second sentence: "Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure.".

In the last sentence, replace "receptacles" with "receptacle itself", before "under normal conditions of transport.".

6.2.1.3.5 Delete this paragraph. As a consequence, current 6.2.1.3.6 becomes 6.2.1.3.5.
6.2.1.3.6 Add new paragraph and subparagraphs to read as follows:

"6.2.1.3.6 Additional provisions for closed cryogenic receptacles

6.2.1.3.6.1 Each filling and discharge opening in a closed cryogenic receptacle used for the transport of flammable refrigerated liquefied gases shall be fitted with at least two mutually independent shut-off devices in series, the first being a stop-valve, the second being a cap or equivalent device.

6.2.1.3.6.2 For sections of piping which can be closed at both ends and where liquid product can be trapped, a method of automatic pressure relief shall be provided to prevent excess pressure build-up within the piping.

6.2.1.3.6.3 Each connection on a closed cryogenic receptacle shall be clearly marked to indicate its function (e.g. vapour or liquid phase).

6.2.1.3.6.4 Pressure relief devices

6.2.1.3.6.4.1 Each closed cryogenic receptacle shall be provided with at least one pressure relief device. The pressure relief device shall be of the type that will resist dynamic forces including surge.

6.2.1.3.6.4.2 Closed cryogenic receptacles may, in addition, have a frangible disc in parallel with the spring loaded device(s) in order to meet the provisions of 6.2.1.3.6.5.

6.2.1.3.6.4.3 Connections to pressure relief devices shall be of sufficient size to enable the required discharge to pass unrestricted to the pressure relief device.

6.2.1.3.6.4.4 All pressure relief device inlets shall under maximum filling conditions be situated in the vapour space of the closed cryogenic receptacle and the devices shall be so arranged as to ensure that the escaping vapour is discharged unrestrictedly.

6.2.1.3.6.5 Capacity and setting of pressure relief devices

Note: In relation to pressure relief devices of closed cryogenic receptacles, MAWP means the maximum effective gauge pressure permissible at the top of a loaded closed cryogenic receptacle in its operating position including the highest effective pressure during filling and discharge.

6.2.1.3.6.5.1 The pressure relief device shall open automatically at a pressure not less than the MAWP and be fully open a pressure equal to 110% of the MAWP. It shall, after discharge, close at a pressure not lower than 10% below the pressure at which discharge starts and shall remain closed at all lower pressures.
6.2.1.3.6.5.2 Frangible discs shall be set to rupture at a nominal pressure which is the lower of either the test pressure or 150% of the MAWP.

6.2.1.3.6.5.3 In the case of the loss of vacuum in a vacuum-insulated closed cryogenic receptacle the combined capacity of all pressure relief devices installed shall be sufficient so that the pressure (including accumulation) inside the closed cryogenic receptacle does not exceed 120% of the MAWP.

6.2.1.3.6.5.4 The required capacity of the pressure relief devices shall be calculated in accordance with an established technical code recognized by the competent authority.

6.2.1.4.1 Insert ", other than closed cryogenic receptacles," after "New pressure receptacles".

In subparagraph .3, delete "and". The sentence "Inspection of the external and internal conditions of the pressure receptacles" becomes new subparagraph .4.

Renumbe subsequent subparagraphs accordingly.

In the note under new .7, replace "inspection body" with "competent authority".

In new .8, add the following sentence at the end: "In the case of welded pressure receptacles, particular attention shall be paid to the quality of the welds.".

In new .10, replace "material" with "mass" and add ", if applicable," before "the quantity of solvent".

6.2.1.4.2 Add the following new paragraph:

"On an adequate sample of closed cryogenic receptacles, the inspections and tests specified in 6.2.1.4.1.1, .2, .4 and .6 shall be performed. In addition, welds shall be inspected by radiographic, ultrasonic or another suitable non-destructive test method on a sample of closed cryogenic receptacles, according to the applicable design and construction standard. This weld inspection does not apply to the jacket.

Additionally, all closed cryogenic receptacles shall undergo the inspections and tests specified in 6.2.1.4.1, .7, .8 and .9, as well as a leakproofness test and a test of the satisfactory operation of the service equipment after assembly.".

6.2.1.5.1 Delete "under the supervision of an inspection body" and insert "by a body authorized by the competent authority," before "in accordance with the following:".

In .2, delete "by weighing," and replace "checks of" with "verification of minimum".

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In .3, delete "neck" and add "if there is evidence of corrosion or if the fittings are removed;", at the end.
In Note 1 under .4, replace "inspection body" with "competent authority", and in Note 2, replace "and" with "or" before "tubes".

6.2.1.5.3 Delete.

6.2.2.1.1 Amend the end of the sentence before the table as follows: "… and test of UN cylinders, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:"

Add the following standards to the current table:

|------------------|---------------------------------------------------------------------------------------------------------------|

Add the following notes at the end of the table:

**Note 1:** In the above referenced standards, composite cylinders shall be designed for unlimited service life.

**Note 2:** After the first 15 years of service, composite cylinders manufactured according to these standards may be approved for extended service by the competent authority which was responsible for the original approval of the cylinders and which will base its decision on the test information supplied by the manufacturer or owner or user."

6.2.2.1.2 Amend the end of the sentence before the table as follows: "… and test of UN tubes, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:"

6.2.2.1.3 Amend the end of the sentence before the table as follows: "… and test of UN acetylene cylinders, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:"

6.2.2.4 Add the following standard to the current table:

| ISO 11623:2002 | Transportable gas cylinders – Periodic inspection and testing of composite gas cylinders |

6.2.2.5 In the title, insert "for manufacture" after "approval".

6.2.2.5.2.4 In the first sentence, replace "as an inspector" with "for the inspection". In .4, insert "commercial" after "ensure".
6.2.2.5.3.1.9 Insert "and qualification procedures" after "training programmes".

6.2.2.5.4.1 Replace "encompass" with "meet".

6.2.2.5.4.2 Replace "written approval" with "certificate" in the last sentence.

6.2.2.5.4.3 Indent the sub-entries .1 to .5 to subsection 8 further to the right.

6.2.2.5.4.6 Replace "6.2.2.5.4.2" with "6.2.2.5.4.3".

6.2.2.5.4.9 Replace "certification" with "approval" in the last paragraph.

6.2.2.6 Insert the following text as new sub-section 6.2.2.6:

"6.2.2.6 Approval system for periodic inspection and testing of pressure receptacles

6.2.2.6.1 Definitions

For the purposes of this section:

Approval system means a system for competent authority approval of a body performing periodic inspection and testing of pressure receptacles (hereinafter referred to as "periodic inspection and test body"), including approval of that body’s quality system.

6.2.2.6.2 General provisions

Competent authority

6.2.2.6.2.1 The competent authority shall establish an approval system for the purpose of ensuring that the periodic inspection and testing of pressure receptacles conform to the provisions of this Code. In instances where the competent authority that approves a body performing periodic inspection and testing of a pressure receptacle is not the competent authority of the country approving the manufacture of the pressure receptacle, the marks of the approval country of periodic inspection and testing shall be indicated in the pressure receptacle marking (see 6.2.2.7). The competent authority of the country of approval for the periodic inspection and testing shall supply, upon request, evidence demonstrating compliance with this approval system, including the records of the periodic inspection and testing to its counterpart in a country of use. The competent authority of the country of approval may terminate the approval certificate referred to in 6.2.2.6.4.1, upon evidence demonstrating non-compliance with the approval system.

6.2.2.6.2.2 The competent authority may delegate its functions in this approval system, in whole or in part.
6.2.2.6.2.3 The competent authority shall ensure that a current list of approved periodic inspection and testing bodies and their identity marks is available.

Periodic inspection and testing body

6.2.2.6.2.4 The periodic inspection and testing body shall be approved by the competent authority and shall:

.1 have a staff with an organizational structure, capable, trained, competent, and skilled, satisfactorily to perform its technical functions;

.2 have access to suitable and adequate facilities and equipment;

.3 operate in an impartial manner and be free from any influence which could prevent it from doing so;

.4 ensure commercial confidentiality;

.5 maintain clear demarcation between actual periodic inspection and testing body functions and unrelated functions;

.6 operate a documented quality system in accordance with 6.2.2.6.3;

.7 apply for approval in accordance with 6.2.2.6.4;

.8 ensure that the periodic inspections and tests are performed in accordance with 6.2.2.6.5; and

.9 maintain an effective and appropriate report and record system in accordance with 6.2.2.6.6.

6.2.2.6.3 Quality system and audit of the periodic inspection and testing body

6.2.2.6.3.1 Quality system. The quality system shall contain all the elements, requirements, and provisions adopted by the periodic inspection and test body. It shall be documented in a systematic and orderly manner in the form of written policies, procedures, and instructions. The quality system shall include:

.1 a description of the organizational structure and responsibilities;
.2 the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;

.3 quality records, such as inspection reports, test data, calibration data and certificates;

.4 management reviews to ensure the effective operation of the quality system arising from the audits performed in accordance with 6.2.2.6.3.2;

.5 a process for control of documents and their revision;

.6 a means for control of non-conforming pressure receptacles; and

.7 training programmes and qualification procedures for relevant personnel.

6.2.2.6.3.2 Audit. The periodic inspection and testing body and its quality system shall be audited in order to determine whether it meets the requirements of this Code to the satisfaction of the competent authority. An audit shall be conducted as part of the initial approval process (see 6.2.2.6.4.3). An audit may be required as part of the process to modify an approval (see 6.2.2.6.4.6). Periodic audits shall be conducted, to the satisfaction of the competent authority, to ensure that the periodic inspection and test body continues to meet the provisions of this Code. The periodic inspection and testing body shall be notified of the results of any audit. The notification shall contain the conclusions of the audit and any corrective actions required.

6.2.2.6.3.3 Maintenance of the quality system. The periodic inspection and testing body shall maintain the quality system as approved in order that it remains adequate and efficient. The periodic inspection and testing body shall notify the competent authority that approved the quality system of any intended changes, in accordance with the process for modification of an approval in 6.2.2.6.4.6.

6.2.2.6.4 Approval process for periodic inspection and test bodies

Initial approval

6.2.2.6.4.1 A body desiring to perform periodic inspection and testing of pressure receptacles in accordance with a pressure receptacle standard and with this Code shall apply for, obtain, and retain an Approval Certificate issued by the competent authority. This written approval shall, on request, be submitted to the competent authority of a country of use.
6.2.2.6.4.2 An application shall be made for each periodic inspection and test body and shall include:

.1 the name and address of the periodic inspection and testing body and, if the application is submitted by an authorized representative, its name and address;

.2 the address of each facility performing periodic inspection and testing;

.3 the name and title of the person(s) responsible for the quality system;

.4 the designation of the pressure receptacles, the periodic inspection and test methods, and the relevant pressure receptacle standards met by the quality system;

.5 documentation on each facility, the equipment, and the quality system as specified under 6.2.2.6.3.1;

.6 the qualifications and training records of the periodic inspection and test personnel; and

.7 details of any refusal of approval of a similar application by any other competent authority.

6.2.2.6.4.3 The competent authority shall:

.1 examine the documentation to verify that the procedures are in accordance with the requirements of the relevant pressure receptacle standards and of this Code; and

.2 conduct an audit in accordance with 6.2.2.6.3.2 to verify that the inspections and tests are carried out as required by the relevant pressure receptacle standards and by this Code, to the satisfaction of the competent authority.

6.2.2.6.4.4 After the audit has been carried out with satisfactory results and all applicable requirements of 6.2.2.6.4 have been satisfied, an Approval Certificate shall be issued. It shall include the name of the periodic inspection and testing body, the registered mark, the address of each facility, and the necessary data for identification of its approved activities (e.g. designation of pressure receptacles, periodic inspection and test method and pressure receptacle standards).

6.2.2.6.4.5 If the periodic inspection and testing body is denied approval, the competent authority shall provide written detailed reasons for such denial.
Modifications to periodic inspection and test body approvals

6.2.2.6.4.6 Following approval, the periodic inspection and testing body shall notify the issuing competent authority of any modifications to the information submitted under 6.2.2.6.4.2 relating to the initial approval. The modifications shall be evaluated in order to determine whether the requirements of the relevant pressure receptacle standards and of this Code will be satisfied. An audit in accordance with 6.2.2.6.3.2 may be required. The competent authority shall accept or reject these modifications in writing, and an amended Approval Certificate shall be issued as necessary.

6.2.2.6.4.7 Upon request, the competent authority shall communicate to any other competent authority, information concerning initial approvals, modifications of approvals, and withdrawn approvals.

6.2.2.6.5 Periodic inspection and test and certification

The application of the periodic inspection and test marking to a pressure receptacle shall be considered a declaration that the pressure receptacle complies with the applicable pressure receptacle standards and with the provisions of this Code. The periodic inspection and test body shall affix the periodic inspection and test marking, including its registered mark, to each approved pressure receptacle (see 6.2.2.7.6). A record certifying that a pressure receptacle has passed the periodic inspection and test shall be issued by the periodic inspection and test body, before the pressure receptacle is filled.

6.2.2.6.6 Records

The periodic inspection and testing body shall retain records of pressure receptacle periodic inspection and tests (both passed and failed), including the location of the test facility, for not less than 15 years. The owner of the pressure receptacle shall retain an identical record until the next periodic inspection and test unless the pressure receptacle is permanently removed from service."

Renumber existing 6.2.2.6 and 6.2.2.7 as 6.2.2.7 and 6.2.2.8 respectively.

6.2.2.7 Amend the title to read: "Marking of refillable UN pressure receptacles".
Amend the first sentence to read as follows: "Refillable UN pressure receptacles shall be marked clearly and legibly with certification, operational and manufacturing marks."
In the third sentence, insert "or corrosion resistant plate welded on the outer jacket of a closed cryogenic receptacle" after "welded collar".
Replace ""UN" mark" with "UN packaging symbol" (twice).

6.2.2.7.1(a) Delete "certified".
6.2.2.7.2 In (g), amend the beginning of the first sentence to read: "the mass of the empty pressure receptacle ...". In the third sentence, delete "empty" before "mass". In (h), add at the end: "or for closed cryogenic receptacles;"
In (i), in the first sentence, delete "intended" and "the transport of". Add the following sentence at the end: "In the case of closed cryogenic receptacles, the maximum allowable working pressure preceded by the letters "MAWP";"
In (j), amend the beginning of the sentence to read: "In the case of pressure receptacles for liquefied gases and refrigerated liquefied gases, the water ..." and replace "digits" with "figures", in the first sentence.
In (k) insert "pressure receptacles for" before "UN 1001" and replace "material" with "mass" after "porous".
In (l) insert "pressure receptacles for" before "UN 3374" and replace "material" with "mass" after "porous".

6.2.2.7.3 In (m), add the following sentence at the end: "This mark is not required for closed cryogenic receptacles;".

6.2.2.7.4 In the first sentence, delete "as shown in the example below:".
In the first indent, replace "6.2.2.6.3" with "6.2.2.7.3".
In the second indent, amend the beginning to read: "The operational marks in 6.2.2.7.2 shall be the middle grouping and the test pressure (f) shall be immediately ...".
In the third indent, replace "6.2.2.6.1" with "6.2.2.7.1".
Add the following sentence immediately before the diagram: "The following is an example of the markings applied to a cylinder.".

In the illustration of the upper part of a gas cylinder below "(h)", for "58MM" read "5.8MM".

6.2.2.7.5 Insert the following new second sentence: "In the case of closed cryogenic receptacles, such marks may be on a separate plate attached to the outer jacket.".

6.2.2.7.6 Replace current 6.2.2.6.6 with the following:

"In addition to the preceding marks, each refillable pressure receptacle that meets the periodic and test requirements of 6.2.2.4 shall be marked in sequence as follows:

(a) the character(s) identifying the country authorizing the body performing the periodic inspection and test. This marking is not required if this body is approved by the competent authority of the country approving manufacture;

(b) the registered mark of the body authorized by the competent authority for performing periodic inspection and test;

(c) the date of the periodic inspection and test, the year (two digits) followed by the month (two digits) separated by a slash (i.e. "/"). Four digits may be used to indicate the year."
6.2.2.8 Wherever it appears throughout this sub-section, replace "UN-non refillable" with "non-refillable UN", and replace references to "6.2.2.6" with "6.2.2.7".

6.2.2.8.2 In the NOTE, delete "(see 5.2.2.2.1.2)".

6.2.3 Delete in the title "certified".

Chapter 6.3

In 6.3.2.9.1, for "6.3.2.6" read "6.3.2.3".

Chapter 6.4

Replace "Industrial package Type 1 (Type IP-1)", "Industrial package Type 2 (Type IP-2)" and "Industrial package Type 3 (Type IP-3)" with "Type IP-1 package", "Type IP-2 package" and "Type IP-3 package" respectively, all throughout this chapter.

6.4.3.3 Amend to read as follows:
"Packages containing radioactive material, to be transported by air, shall be capable of withstanding, without leakage, an internal pressure which produces a pressure differential of not less than maximum normal operating pressure plus 95 kPa."

6.4.6.1 Add the following new first sentence: "Packages designed to contain uranium hexafluoride shall meet the requirements prescribed elsewhere in this Code which pertain to the radioactive and fissile properties of the material."

Delete "the provisions of the International Organization for Standardization document".

Amend the beginning of the second sentence to read as follows: "Except as allowed in 6.4.6.4, uranium hexafluoride in quantities of 0.1 kg or more shall also be packaged …".

Delete the current last sentence, i.e. "The package shall also meet …... fissile properties of the material.".

6.4.6.2 In .2, insert "free drop" before "test" and in .3, insert "thermal" before "test". In .1, delete "the International Organization for Standardization document".

6.4.6.4 Amend (a) to read as follows:
"(a) The packages are designed to international or national standards other than ISO 7195:1993, provided an equivalent level of safety is maintained;".

In (b), insert "of" after "test pressure".
Add the following sentence after the subparagraphs (a) to (c): "In all other respects, the provisions of in 6.4.6.1 to 6.4.6.3 shall be satisfied."

6.4.7.16 Replace "6.4.7.14" with "6.4.7.14 (a)".

6.4.8.5 Replace the existing table with the following one:

<table>
<thead>
<tr>
<th>Case</th>
<th>Form and location of surface</th>
<th>Insolation for 12 hours per day (W/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flat surfaces transported horizontally-downward facing</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Flat surfaces transported horizontally-upward facing</td>
<td>800</td>
</tr>
<tr>
<td>3</td>
<td>Surfaces transported vertically</td>
<td>200*</td>
</tr>
<tr>
<td>4</td>
<td>Other downward facing (not horizontal) surfaces</td>
<td>200*</td>
</tr>
<tr>
<td>5</td>
<td>All other surfaces</td>
<td>400*</td>
</tr>
</tbody>
</table>

Note "*" under the table remains unchanged.

6.4.11.1 (b)(i) Amend to read as follows: "of 6.4.7.2 for packages containing fissile material;".

6.4.11.2.1 Amend the sentence after subparagraphs .1 to .3 to read as follows: "Neither beryllium nor deuterium in hydrogenous material enriched in deuterium shall be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 6.4.11.2".

6.4.11.5 Replace "packaging" with "package".

6.4.11.10 Amend (a) as follows: "… conditions consistent with the Type C package tests specified in 6.4.20.1 …."

In (b), amend the beginning to read: "in the assessment of 6.4.11.9, allowance …"; insert "Type C package" before "tests specified" and "the water in-leakage test of" before "6.4.19.3".

6.4.14 Replace "6.4.17.2, 6.4.20.2, and 6.4.20.4" with "6.4.17.2 and 6.4.20.2".

6.4.20.2 (a) Amend the end of the last but one sentence to read: "… at the top with its edge rounded off to a radius of not more than 6 mm".

6.4.20.4 Amend the end of the last sentence to read: "… as defined in 6.4.14, except that the target surface may be at any orientation provided that the surface is normal to the specimen path."
Chapter 6.5

6.5.1.1.2 Amend "equivalent alternatives" to read "acceptable alternatives".

6.5.1.4.1 Amend "The IBC code" to read "The code".

6.5.1.6.4 Delete final "s" from heading.

6.5.2.1.1.7 Add "+" after "stacking test load", and the associated footnote to read: "* The stacking test load in kilograms to be placed on the IBC shall be 1.8 times the combined maximum permissible gross mass of the number of similar IBCs that may be stacked on top of the IBCs during transport (see 6.5.4.6.4)."

6.5.2.1.2 In the third example beginning "31H1/Y/04 99" amend "120" to read "1200".

6.5.2.2.2 Delete "handling and".

6.5.3.1.1 First sentence, for "… the transport of solids." read "… the transport of liquids and solids.".

6.5.3.1.6 Adjust the alignment of the last paragraph with that of 6.5.3.1.6.3.

6.5.3.1.7 Amend "pressure-relief" to read "pressure relief".

6.5.3.2.7 Amend to read: "Additives may be incorporated into the material of the body to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.".

6.5.3.2.8 Amend to read: "No material recovered from used receptacles shall be used in the manufacture of IBC bodies. Production residues or scrap from the same manufacturing process may, however, be used. Component parts such as fittings and pallet bases may also be used provided such components have not in any way been damaged in previous use.".

6.5.3.3.1 Amend to read: "These provisions apply to rigid plastics IBCs for the transport of solids or liquids. Rigid plastics IBCs are of the following types:

11H1 fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for solids which are filled or discharged by gravity
11H2 freestanding, for solids which are filled or discharged by gravity
21H1 fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for solids which are filled or discharged under pressure
21H2 freestanding, for solids which are filled or discharged under pressure
31H1 fitted with structural equipment designed to withstand the whole load when IBCs are stacked, for liquids
31H2 freestanding, for liquids.".
6.5.3.3.4 Amend to read: "Additives may be incorporated in the material of the body to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material."

6.5.3.4.7 Amend to read: "Where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the inner receptacle. Where use is made of carbon black, pigments or inhibitors, other than those used in the manufacture of the tested design type, retesting may be waived if changes in carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction."

6.5.3.4.8 Amend to read: "Additives may be incorporated in the material of the inner receptacle to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material."

6.5.3.4.26 Delete "c" before "6".

6.5.3.5.3 Amend to read: "The body shall be made of strong and good quality solid or double-faced corrugated fibreboard (single or multiwall), appropriate to the capacity of the IBC and to its intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over a period of 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m² - see ISO 535:1991. It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting or corrugated fibreboard shall be firmly glued to the facings.

6.5.3.6.4 Amend to read: "Natural wood shall be well-seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the IBC. Each part of the IBC shall consist of one piece or be equivalent thereto. Parts are considered equivalent to one piece when a suitable method of glued assembly is used as for instance Lindermann joint, tongue and groove joint, ship lap or rabbet joint; or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used."

6.5.3.6.10 Amend "on the base" to read "of the base".

6.5.4.3.5 In footnote (d), delete "in the table".

6.5.4.5.2 Amend "maximum permissible load" to read "maximum permissible gross mass".

6.5.4.7.3 In the second sentence, for "The airtightness of the IBC …" read "The airtightness of the metal IBC …".

6.5.4.8.2 Amend the last sentence to read "Pressure relief devices shall be removed and their apertures plugged, or shall be rendered inoperative.".
Chapter 6.6

6.6.3.1 (g) Add "*" after "stacking test load", and the associated footnote to read: "* The stacking test load in kilogrammes to be placed on the large packaging shall be 1.8 times the combined maximum permissible gross mass of the number of similar large packagings that may be stacked on top of the large packaging during transport (see 6.6.5.3.4).".

Chapter 6.7

6.7.1.3 Delete "or is not authorized according to 4.2.7" in the first sentence.

6.7.2 Insert "class 1 and" before "classes 3 to 9".

6.7.2.1 In the definition of "Design pressure", replace "dynamic" with "static" in .2.3.

In the definition of "Design temperature range", insert "the other" before "substances" at the beginning of the second sentence.

In the definition of "portable tank" insert "class 1 and" before "classes 3 to 9" and delete the words "having a capacity of more than 450 litres" in the first sentence.

Insert the following definitions in alphabetical order:

"Fine grain steel means steel which has a ferritic grain size of 6 or finer when determined in accordance with ASTM E 112-96 or as defined in EN 10028-3, Part 3.

Fusible element means a non-reclosable pressure relief device that is thermally actuated.

Offshore portable tank means a portable tank specially designed for repeated use for transport of dangerous goods to, from and between offshore facilities. An offshore portable tank is designed and constructed in accordance with MSC/Circ.860 "Guidelines for the Approval of Containers Handled in Open Seas".

6.7.2.1.3 For "4.2.4.2.6" read "4.2.5.2.6".

6.7.2.8.1 For "4.2.4.2.6" read "4.2.5.2.6".

6.7.2.12.2 Amend the beginning of the first sentence to read as follows:
"The combined delivery capacity of the pressure relief system (taking into account the reduction of the flow when the portable tank is fitted with frangible-discs preceding spring-loaded pressure relief devices or when the spring-loaded pressure relief devices are provided with a device to prevent the passage of the flame), in conditions of complete fire engulfment ...".
6.7.2.13.1.5 Replace "of the device" with "of the spring-loaded pressure relief devices, frangible-discs or fusible elements".

6.7.2.13.2 Insert the words "spring-loaded" before "pressure relief devices".

6.7.2.19.1, 6.7.3.15.1, 6.7.4.14.1 and 6.7.5.12.1 Replace the reference for the Canadian and German standards, respectively, with the following:


Deutsche Bahn AG
DB Systemtechnik, Minden
Verifikation und Versuche, TZF 96.2
Portable tanks, longitudinal impact test"

6.7.2.20.1, 6.7.3.16.1 and 6.7.4.15.1 Move the footnotes to the end of the section.

6.7.3.1 In the definition of "Design pressure" replace "dynamic" with "static" in .2.2.

6.7.5.1 In the definition of "Elements" delete "restricted to".

6.7.5.2.1 Amend "loaded" to read "filled" in the first sentence.

6.7.5.2.8 Move the footnote to the end of the section.

6.7.5.4.1 Amend second sentence to read: "MEGCs for other gases ...".

6.7.5.5.1 Amend first sentence to read: "... complete fire engulfment of the MEGC, ...", and delete all hyphens from "pressure-relief".

6.7.5.12.4 Amend first sentence to read: "... inspection and test shall include ...".

6.7.5.13.1 Amend second sentence to read "... in accordance with chapter 6.2".

Chapter 6.9

Add a new chapter 6.9 as follows:

"CHAPTER 6.9
PROVISIONS FOR THE DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF BULK CONTAINERS

Note: Sheeted bulk containers shall not be used for sea transport.
### 6.9.1 Definitions

For the purposes of this section:

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

*Sheeted bulk containers* are open-top bulk containers with rigid bottom (including hopper-type bottom), side and end walls and a non-rigid covering.

### 6.9.2 Application and general provisions

6.9.2.1 Bulk containers and their service and structural equipment shall be designed and constructed to withstand, without loss of contents, the internal pressure of the contents and the stresses of normal handling and transport.

6.9.2.2 Where a discharge valve is fitted, it shall be capable of being made secure in the closed position and the whole discharge system shall be suitably protected from damage. Valves having lever closures shall be able to be secured against unintended opening and the open or closed position shall be readily apparent.

6.9.2.3 **Code for designating types of bulk container**

The following table indicates the codes to be used for designating types of bulk containers:

<table>
<thead>
<tr>
<th>Types of bulk container</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheeted bulk container</td>
<td>BK1</td>
</tr>
<tr>
<td>(Not allowed for sea transport)</td>
<td></td>
</tr>
<tr>
<td>Closed bulk container</td>
<td>BK2</td>
</tr>
</tbody>
</table>

6.9.2.4 In order to take account of progress in science and technology, the use of alternative arrangements which offer at least equivalent safety as provided by the provisions of this chapter may be considered by the competent authority.

### 6.9.3 Provisions for the design, construction, inspection and testing of freight containers used as bulk containers

#### 6.9.3.1 Design and construction provisions

6.9.3.1.1 The general design and construction provisions in this section are deemed to be met if the bulk container complies with the requirements of ISO 1496-4:1991 "Series 1 Freight containers - Specification and testing - Part 4: Non-pressurized containers for dry bulk" and the container is sifproof.
6.9.3.1.2 Freight containers designed and tested in accordance with ISO 1496-1:1990 "Series 1 Freight containers - Specification and testing - Part 1: General cargo containers for general purposes" shall be equipped with operational equipment which is, including its connection to the freight container, designed to strengthen the end walls and to improve the longitudinal restraint as necessary to comply with the test requirements of ISO 1496-4:1991, as relevant.

6.9.3.1.3 Bulk containers shall be siftproof. Where a liner is used to make the container siftproof, it shall be made of a suitable material. The strength of the material used for, and the construction of, the liner shall be appropriate to the capacity of the container and its intended use. Joins and closures of the liner shall withstand pressures and impacts liable to occur under normal conditions of handling and transport. For ventilated bulk containers, any liner shall not impair the operation of ventilating devices.

6.9.3.1.4 The operational equipment of bulk containers designed to be emptied by tilting shall be capable of withstanding the total filling mass in the tilted orientation.

6.9.3.1.5 Any movable roof or side or end wall or roof section shall be fitted with locking devices with securing devices designed to show the locked state to an observer at ground level.

6.9.3.2 **Service equipment**

6.9.3.2.1 Filling and discharge devices shall be so constructed and arranged as to be protected against the risk of being wrenched off or damaged during transport and handling. The filling and discharge devices shall be capable of being secured against unintended opening. The open and closed position and direction of closure shall be clearly indicated.

6.9.3.2.2 Seals of openings shall be so arranged as to avoid any damage by the operation, filling and emptying of the bulk container.

6.9.3.2.3 Where ventilation is required, bulk containers shall be equipped with means of air exchange, either by natural convection, e.g. by openings, or active elements, e.g. fans. The ventilation shall be designed to prevent negative pressures in the container at all times. Ventilating elements of bulk containers for the transport of flammable substances or substances emitting flammable gases or vapours shall be designed so as not to be a source of ignition.

6.9.3.3 **Inspection and testing**

6.9.3.3.1 Freight containers used maintained and qualified as bulk containers in accordance with the requirements of this section shall be tested and approved in accordance with the International Convention for Safe Containers (CSC) 1972, as amended.

6.9.3.3.2 Freight containers used and qualified as bulk containers shall be inspected periodically according to that Convention.
6.9.3.4 **Marking**

6.9.3.4.1 Freight containers used as bulk containers shall be marked with a Safety Approval Plate in accordance with the International Convention for Safe Containers.

6.9.4 **Provisions for the design, construction and approval of bulk containers other than freight containers**

6.9.4.1 Bulk containers covered in this section include skips, offshore bulk containers, bulk bins, swap bodies, trough shaped containers, roller containers, and load compartments of vehicles.

6.9.4.2 These bulk containers shall be designed and constructed so as to be strong enough to withstand the shocks and loadings normally encountered during transport including, as applicable, transhipment between modes of transport.

6.9.4.3 Load compartments of vehicles shall comply with the requirements of, and be acceptable to, the competent authority responsible for land transport of the dangerous goods to be transported in bulk.

6.9.4.4 These bulk containers shall be approved by the competent authority and the approval shall include the code for designating types of bulk containers in accordance with 6.9.2.3 and the provisions for inspection and testing, as appropriate.

6.9.4.5 Where it is necessary to use a liner in order to retain the dangerous goods, it shall meet the provisions of 6.9.3.1.3.

6.9.4.6 The following statement shall be shown on the transport document:

"Bulk container BK2 approved by the competent authority of …".
PART 7

Chapter 7.1

7.1.1.5 Add to the end of the first sentence: "for IBCs and large packagings the stacking test load shall be determined in accordance with 6.5.4.6.4 and 6.6.5.3.3.4 respectively".

7.1.5.3 Amend "Materials" to read "Material".

7.1.7.1.1 Amend to read:

"Closed cargo transport unit means a unit which fully encloses the contents by permanent structures and can be secured to the ship’s structure, and includes a magazine. Cargo transport units with fabric sides or tops are not closed cargo transport units. Where this stowage is specified, stowage in small compartments such as deck-houses and mast lockers are acceptable alternatives. The floor of any closed cargo transport unit or compartment shall either be constructed of wood, close-boarded or so arranged that goods are stowed on sparrd gratings, wooden pallets or dunnage. Provided that the necessary additional specifications are met, a closed cargo transport unit may be used for type "A" or "C" class 1 stowage or as a magazine."

7.1.7.1.7.1 Delete the term "when stowed under deck".

7.1.7.3 Amend to read: "Goods of class 1 requiring under deck and on deck stowage shall be stowed in accordance with 7.1.7.4. However, the provisions of ...".

7.1.7.4 Amend to read "Stowage provisions for goods of class 1".

7.1.7.4.1 Add new "General".

7.1.7.4.1 (existing) becomes "7.1.7.4.1.1.

.3 Amend to read "in all cases, all goods, including goods of class 1 stowed in cargo transport units, within the compartment or ...".

7.1.7.4.1.2 Add to read "Goods of class 1 with the exception of goods in division 1.4, shall not be stowed in the outermost row."

7.1.8.1.1 For "shall, in general," read "should".

7.1.14.13 Amend the beginning to read as follows: "A freight container, tank, IBC or conveyance dedicated to the transport of unpackaged radioactive material under exclusive use ...".
7.1.14.5.3 Amend the end to read: "...of the conveyance, except for consignments transported under exclusive use by road or rail, for which the radiation limits around the vehicle are specified in 7.1.14.7.2 and 7.1.14.7.3".

Chapter 7.2

7.2.1.7.2.7 Add "(including their organometallic compounds)".

7.2.1.7.2.9 Amend to read "Lead and its compounds".

7.2.1.7.2.12 Amend to read "nitrites and their mixtures".

7.2.1.7.2.18 Add ".18  alkalis".

7.2.3.2 In reference to the segregation provisions relating to "Separated longitudinally by intervening complete compartment or hold from" .4 closed versus closed", amend the "Top view hold" sketch to show:

```
N N N N N
N N N N N
N N N N N
N N N N N
24 m
```

7.2.3.3 In table .3 and .4, in "ON DECK" column, add "IN OR" (x 5).

7.2.5.1.1 Add at end ", see also chapter 7.6.".

7.2.7.1.3.1 Delete last example "3203, etc." and add

```
ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC     3392     4.2
ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC,     3394     4.2
WATER-REACTIVE
```

7.2.7.2.1.5 Insert present 7.2.7.4.

7.2.7.4 Delete.

7.2.9.1 (b) Amend the end of this subparagraph to read: "...to the critical group, taking account of the exposures expected to be delivered by all other relevant sources and practices under control.".
7.2.9.4 Amend to read as follows:
"Any group of packages, overpacks, and freight containers containing fissile material stored in transit in any one storage area shall be so limited that the total sum of the criticality safety indexes in the group does not exceed 50. Each group shall be stored so as to maintain a spacing of at least 6 m from other such groups."

Chapter 7.3

7.3.3.2 Add a new paragraph to read as follows:

"7.3.3.2 Decontamination

A cargo transport unit, a bulk container or a cargo space of a ship, which has been used to transport infectious substances, shall be inspected for release of the substance before re-use. If infectious substances were released during transport, the cargo transport unit, the bulk container or the cargo space of a ship shall be decontaminated before it is re-used. Decontamination may be achieved by any means which effectively inactivates the infectious substance released."


7.3.5.2 Amend "7.3.5" to read "7.3.6".

7.3.7.3.2 Insert "pressure" before "receptacles".

Chapter 7.4

7.4.3 Amend to read:

"7.4.3 Fumigated units

7.4.3.1 Cargo transport units under fumigation (fumigated units) shall be carried on board ships in accordance with the provisions of this Code relevant to the Proper Shipping Name FUMIGATED UNIT and UN number UN 3359 shown in the Dangerous Goods List in chapter 3.2. Particular transport conditions concerning UN 3359 are set out in special provision 910 in chapter 3.3.

7.4.3.2 A fumigated unit shall not be allowed on board until a sufficient period has elapsed to attain a reasonable uniform gas concentration throughout the cargo in it. Because of variations due to types and amounts of fumigants and commodities and temperature levels, the period between fumigant application and loading of the fumigated unit on board the ship shall be determined by the competent authority. Twenty-four hours is normally sufficient for this purpose. Unless the doors of a fumigated unit have been opened to allow the fumigant gas(es) and residues to be completely
ventilated or the unit has been mechanically ventilated, the shipment shall conform to the provisions of this Code concerning UN 3359.

7.4.3.3 The master shall be informed prior to the loading of a fumigated unit.

7.4.4.1.3 Amend to read "A cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23°C c.c. transported on deck shall be stowed "away from" (as defined in 7.2.2.2.1) possible sources of ignition. In the case of container ships, a distance equivalent to one container space athwartships away from possible sources of ignition applied in any direction will satisfy this requirement."

Chapter 7.6

7.6.4.5 Add new "For segregation on shipborne barges and on board barge-carrying ships, see 7.2.5."

7.6.8.2 Delete "Portable magazines and".

7.6.8.3.1 Delete "portable steel magazines or in"

Chapter 7.9

Amend chapter 7.9 to read:

“CHAPTER 7.9

Exemptions, Approvals and Certificates

7.9.1 Exemptions

Note 1 The provisions of this section do not apply to exemptions mentioned in chapters 1 to 7.8 of this Code (e.g. exemptions for limited quantities in 3.4.7) and to approvals (including permits, authorizations or agreements) and certificates which are referred to in chapters 1 to 7.8 of this Code. For the said approvals and certificates, see 7.9.2.

Note 2 The provisions of this section do not apply to class 7. For consignments of radioactive material for which conformity with any provision of this Code applicable to class 7 is impracticable, refer to 1.1.3.4.

7.9.1.1 Where this Code requires that a particular provision for the transport of dangerous goods shall be complied with, a competent authority or competent authorities (port State of departure, port State of arrival or flag State) may authorize any other provision by exemption if satisfied that such provision is at least as effective and safe as that required by this Code. Acceptance of an exemption authorized under this section by a competent authority not party to it is subject to the discretion of that competent authority. Accordingly, prior to any shipment covered by the
exemption, the recipient of the exemption shall notify other competent authorities concerned.

7.9.1.2 Competent authority or competent authorities which have taken the initiative with respect to the exemption:

.1 shall send a copy of such exemption to the International Maritime Organization which shall bring it to the attention of the Contracting Parties to SOLAS and/or MARPOL, as appropriate; and

.2 if appropriate, take action to amend the IMDG Code to include the provisions covered by the exemption.

7.9.1.3 The period of validity of the exemption shall be not more than five years from the date of authorization. An exemption that is not covered under 7.9.1.2.2 may be renewed in accordance with the provisions of this section.

7.9.1.4 A copy of the exemption shall accompany each consignment when offered to the carrier for transport under the terms of the exemption. A copy of the exemption or an electronic copy thereof shall be maintained on board each ship transporting dangerous goods in accordance with the exemption, as appropriate.

7.9.2 Approvals (including permits, authorizations or agreements) and certificates

7.9.2.1 Approvals, including permits, authorizations or agreements, and certificates referred to in chapters 1 to 7.8 of this Code and issued by the competent authority (authorities when the Code requires a multilateral approval) or a body authorized by that competent authority (e.g. approvals for alternative packaging in 4.1.3.7, approval for segregation as in 7.2.2.3 or certificates for portable tanks in 6.7.2.18.1) shall be recognized, as appropriate:

.1 by other contracting parties to SOLAS if they comply with the requirements of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended; and/or

.2 by other contracting parties to MARPOL if they comply with the requirements of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78, Annex III), as amended.

7.9.3 Addresses of competent authorities

An indicative list of addresses in individual countries to which inquiries regarding competent authority exemptions, approvals (including permits, authorizations or
agreements) and certificates can be referred is given in this paragraph. Corrections to these addresses should be sent to the Organization.*

Table of 7.9.3 unchanged except for:

In the entry for AUSTRALIA, delete the existing contact addresses and the footnote and add a new contact address in the addresses of the offices of the designated national competent authorities to read:

"Canberra
Manager, Ship Inspection
Maritime Operations
Australian Maritime Safety Authority
GPO Box 2181
Canberra ACT 2601
AUSTRALIA
Telephone:  +61 2 6279 5048
Fax:  +61 2 6279 5058
Email:  psc@amsa.gov.au
Website:  http://www.amsa.gov.au

In the entry for BELGIUM, amend the contact addresses of the offices of the designated national competent authorities to read:

Antwerp Office
Federale Overheidsdienst Mobiliteit en Vervoer
Maritiem Vervoer
Scheepvaartveiligheid
Loodsgebouw
Tavernierkaai 3
B–2000 Antwerpen
BELGIUM
Telephone:  +32 3 229 00 30
Fax:  +32 3 229 00 31
Email:  sc.antwerpen@mobilit.fgov.be

* International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom
Email:  info@imo.org
Fax:  +44 20 7587 3120
In the entry for BRAZIL, amend the contact address of the offices of the designated national competent authorities to read:

Diretoria de Portos e Costas (DPC-20)
Rua Teófilo Otoni No. 4
Centro
Rio de Janeiro
CEP 20090-070
BRAZIL
Telephone: +55 21 2104 5203
Fax: +55 21 2104 5202
Email: secom@dpc.mar.mil.br

In the entry for ESTONIA, amend the contact address of the offices of the designated national competent authorities to read:

Estonian Maritime Administration
Maritime Safety Division
Valge 4
EST-11413 Tallinn
ESTONIA
Telephone: +372 6205 700/715
Fax: +372 6205 706
Email: mot@vta.ee
In the entry for GERMANY, amend the contact addresses of the offices of the designated national competent authorities to read:

Federal Ministry of Transport, Building and Housing
Dangerous Goods Branch
Robert-Schuman-Platz 1
D-53175 Bonn
GERMANY
Telephone: +49 228 300 00 or 300-extension
          +49 228 300 2643
Fax:       +49 228 300 3428
Email:     Ref-A33@bmvbw.bund.de

Packing, Testing and Certification Institute:

Federal Institute for Materials Research and Testing
Bundesanstalt für Materialforschung und-prüfung (BAM)
Unter den Eichen 87
D-12205 Berlin
GERMANY
Telephone: +49 30 81 04 0 or Extension
          +49 30 8104 1310
          +49 30 8104 3407
Fax:       +49 30 8104 1227
Email:     ingo.doering@bam.de

In the entry for JAPAN, amend the first contact address of the office of the designated national competent authorities to read:

Inspection and Measurement Division
Maritime Bureau
Ministry of Land, Infrastructure and Transport
2-1-3 Kasumigaseki, Chiyoda-ku
Tokyo
JAPAN
Telephone: +81 3 5253 8639
Fax:       +81 3 5253 1644
Email:     MRB_KSK@mlit.go.jp

In the entry for the REPUBLIC OF KOREA, amend the contact addresses of the offices of the designated national competent authorities to read:

Maritime Safety Policy Division
Maritime Safety Management Bureau
Ministry of Maritime Affairs and Fisheries
50 Chungjeong-no, Seodaemun-gu, Seoul, 120-715,
REPUBLIC OF KOREA
Telephone: +82-2-3148-6312
Telefax:  +82-2-3148-6317
Marine Environment & Safety Division
Busan Regional Maritime Affairs and Fisheries Office,
1116-1 Jwachon-dong, Dong-gu, Busan, 601-726,
REPUBLIC OF KOREA
Telephone : +82-51-609-6530
Telefax : +82-51-609-6529

Marine Environment & Safety Division
Incheon Regional Maritime Affairs and Fisheries Office
1-17 Hang-dong 7(chil)-ga, Jung-gu, Incheon, 400-705,
REPUBLIC OF KOREA
Telephone : +82-32-880-6451, 885-0014
Telefax : +82-32-885-0032

Seafarers and Ship Division
Yeosu Regional Maritime Affairs and Fisheries Office
335-1 Sujeong-dong, Yeosu, Chonnam, 550-705,
REPUBLIC OF KOREA
Telephone : +82-61-660-9044
Telefax : +82-61-662-6999

Seafarers and Ship Division
Masan Regional Maritime Affairs & Fisheries Office
1-5 Wolpo-dong, Masan, Kyeongnam, 631-709,
REPUBLIC OF KOREA
Telephone : +82-55-249-0325
Telefax : +82-55-242-1260

Seafarers and Ship Division
Ulsan Regional Maritime Affairs and Fisheries Office
139-9 Maeam-dong, Nam-gu, Ulsan, 680-050,
REPUBLIC OF KOREA
Telephone : +82-52-228-5550
Telefax : +82-52-228-5559

Seafarers and Ship Division
Donghae Regional Maritime Affairs and Fisheries Office
606 Songjung-dong, Donghae, Kangwondo, 240-130,
REPUBLIC OF KOREA
Telephone : +82-33-520-0688
Telefax : +82-33-521-6502

Seafarers and Ship Division
Kunsan Regional Maritime Affairs and Fisheries Office
1-7 Jangmi-dong, Kunsan, Chonbuk, 573-030,
REPUBLIC OF KOREA
Telephone : +82-63-441-2222
Telefax : +82-63-441-2351
Seafarers and Ship Division
Mokpo Regional Maritime Affairs and Fisheries Office
1482 Sanjung-dong, Mokpo, Chonnam, 530-350
REPUBLIC OF KOREA
Telephone : +82-61-242-1303
Telefax : +82-61-242-1392

Seafarers and Ship Division
Pohang Regional Maritime Affairs and Fisheries Office
58-8 Hanggu-dong, Pohang, Kyeongbuk, 790-120,
REPUBLIC OF KOREA
Telephone : +82-54-245-1534
Telefax : +82-54-242-1326

Seafarers and Ship Division
Jeju Regional Maritime Affairs and Fisheries Office
918 Geonip-dong, Jeju , Jeju Province, 690-704,
REPUBLIC OF KOREA
Telephone : +82-64-720-2642
Telefax : +82-64-720-2644

Seafarers and Ship Division
Daesan Regional Maritime Affairs & Fisheries Office
438-1 Gieun-ri, Daesan-eup, Seosan, Chungnam, 356-871,
REPUBLIC OF KOREA
Telephone : +82-41-660-7700
Telefax : +82-41-663-0356

Testing and Certification
Korean Register of Shipping
23-7 Jang-dong, Yusung-gu, Daejeon, 305-600,
REPUBLIC OF KOREA
Telephone : +82-42-869-9330
Telefax : +82-42-862-6015

Inspecting Dangerous Goods Containers
Korea Maritime Dangerous Goods Inspection Center
112-2 Inui-dong, Jongro-gu, Seoul, 110-410,
REPUBLIC OF KOREA
Telephone : +82-2-766-1631
Telefax : +82-2-743-7017
In the entry for SWEDEN, amend the contact address of the office of the designated national competent authorities to read:

Swedish Maritime Administration
Maritime Safety Inspectorate
Ship Technical Division
SE-601 78 Norrköping
SWEDEN
Telephone: +46 11 19 10 00
Telefax: +46 11 23 99 34
Email: inspektion@sjofartsverket.se

SP, Swedish National Testing and Research Institute
Building Technology and Mechanics
Box 857
SE-501 15 Borås
SWEDEN
Telephone: +46 33 16 50 00
Telefax: +46 33 13 55 02

In the entry for SWITZERLAND, amend the contact address of the office of the designated national competent authorities to read:

Office suisse de la navigation maritime
Nauenstrasse 49
P. O. Box
CH-4002 Basel
SWITZERLAND
Telephone: +41 61 270 91 20
Fax: +41 61 270 91 29
Email: dv-ssa@eda.admin.ch
PART 3

Contents

Delete chapter 3.5 and the subsequent subchapters

Amend the title of PART 6 to read:

« … PORTABLE TANKS, MULTIPLE-ELEMENT GAS CONTAINERS (MEGCs) AND ROAD TANK VEHICLES »

Chapter 3.1

3.1.2.2.3 Replace the existing text with the following:

"UN 2793 FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS in a form liable to self-heating. The Proper Shipping Name is the most appropriate of the following combinations:

FERROUS METAL BORINGS
FERROUS METAL SHAVINGS
FERROUS METAL TURNINGS
FERROUS METAL CUTTINGS"

3.1.2.4 Replace the existing paragraph with the following text:

"3.1.2.4 Many substances have an entry for both the liquid and solid state (see definitions for liquid and solid in 1.2.1), or for the solid and solution. These are allocated separate UN numbers which are not necessarily adjacent to each other. Details are provided in the alphabetical index, e.g.:

NITROXYLENES, LIQUID - 6.1 1665
NITROXYLENES, SOLID - 6.1 3447"

3.1.2.7 Replace "included" with "transported".

3.1.2.8.1 Replace "their technical" with "the technical" in the first sentence.

3.1.2.8.1.4 Replace "UN 2003 METAL ALKYL, WATER-REACTIVE, N.O.S (trimethylgallium)" with "UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (trimethylgallium)".

3.1.3.3 Align wording with 2.0.2.9.
3.1.4.2 Amend the third sentence to read:

"Although these N.O.S. entries are not themselves listed in the above groups, the consignor shall decide whether inclusion under the segregation group is appropriate and, if so, shall mention that fact in the transport document (see 5.4.1.5.11)."

3.1.4.4.1 Add the following UN numbers in the list of acids:

"1250 methyltrichlorosilane
1298 trimethylchlorosilane
1305 vinyltrichlorosilane
1717 acetyl chloride
1723 allyl iodide
1745 bromine pentafluoride
1746 bromide trifluoride
1770 diphenyl methylbromide
1798 nitrohydrochloric acid
1815 propionyl chloride
1873 perchloric acid with more than 50% but not more than 72% acid, by mass"
2353 N,N-dimethylaniline
2395 isobutyrylchloride
2495 iodine pentafluoride
2626 chloric acid, aqueous solution
3361 chlorosilanes, toxic, corrosive, n.o.s.
3362 chlorosilanes, toxic, corrosive, flammable, n.o.s."

Add an asterisk after the proper shipping names of UN Nos. 1052, 1777, 1786, 1787, 1788, 1789, 1790, 1796, 1798, 1802, 1826, 1830, 1831, 1832, 1873, 1906, 2031, 2032, 2240, 2308 and 2796.

Add the following at the end of the list (NOT END OF THE PAGE) of the segregation group for acids:

"* : identifies strong acids"

Delete UN 2812 and UN 3093 from segregation group 1 acids.

Amend the list of acids to read:

"1742 boron trifluoride acetic acid complex, liquid
1743 boron trifluoride propionic acid complex, liquid
1805 phosphoric acid, liquid
1938 bromoacetic acid solution
2308 nitrosylsulphuric acid, liquid"
Add to the list of acids:

"3419 boron trifluoride acetic acid complex, solid
3420 boron trifluoride propionic acid complex, solid
3421 potassium hydrogendifluoride solution
3425 bromoacetic acid, solid
3453 phosphoric acid, solid
3456 nitrosylsulphuric acid, solid"

3.1.4.4.2 Add the following UN numbers:

"0004 Ammonium picrate dry or wetted with less than 10% water, by mass
0402 Ammonium perchlorate"

Delete UN 0223 and 2072

Amend to read:

"1835 tetramethylammonium hydroxide solution
1843 ammonium dinitro-o-cresolate, solid"

Add:

"3423 tetramethylammonium hydroxide, solid
3424 ammonium dinitro-o-cresolate solution"

3.1.4.4.4 Amend to read:

"1445 barium chlorate, solid
1459 chlorate and magnesium chloride mixture, solid"

Add:

"3405 barium chlorate solution
3407 chlorate and magnesium chloride mixture solution"

3.1.4.4.6 Amend to read:

"1680 potassium cyanide, solid
1689 sodium cyanide, solid
1694 bromobenzyl cyanides, liquid"

Add:

"3413 potassium cyanide solution
3414 sodium cyanide solution
3449 bromobenzyl cyanides, solid"
3.1.4.4.7 Amend the heading "7 Heavy metals and their salts" to read "7 Heavy metals and their salts (including their organometallic compounds)".

Delete UN 1477 Nitrates, inorganic, n.o.s., and UN 3282 Organometallic compound, toxic, n.o.s., from segregation group 7.

Amend to read:
"1470 lead perchlorate, solid"

Add:
"1389 alkali metal amalgam, liquid
1392 alkaline earth metal amalgam, liquid
3401 alkali metal amalgam, solid
3402 alkaline earth metal amalgam, solid
3408 lead perchlorate solution"

3.1.4.4.8 In "8 Hypochlorites", insert the entry "UN 2880 Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixture with not less than 5.5% but not more than 16% water after UN 2741".

3.1.4.4.9.1.1 Amend to read: "Lead and its compounds"

Amend to read:
"1470 lead perchlorate, solid"

Add:
"3408 lead perchlorate solution"

3.1.4.4.11 Add:
"1389 alkali metal amalgam, liquid
1392 alkaline earth metal amalgam, liquid
3401 alkali metal amalgam, solid
3402 alkaline earth metal amalgam, liquid"

3.1.4.4.13 Amend to read:
"1447 barium perchlorate, solid
1470 lead perchlorate, solid"

Add:
"3406 barium perchlorate solution
3408 lead perchlorate solution"
3.1.4.4.16  Add:

"3377 sodium perborate monohydrate
3378 sodium carbonate peroxyhydrate"

Add to 3.1.4.4 a new segregation group for alkalis as follows:

"18 Alkalis

1005 ammonia, anhydrous
1160 dimethylamine, aqueous solution
1163 dimethylhydrazine, unsymmetrical
1235 methylamine, aqueous solution
1244 methylhydrazine
1382 potassium sulphide, anhydrous or potassium sulphide with less than 30% water of crystallization
1385 sodium sulphide, anhydrous or sodium sulphide with less than 30% water of crystallization
1604 ethylenediamine
1719 caustic alkali liquid, n.o.s.
1813 potassium hydroxide, solid
1814 potassium hydroxide, solution
1819 sodium aluminate solution
1823 sodium hydroxide, solid
1824 sodium hydroxide solution
1825 sodium monoxide
1835 tetramethylammonium hydroxide
1847 potassium sulphide, hydrated with not less than 30% water of crystallization
1849 sodium sulphide, hydrated with not less than 30% water
1907 soda lime with more than 4% sodium hydroxide
1922 pyrrolidine
2029 hydrazine, anhydrous
2030 hydrazine, aqueous solution
2033 potassium monoxide
2073 ammonia solution relative density less than 0.880 at 15°C, with more than 35% but not more than 50% ammonia
2079 diethylenetriamine
2259 triethylenetetramine
2270 ethylamine, aqueous solution
2318 sodium hydrosulphide with less than 25% water of crystallization
2320 tetraethylenepentamine
2379 1,3-diethylbutylamine
2382 dimethylhydrazine, symmetrical
2386 1-ethylpiperidine
2399 1-methylpiperidine
2401 piperidine
2491 ethanolamine or ethanolamine solution
2579 piperazine
2671 aminopyridines
2672 ammonia solution relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia by mass
2677 rubidium hydroxide solution
2678 rubidium hydroxide, solid
2679 lithium hydroxide solution
2680 lithium hydroxide
2681 caesium hydroxide solution
2682 caesium hydroxide
2683 ammonium sulphide solution
2733 amines, liquid, corrosive, flammable, n.o.s. or polyamines, liquid, corrosive, flammable, n.o.s.
2734 amines, liquid, flammable, corrosive, n.o.s. or polyamines, liquid, flammable, corrosive, n.o.s.
2735 amines, liquid, corrosive, n.o.s. or polyamines, liquid, corrosive, n.o.s.
2797 battery fluid, alkali
2818 ammonium polysulphide solution
2949 sodium hydrosulphide, solid with not less than 25% water of crystallization
3028 batteries, dry, containing potassium hydroxide, solid electric storage
3073 vinylpyridines, stabilized
3253 disodium trioxosilicate
3259 amines, solid, corrosive, n.o.s. or polyamines, solid, corrosive, n.o.s.
3262 corrosive solid, basic, inorganic, n.o.s.
3263 corrosive solid, basic, organic, n.o.s.
3266 corrosive liquid, basic, inorganic, n.o.s.
3267 corrosive liquid, basic, organic, n.o.s.
3293 hydrazine, aqueous solution with not more than 37% hydrazine, by mass
3318 ammonia solution relative density less than 0.880 at 15°C in water, with more than 50% ammonia
3320 sodium borohydride and sodium hydroxide solution with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass
3423 tetramethylammonium hydroxide, solid

Add for the above entries the sentence "separated from" acids in column 16 of the Dangerous Goods List.

Add for the above entries the sentence “reacts violently with acids” in column 17 of the Dangerous Goods List.
Chapter 3.2

3.2.1 Column 2  Add the following sentence at the end of the existing text:
"Unless otherwise indicated for an entry in the Dangerous Goods List, the word "SOLUTION" in a Proper Shipping Name means one or more named dangerous goods dissolved in a liquid that is not otherwise subject to this Code. When a flashpoint is mentioned in this column, the data is based on closed-cup (c.c) methods."

Column 8  Delete "A code including the letters "BP" refers to the use of bulk packagings described in chapter 4.3." and "or "BP""; insert "or" between "P" and "LP".

Column 13  Amend to read "UN tank and Bulk container instructions".

Amend the second paragraph to read:
"When a T code is not provided in this column, it means that the dangerous goods are not authorized for transport in tanks unless specifically approved by the competent authority."

Add the following sentences at the end of the existing amended text:
"Bulk container code – The code "BK2" refers to closed bulk containers used for the transport of bulk goods described in chapter 6.9. When a bulk container code is not provided, it means that the substance is not permitted in a bulk container. Transport in sheeted bulk containers is not permitted in this Code."

3.2.1  In column 8, delete "When "N/R" is ... packaged.".


In column 2 of the Dangerous Goods List, delete "c.c.".

Amend the heading applicable to columns 12, 13 and 14 to read: "Portable tanks and bulk containers". Amend the heading of column 12 to read "IMO tank instructions", the heading of column 13, to read "UN tank instructions" and the heading of column 14 to read "Provisions".

For UN Nos. 1611 and 1704 add "T7" and "TP2" in columns 13 and 14 respectively.

For UN Nos. 0331, 0332 and 3375, insert "T1" in column 13 and "TP1", "TP17" and "TP32" in column 14; and for UN 3375 delete "T2" from column 13 and "TP9" from column 14.

For UN Nos. 1334, 1350, 1363, 1376, 1386, 1395, 1398, 1402, 1408, 1435, 1438, 1446, 1454, 1469, 1474, 1485, 1486, 1495, 1498, 1499, 1942, 2067, 2071, 2211, 2213, 2216, 2217, 2793, 2950, 2969, 3170, 3175, 3243, 3244 and 3314 delete "BP" from column 8.
For UN Nos. 1334, 1350, 1438, 1474, 1486, 1495, 1498, 1499, 1942, 2067, 2213, 2969, 3170 (PG II and III), 3175, 3243, 1363, 1376, 1386, 1398, 1402, 1408, 1435, 1446, 1469, 1485, 2071, 2211, 2216, 2217, 2793, 2900, 2950, 3244 and 3314, insert "BK2" in column 13.

For the liquid, packing group I entries of UN Nos. 1583, 2810, 2927, 2929, 3122, 3123, 3275, 3276, 3278, 3279, 3280, 3281, 3287 and 3289 insert "315" in column 6.

For all the UN Nos. containing the words "fissile- excepted" in lower case in column 2, insert "317" in column 6. (Apply to UN Nos.: 2912, 2913, 2915, 2916, 2917, 2919, 2978, 3321, 3322, 3323 and 3332).

For UN Nos. 1366, 1370, 2005, 2445, 3051, 3052, 3053 and 3076, add "320" in column 6.

UN 0113 Amend the proper shipping name in column 2 to read: "GUANYL NITROSAMINO GUANYLIDENE HYDRAZINE, WETTED with not less than 30% water, by mass".

UN 0118 Delete comma after "(HEXOTOL)".

UN 0498 In column 17, amend "liquid" to read "solid".

UN 0499 UN 0503 In columns 2 and 17, for "AIR-BAG" read "AIR BAG".

UN 1010 Add the following text at the end of the existing name in column 2: "or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED with more than 40% butadienes".

UN 1057 Replace "P003" with "P002" in column 8 and add "PP84" in column 9.

UN 1062 Amend spelling of "chloropicrin".

UN 1070 In column 15, underline "F-C".

UN 1153 Insert an entry after UN 1153, PG II to read: "1153", "ETHYLENE GLYCOL DIETHYL ETHER", "3", ",", "III" ",", "5 l", "P001, LP01", ",", "IBC03", ",", "T1", "T2", "TP1", "F-E, S-D", "Category A", "see entry above", "1153".

UN 1203 (Amend the proper shipping name in the French amendment only.).

UN 1265 Amend column 2 to read "PENTANES, liquid".

UN 1278 In column 15 replace "S-C" with "S-D".

UN 1305 Delete ",, STABILIZED" in column 2.

UN 1327 Add "29" in column 6.

UN 1350 In column 8 add "P002", and in column 17 delete ": (1) transported in quantities of less than 400 kg per package, or (2)".
UN 1364  Add "29" and delete "281" in column 6.
UN 1365  Delete "281" in column 6.
UN 1389  Delete the solid entry and "or solid" in column 17 of the liquid entry.
UN 1392  Delete the solid entry and delete "IBC04" and "B1" in columns 10 and 11 of the liquid entry respectively.
UN 1403  Insert "934" in column 6 and delete "933".
UN 1404  Delete "934" in column 6.
UN 1408  Insert "B6" in column 11.
UN 1420  Add ", LIQUID" in column 2, replace "P403" with "P402" in column 8, delete "IBC04" and "B1" in columns 10 and 11 respectively and delete "solid or" in column 17.
UN 1422  Add ", LIQUID" in column 2, replace "P403" with "P402" in column 8, delete "IBC04" and "B1" in columns 10 and 11 respectively and delete "solid or" in column 17.
UN 1445  Delete the solution entry and delete ", or aqueous solutions" in column 17 (first sentence) of the solid entry.
UN 1447  Delete the solution entry and delete ", or aqueous solutions" in column 17 (first sentence) of the solid entry.
UN 1459  Delete the solution entries (PG II and PG III) and delete "aqueous" and "or solution" in column 17 (first sentence) of the solid entry (PG II).
UN 1470  Delete the solution entry and delete ", or aqueous solutions" in column 17 (first sentence) of the solid entry.
UN 1471  Amend "should" to read "shall" in column 16.
UN 1326  Amend column 9 to read: "PP31 PP40".
UN 1352
UN 1358
UN 1871
UN 1564  Add "LP02" in column 8 for PG III entry.
UN 1577  Delete the solid entry. In column 17 (liquid entry), delete "crystals or" in the first sentence and delete the second sentence.
UN 1578  Delete the liquid entry. In column 17 (solid entry), delete "see entry above" and insert the following paragraph "Yellows crystals. Melting point: approximately 30°C to 80°C. Toxic if swallowed, by skin contact or by inhalation."

UN 1579  Delete the solution entry. Add "LP02" in column 8 (solid entry) and amend the first sentence in column 17 (solid entry) to read "Dry solid or paste".

UN 1590  Delete the solid entry.

UN 1597  Delete the solid entry.

UN 1597  Delete the solid entry. Replace "IBC02" by "IBC03" in column 10 (liquid entry, PG II). Delete "dust" in column 17 (liquid entry, PG II) and add a new entry for PG III as follows: "1597", "DINITROBENZENES, LIQUID", "6.1", "-", "III", "223", "5 l", "P001, LP01", ",-", "IBC03", ",-", ",-", "T7", "TP2", "F-A, S-A", "Category A, "separated from" class 3", "see entry above".

UN 1650  Delete the liquid entry. Add "IBC08" and "B2, B4" in column 10 and 11 (solid entry) respectively.

UN 1656  Delete the solid entry. Amend column 2 (liquid entry, PG II) to read "NICOTINE HYDROCHLORIDE, LIQUID or SOLUTION", delete the first sentence and replace the second sentence by "Miscible with water" in column 17 (liquid entry, PG II). Add a new entry for PG III as follows: "1656", "NICOTINE HYDROCHLORIDE, LIQUID or SOLUTION", "6.1", ",-", "III", "43, 223", "5 l", ",P001, LP01", ",-", "IBC03", ",-", ",-", ",-", "F-A, S-A", "Category A", "see entry above".

UN 1658  Delete the solid entry. Delete the first sentence and replace the second sentence by "Miscible with water in column 17 (liquid entry, PG II). Add a new entry for PG III as follows: "1658", "NICOTINE SULPHATE SOLUTION", "6.1", ",-", "III", "223", "5 l", "P001, LP01", ",-", "IBC03", ",-", ",-", ",-", "F-A, S-A", "Category A", "see entry above".

UN 1664  Delete the solid entry. Amend column 17 (liquid entry) to read: "Yellow liquids. Melting points: ortho-NITROTOLUENE: -4°C, meta-NITROTOLUENE: 15°C. Toxic if swallowed, by skin or by inhalation."

UN 1665  Delete the solid entry. Delete "T13" in column 12 (liquid entry). Amend column 17 (liquid entry) to read: "Yellows liquids. Melting points: 2-NITRO-3-XYLENE: 14°C to 16°C, 3-NITRO-2-XYLENE: 7°C to 9°C, 4-NITRO-3-XYLENE: 2°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.".

UN 1680  Delete the solution entry. In column 17 (solid entry), amend the first and the second sentences to read: "White, deliquescent crystals or lumps. Soluble in water".

UN 1689  Delete the solution entry. Delete "B1" in column 11 (solid entry). Delete "see entry above" and insert the following text in column 17 (solid entry): "White, deliquescent crystals or lumps. Soluble in water. Reacts with acids or acid fumes,
evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation.

UN 1690 Delete the solution entry. In column 4 (solid entry), delete ".". In column 17 (solid entry), delete "or colourless liquid" in the first sentence.

UN 1693 Delete the solid entries (PG II and III).

UN 1694 Delete the solid entry. In column 17 (liquid entry), delete ",, yellow crystals or" in the first sentence and delete ",, meta-BROMOBENZYL CYANIDE 25°C" in the second sentence.

UN 1697 Delete the liquid entry. In column 17 (solid entry), delete "see entry above" and insert the following: "White crystals evolving irritating vapour ("Tear Gas"). Melting point may be as low as 20°C. Toxic if swallowed, by skin contact or by inhalation."

UN 1699 Delete the solid entry. Amend the text in column 17 (liquid entry) to read: "When pure, colourless liquid. The commercial product may be a dark brown liquid. Volatile liquid evolving an irritating vapour ("Tear Gas"). Highly toxic if swallowed, by skin contact or by inhalation."

UN 1701 Add ",, LIQUID" in column 2.

UN 1708 Delete the solid entry. In column 17 (liquid entry), delete "or solids" in the first sentence and delete the second sentence.

UN 1709 Delete the solution entry. Add "LP02" in column 8 (solid entry). In column 17 (solid entry), delete "see entry above" and insert the following text: "White crystals or powder. Toxic if swallowed, by skin contact or by inhalation."

UN 1711 Delete the solid entry. In column 17 (liquid entry), delete the first sentence.

UN 1729 Delete the liquid entry. In column 2 (solid entry), delete ",, SOLID". Add "T3" and "TP33" in columns 13 and 14 (solid entry) respectively. In column 17 (solid entry), delete "see entry above" and insert the following text: "Crystalline powder. Melting point: 22°C. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes."

UN 1733 Delete the solid entry. In column 2 (liquid entry), delete "SOLUTION". In column 17 (liquid entry), delete ",, very deliquescent crystals or" in the first sentence.

UN 1742 Delete the solid entry. In column 17 (liquid entry), delete the first two sentences.

UN 1743 Delete the solid entry. In column 17 (liquid entry), delete the second and the third sentences.
UN 1744  Add PP82 in column 9.

UN 1748  Add "313, 314" in column 6 of the PG II entry. Replace "PP78" with "PP85" in column 9 of the PG II entry. Add a new entry for PG III as follows: "1748", "CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)", "5.1", "-", "III", "316", "5 kg", "P002", "PP85", ",-", ",-", ",-", ",-", ",-", "F-H, S-Q", "Category D. Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. "Separated from" ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances", "see entry above".

UN 1805  Delete the solid entry. In column 2 (liquid entry), replace "LIQUID" with "SOLUTION" and add "223" in column 6 (liquid entry). In column 17 (liquid entry), amend the text to read "Miscible in water. Mildly corrosive to most metals."

UN 1811  Delete the liquid entry. Amend the name in column 2 (solid entry) to read "POTASSIUM HYDROGEN DIFLUORIDE, SOLID". In column 17 (solid entry) delete "see entry above" and insert the following text: "White crystalline solid. Decomposed by heat or acids, evolving hydrogen fluoride, a toxic, extremely irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly 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."

UN 1812  Delete the solution entry. In column 17 (solid entry) delete "see entry above" and insert the following text: "White, deliquescent crystals or powder. Decomposed by acids, evolving hydrogen fluoride, irritating and corrosive gas. Toxic if swallowed, by skin contact or by inhalation."

UN 1825  Insert "B20" in column 11 for the PG II entry.

UN 1827  Delete "B20" from column 11.

UN 1835  Add "SOLUTION" in column 2. Amend the first sentence in column 17 (PG II) to read "Miscible with water". Add a new entry for PG III as follows: "1835", "TETRAMETHYLAMMONIUM HYDROXYDE SOLUTION", "8", ",-", "III", "223", "5 l", "P001, LP01", ",-", "IBC03", ",-", "T4", "T7", "TP2", "F-A, S-B", "Category A, "Separated from" acids", "see entry above".

UN 1843  Delete the liquid entry. In column 2 (solid entry), replace "ortho" by "o". Delete "T7", "T7" and "TP2" in columns 12, 13 and 14 (solid entry) respectively. In column 17 (solid entry) delete "see entry above" and insert the following text: "May support combustion and burn without oxygen. When involved in a fire, evolves toxic fumes. Forms extremely sensitive explosive compounds with lead, silver or other heavy metals and their compounds. Toxic if swallowed, by skin contact or by inhalation."
UN 1848  Delete ", flammable" in column 17.

UN 1856  Delete "281" from column 6.

UN 1889  Add in column 16 ""Separated from" acids.".

UN 1931  In column 16, amend last sentence to read "Away from class 6.2 and acids.".

UN 1938  Delete the solid entry. In column 17 (liquid entry, PG II), delete the first and the second sentences. Add a new entry for PG III as follows: "1938", "BROMOACETIC ACID SOLUTION", "8", ",", "III", "223", "51", "P001, LP01", ",", "IBC03", ",", ",", "T7", "TP2", "F-A, S-B", "Category A, Clear of living quarters", "see entry above".

UN 1942  Add "class 4.1" between ""Separated from"" and "combustible material" in column 16.

UN 1950  Revise entry to read as follows:
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>17</th>
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<tbody>
<tr>
<td>1950</td>
<td>AEROSOLS</td>
<td>2</td>
<td>see SP63</td>
<td>-</td>
<td>63</td>
<td>190</td>
<td>277</td>
<td>see SP277</td>
<td>P003</td>
<td>PP17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>F-D, S-U</td>
<td>*</td>
</tr>
</tbody>
</table>

* For AEROSOLS with a maximum capacity of 1 l.:
  CATEGORY A.
  Segregation as for class 9 but "away from" sources of heat and "separated from" class 1 except division 1.4.

For AEROSOLS with a capacity above 1 l.:
  CATEGORY B.
  Segregation as for the appropriate division of class 2."
UN 1963  Add "TP34" in column 14.
UN 1966  Add "TP34" in column 14 and "Separated from "chlorine." in column 16.
UN 1993  Insert "T4" in column 12 and amend "T4" to read "T7" in column 13 for the PG II entry, and amend "T2" to read "T4" for the PG III entry.
UN 2003  Delete.
UN 2014  Add "PP10" and delete "PP29" in column 9.
UN 2015  In column 12, insert "T9".
UN 2038  Delete the solid entry. In column 17 (liquid entry), replace the first sentence by "Immiscible with water."
UN 2067  Add "class 4.1", between "Separated from" and "combustible material" in column 16
UN 2074  Delete the solution entry. In column 17 (solid entry), delete "see entry above" and insert the following text: "Crystals or powder. Soluble in water. May polymerise violently on melting. Toxic if swallowed, by skin contact or by inhalation."
UN 2076  Delete the solid entry. In column 17 (liquid entry), delete "or solids" in the first sentence, delete "or soluble in" in the second sentence and replace the third sentence by "Melting point of meta-CRESOL: 12°C".
UN 2077  Delete the liquid entry. In column 2 (solid entry), delete ", SOLID". Add "T1" and "TP33" in columns 13 and 14 (solid entry). In column 17 (solid entry), delete "see entry above" and insert the following text: "White crystals. Toxic if swallowed, by skin contact or by inhalation."
UN 2079  Amend column 16 to read ""Separated from" acids" as last sentence. Add in column 17 "Reacts violently with acids."
UN 2208  Insert "313" and "314" in column 6 and "PP85" in column 9, delete PP78 from column 9, amend "should" to read "shall" in column 16 (x2).
UN 2211  Amend "should" to read "shall" in column 16.
UN 2235  Delete the solid entry. In column 2 (liquid entry), delete "para-". In column 17 (liquid entry), amend the text to read: "Colourless liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation."
UN 2236  Delete the solid entry. In column 17 (liquid entry), amend the text to read: "Colourless liquid with a pungent odour. Immiscible with water. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation."
UN 2239  Delete the liquid entry. In column 17 (solid entry), delete "see entry above" and insert the following text: "Crystalline solids. Some isomers may melt at low temperature: melting range between 0°C and 24°C. Toxic if swallowed, by skin contact or by inhalation."

UN 2259  Amend column 16, last sentence to read ""Separated from" acids." Add in column 17 "Reacts violently with acids.".

UN 2261  Delete the liquid entry. Delete "T7" and "TP2" in columns 13 and 14 (solid entry) respectively. In column 17 (solid entry), delete "see entry above" and insert the following text: "Crystals or needles. Toxic if swallowed, by skin contact or by inhalation."

UN 2291  Add "LP02" in column 8.

UN 2306  Delete the solid entry. In column 17 (liquid entry), delete "or low melting point (31°C to 32°C) solids" in the first sentence and amend the second sentence to read "Immiscible with water".

UN 2308  Delete the solid entry. In column 17 (liquid entry), delete "Colourless, crystalline solid, or" in the first sentence.

UN 2315  Delete the solid entry. In column 17 (liquid entry), amend the fifth sentence to read: "This entry also covers articles, such as transformers and condensers, containing free liquid polychlorinated biphenyls."

UN 2401  Add in column 16 ""Separated from" acids." Add in column 17 "Reacts violently with acids.".

UN 2433  Delete the solid entry. In column 17 (liquid entry), delete the first and the second sentences. The (new) first sentence is amended to read "Immiscible with water."

UN 2445  Add ", LIQUID" in column 2 and "320" in column 6. Delete "Liquid." in column 17.

UN 2446  Add ", SOLID" in column 2.

UN 2511  Delete " SOLUTION" in column 2 and insert "223" in column 6. Delete the entry for "2-CHLOROPROPIONIC ACID, SOLID". Delete in column 17 "Crystals or a" and "Dust and liquid".

UN 2513  In column 16, add ""Separated from" alkalis."

UN 2552  Add ", LIQUID" in column 2. In column 17, delete the first and the second sentences.

UN 2579  Add in column 16 "Separated from" acids." Add in column 17 "Reacts violently with acids.".

UN 2626  Replace "kg" with "l" in column 7.
UN 2662  Delete the solution entry. In column 17 (solid entry), delete "see entry above" and insert the following text: "White crystals. Soluble in water. Toxic if swallowed, by skin contact or by inhalation."

UN 2669  Delete the solid entry. In column 17 (liquid entry, PG II), delete "White or pink crystals or" in the first sentence, delete the second and fourth sentences and delete "Liquids" at the beginning of the third sentence. Add a new entry for PG III as follows: "2669", "CHLOROCRESOLS SOLUTION", "6.1", ",", "III", "223", "5 l", "P001, LP01", ",", "IBC03", ",", "T4", "T7", "TP2", "F-A, S-A", "Category A, Keep as cool as reasonably practicable", "see entry above".

UN 2691  In column 16, add ""Separated from" alkalis and ammonia.".

UN 2698  Delete "940" from column 6.

UN 2730  Delete the solid entry. In column 17 (liquid entry), amend the text to read "Light reddish or amber liquid. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation".

UN 2732  Delete the solid entry. In column 17 (liquid entry), amend the text to read "Colourless to pale yellow liquids. Melting point of 1-BROMO-3-NITROBENZENE: 17°C. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.".

UN 2753  Delete the solid entry. In column 17 (liquid entry), amend the text to read "Liquids with a strong odour. Immiscible with water. Toxic if swallowed, by skin contact or by inhalation.".

UN 2794  Delete "III" in column 5 and amend column 7 to read "1 l".

UN 2795  Delete "III" in column 5.

UN 2800  Delete "III" in column 5. Delete "940" from column 6 and add "29". Amend column 7 to read "1 l".

UN 2813  For packing groups I, II and III, add "PP83" in column 9.

UN 2814  Delete "274" and add ", 318" in column 6.

UN 2834  Delete the solution entry. Delete ", SOLID" in column 2 (solid entry). In column 17 (solid entry), delete "see entry above" and insert the following text: "Colourless to yellow deliquescent crystals. Soluble in water. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.".

UN 2880  Add "313, 314" in column 6 of the PG II entry. Replace "PP78" by "PP85" in column 9 of the PG II entry. Amend "should" to read "shall" in column 16 (x2) of the PG II entry. Add a new entry for PG III as follows: "2880", "CALCIUM
HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE HYDRATED MIXTURE with not less than 5.5% but not more than 16% water”, “5.1”, “”, “III”, “316”, “5 kg”, “P002”, “PP85”, “”, “”, “”, “”, “”, “”, “F-H, S-Q”, “Category D. Cargo transport units shall be shaded from direct sunlight and stowed away from sources of heat. Packages in cargo transport units shall be stowed so as to allow for adequate air circulation throughout the cargo. "Separated from" ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances", "see entry above".

UN 2900 Delete "274" and add "318" in column 6.
UN 2921 Replace "S-C" by "S-G" in column 15.
UN 2949 Delete the solution entry. In column 17 (solid entry), delete "see entry above" and insert the following text: "Colourless needles or yellow flakes. Soluble in water with a foul odour. Melting point: 52ºC. Reacts with acids, evolving hydrogen sulphide, a toxic and flammable gas. Causes burns to skin, eyes and mucous membranes.".

UN 2908 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 4."
UN 2909 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 3."
UN 2910 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 1."
UN 2911 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 2."
UN 2912 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 5."
UN 2913 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 8."
UN 2915 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 9."
UN 2916 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 10."
UN 2917 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 11."
UN 2919 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 14."
UN 2937 Delete the solid entry. In column 17 (liquid entry), delete "or solid" in the first sentence.
UN 2977 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 6, 7, 9, 10 or 11, according to type of package.".
UN 2978 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 5, 6, 7, 9, 10 or 11, according to type of package."
UN 2990 In column 6, add "956". 
UN 3020 Amend "1ℓ" to read "500mℓ" in column 7 for the PG III entry.

UN 3049 Delete.

UN 3050 Delete.

UN 3052 Delete the solid entry. In column 17 (liquid entry), delete the first sentence.

UN 3065 In column 17 of the PG III entry, amend the last sentence to read "5. when carried on board ships, the containers should be stowed in open cargo spaces or in enclosed cargo spaces complying with the requirements for class 3 flammable liquids with a flashpoint of 23°C c.c. or less in regulation II-2/19 of SOLAS 74, as amended."

UN 3072 In column 6, add "956".

UN 3090 Add "957" in column 6.

UN 3091 Add "957" in column 6.

UN 3125 Replace "P001" with "P002" in column 8 for PG III entry.

UN 3149 Add "PP10" in column 9.

UN 3151 Amend the third sentence in column 17 to read: "This entry also covers articles, such as transformers and condensers, containing free liquid polyhalogenated biphenyls or polyhalogenated terphenyls."

UN 3152 In column 6, replace "908" with "958". Amend the fourth sentence in column 17 to read: "This entry covers articles, such as rags, cotton waste, clothing, sawdust, containing polyhalogenated biphenyls or polyhalogenated terphenyls where no free visible liquid is present."

UN 3172 Delete the solid entries (PG I, II and III). Replace "Category A" with "Category B" in column 16 of the PG I and II entries.

UN 3176 Delete "TP9" in column 14, twice.

UN 3182 Amend column 9 of the PG II entry to read "PP31 PP40".

UN 3203 Delete.

UN 3205 Replace "S-Q" by "S-J" in column 15.

UN 3206 Replace "S-Q" by "S-J" in column 15.

UN 3207 Delete.

UN 3209 Amend column 9 of the PG II entry, to read "PP31 PP40".
| UN 3212 | Amend "should" to read "shall" in column 16. |
| UN 3231 | For "2.4.2.3.2.7" read "2.4.2.3.2.3" in column 17. |
| UN 3234 | Delete the “●” in column 4. |
| UN 3268 | For "AIR-BAG" read "AIR BAG" in column 2. |
| UN 3272 | In column 10 of the PG III entry, insert "IBC03". |
| UN 3276 | Amend column 2 to read as follows: "NITRILES, TOXIC, LIQUID, N.O.S.". |
| UN 3278 | Delete the solid entries (PG I, II and III). For the liquid entry, amend the name in column 2 to read as follows: "ORGANOPHOSPHORUS COMPOUND, TOXIC, LIQUID, N.O.S.". |
| UN 3280 | Delete the solid entries (PG I, II and III). Amend column 2 to read as follows: "ORGANOARSENIC COMPOUND, LIQUID, N.O.S.". In column 17 (liquid entry), delete the first sentence. |
| UN 3281 | Delete the solid entries (PG I, II and III). Amend column 2 to read as follows: "METAL CARBONYLS, LIQUID, N.O.S.". In column 17 (liquid entry), delete the second sentence and delete "dust" in the fourth sentence. |
| UN 3282 | Delete the solid entries (PG I, II and III). Amend column 2 to read as follows: "ORGANOMETALLIC COMPOUND, TOXIC, LIQUID, N.O.S.". |
| UN 3283 | Amend the name in column 2 to read as follows: "SELENIUM COMPOUND, SOLID, N.O.S.". |
| UN 3285 | For "gm" read "g" in column 7. |
| UN 3292 | In column 6, delete "936". |
| UN 3314 | Replace "NONE" with "5 kg" in column 7. |
| UN 3315 | Delete the solid entry. Delete ", LIQUID" in column 2 (liquid entry). |
| UN 3321 | In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 6.". |
| UN 3322 | In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 7.". |
| UN 3323 | In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 12.". |
| UN 3324 | In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 6 and 13.". |
UN 3325 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 7 and 13."

UN 3326 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 8 and 13."

UN 3327 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 9 and 13."

UN 3328 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 10 and 13."

UN 3329 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 11 and 13."

UN 3330 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 12 and 13."

UN 3331 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 14 and 13."

UN 3332 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 9."

UN 3333 In column 17, amend to read "See 1.1.3.1.1, and IAEA Transport Schedule 9 and 13."

UN 3326, UN 3328 In column 2, insert comma after "RADIOACTIVE MATERIAL".

UN 3332-UN 3333 Delete underlining from "S-S" in column 16.

UN 3359 Amend existing text in column 17 to read:

"A 'FUMIGATED UNIT' is a closed cargo transport unit loaded with cargoes under fumigation. The fumigant gases used are either poisonous or asphyxiant. The gases are usually evolved from solid or liquid preparations distributed within the unit. Fumigants shall not be applied to the contents of a cargo transport unit once it has been loaded aboard the ship. A cargo transport unit that has been fumigated is not subject to the provisions of this Code if it has been completely ventilated either by opening the doors of the unit or by mechanical ventilation to ensure that no harmful concentration of gas remains (see also special provision 910)."

UN 3360 In column 17, amend "COTTON, DRY" to read "cotton, dry" and add after "360 kg/m3" the following: ", flax, dry having a density not less than 400 kg/m³ and sisal, dry having a density not less than 620 kg/m³n."

UN 3363 In column 17, amend the text to read: "Types of articles transported under this entry contain only limited quantities of dangerous goods."
UN 3364 Delete full stop in column 2.

UN 3372 Delete.

UN 3373 In the name in column 2, insert "or CLINICAL" before "SPECIMENS" and add "319" in column 6.

UN 3375 Delete "306" in column 6. Add "class 4.1" between "Separated from" and "combustible material" in column 16. Delete the last sentence in column 17.

UN 3376 Amend to read: "4 – NITROPHENYLHYDRAZINE, with not less than 30% water, by mass" in column 2.

**Rationalized approach for the assignment of tank instructions for solids:**

Assign TP9 to all solid n.o.s. entries of classes 4.2, 6.1 and 8, packing group I to which a T code has been assigned.
AMENDMENTS TO THE DANGEROUS GOODS LIST

CLASS 1

<table>
<thead>
<tr>
<th>UN number(s) concerned</th>
<th>Amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 0004, 0222, 0402</td>
<td>Replace in column (16) &quot;&quot;Away from&quot; EXPLOSIVE, BLASTING, TYPE C, UN 0083 which contains chlorates or perchlorates&quot; by &quot;&quot;Away from&quot; explosives containing chlorates or perchlorates&quot;</td>
</tr>
<tr>
<td>UN 0083</td>
<td>Replace in column (16) &quot;When containing chlorates or perchlorates stow &quot;away from&quot; explosives containing ammonium nitrate or other ammonium salts&quot; by &quot;&quot;Away from&quot; ammonium compounds and explosives containing ammonium compounds or salts&quot;</td>
</tr>
<tr>
<td>UN 0081, 0082, 0331, 0332 and 0241</td>
<td>Add in column (16) &quot;When containing ammonium compounds, &quot;away from&quot; chlorates or perchlorates and explosives containing chlorates and perchlorates&quot;</td>
</tr>
<tr>
<td>UN 0395, 0396, 0397, 0398, 0399, 0400, 0449, 0450 (Class 1, J)</td>
<td>Replace &quot;When under deck segregate from other explosives as for class 3&quot; by &quot;&quot;Separated from&quot; division 1.4 and &quot;separated longitudinally by an intervening complete compartment or hold from&quot; division 1.1, 1.2, 1.3, 1.5 and 1.6 except from explosives of compatibility group J&quot;</td>
</tr>
</tbody>
</table>

CLASS 2

<table>
<thead>
<tr>
<th>UN number(s) concerned</th>
<th>Amendments</th>
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<tbody>
<tr>
<td>UN 3138, 2034, 2600</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; chlorine&quot;</td>
</tr>
<tr>
<td>UN 1003</td>
<td>Delete &quot;&quot;separated from&quot; acetylene&quot;</td>
</tr>
<tr>
<td>UN 2418</td>
<td>Add in column (16) &quot;Separated from&quot; acids</td>
</tr>
</tbody>
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CLASS 3

<table>
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<th>UN number(s) concerned</th>
<th>Amendments</th>
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<tbody>
<tr>
<td>UN 1235, 1297</td>
<td>Replace in column (16) &quot;&quot;Away from&quot; mercury and its compounds&quot; by &quot;&quot;Separated from&quot; mercury and mercury compounds&quot;</td>
</tr>
<tr>
<td>UN 2347, 2378</td>
<td>Replace in column (16) &quot;&quot;Away from&quot; acids&quot; by &quot;&quot;Separated from&quot; acids&quot;</td>
</tr>
<tr>
<td>UN 3022</td>
<td>Replace in column (16) &quot;&quot;Away from&quot; class 8&quot; by &quot;&quot;Away from&quot; acids and alkalis&quot;</td>
</tr>
<tr>
<td>UN 1865</td>
<td>Include in column (16) &quot;Segregation as for class 5.1 but &quot;away from&quot; classes 4.1, 5.1 and 7&quot;</td>
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## CLASS 4.1

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<tr>
<td>UN 1309</td>
<td>Replace in column (16) &quot;&quot;Separated from&quot; iron oxide&quot; by &quot;&quot;Separated from&quot; class 5.1, acids, alkalis and iron oxide&quot;</td>
</tr>
<tr>
<td>UN 1869</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; class 5.1, acids, alkalis and iron oxide&quot;</td>
</tr>
<tr>
<td>UN 2907</td>
<td>Add in column (16) &quot;&quot;Away from&quot; class 3 and heavy metals and their salts&quot; To add in column (17) &quot;May form extremely sensitive compounds with heavy metals or their salts&quot;</td>
</tr>
<tr>
<td>UN 1324</td>
<td>Replace in column (16) &quot;&quot;Separated from&quot; class 3&quot; by &quot;&quot;Away from&quot; class 3&quot;</td>
</tr>
<tr>
<td>UN 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240</td>
<td>Replace in column (16) &quot;&quot;Separated from&quot; class 8&quot; by &quot;&quot;Separated from&quot; acids and alkalis&quot;</td>
</tr>
<tr>
<td>UN 3242</td>
<td>Replace in column (16) &quot;&quot;Separated from&quot; class 5.1 and class 8&quot; by &quot;&quot;Separated from&quot; class 5.1, acids and alkalis&quot;</td>
</tr>
<tr>
<td>UN 1326, 1346, 1358, 1868, 1341, 1343, 1350, 1358, 1868, 1869, 2448</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; class 5.1&quot;</td>
</tr>
<tr>
<td>UN 1326, 1338, 1339, 1340, 1341, 1343, 1350, 1358, 1868, 1869, 2448</td>
<td>Delete in column (17) &quot;most&quot; and &quot;such as chlorates, nitrates, perchlorates and permanganates&quot; to read: &quot;Forms explosive mixtures with oxidizing substances&quot;</td>
</tr>
<tr>
<td>UN 1352, 2878</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; class 5.1&quot; Add in column (17) &quot;Forms explosive mixtures with oxidizing substances&quot;</td>
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## CLASS 4.2

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<tr>
<td>UN 1374</td>
<td>Delete in column (16) &quot;&quot;Separated from&quot; class 6.2&quot;</td>
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<tr>
<td>UN 3254</td>
<td>Replace in column (16) &quot;&quot;Separated from&quot; peroxides, halogens, nitric oxides and carbon tetrachloride&quot; by &quot;&quot;Separated from&quot; carbon tetrachloride&quot;</td>
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<tr>
<td>UN 1382, 1385</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; acids&quot;</td>
</tr>
<tr>
<td>UN 1556, 1557</td>
<td>Add in column (16) &quot;For arsenic sulphides, &quot;separated from&quot; acids&quot; Add in column (17) &quot;In contact with acids, arsenic sulphide evolves hydrogen sulphide, a toxic and flammable gas&quot;</td>
</tr>
<tr>
<td>UN 2008, 2545, 2546</td>
<td>Delete in column (17) &quot;most&quot; and &quot;such as chlorates, nitrates, perchlorates and permanganates&quot; to read: &quot;Forms explosive mixtures with oxidizing substances&quot;</td>
</tr>
<tr>
<td>UN 3189</td>
<td>Add in column (17) &quot;Forms explosive mixtures with oxidizing substances.&quot;</td>
</tr>
<tr>
<td>UN 3052, 3461</td>
<td>Add in column (16) &quot;&quot;Separated from&quot; UN 2716&quot;</td>
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CLASS 4.3

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<tr>
<td>UN 1395, 1398</td>
<td>Add &quot;&quot;Away from&quot; liquid halogenated hydrocarbons&quot; in column (16)</td>
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<tr>
<td>UN 1396, 1418</td>
<td>Add in column (17) &quot;Reacts with liquid halogenated hydrocarbons&quot;</td>
</tr>
<tr>
<td>UN 1395, 1396, 1398, 1408, 1436</td>
<td>Add in column (16) &quot;Separated from&quot; acids and alkalis</td>
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CLASS 5.1

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<td>UN 1445, 1447, 1450, 1452, 1453, 1455, 1458, 1459, 1461, 1462, 1470, 1473, 1475, 1481, 1484, 1485, 1489, 1494, 1495, 1496, 1502, 1506, 1508, 1513, 2469, 2573, 2719, 2721, 2723</td>
<td>Replace in column (16) &quot;Separated from&quot; powdered metals, ammonium compounds and cyanides by &quot;Separated from&quot; ammonium compounds and cyanides</td>
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<tr>
<td>UN 2427, 2428, 2429, 3210, 3211, 3213</td>
<td>Replace in column (16) &quot;Separated from&quot; powdered metals, ammonium compounds and cyanides by &quot;Separated from&quot; ammonium compounds, cyanides and sulphur</td>
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<tr>
<td>UN 1442</td>
<td>Replace in column (16) &quot;Separated from&quot; powdered metals, cyanides and hydrogen peroxide by &quot;Separated from&quot; cyanides and hydrogen peroxide</td>
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<tr>
<td>UN 1492, 1505, 3215</td>
<td>Add in column (16) &quot;Separated from&quot; ammonium compounds and cyanides to add in column (17) &quot;Reacts fiercely with cyanides when heated or by friction. May form explosive mixture with powdered metals or ammonium compounds&quot;</td>
</tr>
<tr>
<td>UN 3216</td>
<td>Add in column (16) &quot;Separated from&quot; ammonium compounds, cyanides and sulphur</td>
</tr>
<tr>
<td>UN 1471, 1748, 2208, 2741, 2880, 3212</td>
<td>Amend special segregation provisions in column (16) related to powdered metals, ammonium compounds, cyanides and hydrogen peroxide to read &quot;Separated from&quot; ammonium compounds, acids, cyanides, hydrogen peroxides and liquid organic substances To replace in column (17) of UN 2741 &quot;reacts vigorously with sulphuric acid&quot; by &quot;Reacts with acids, evolving chlorine, an irritating, corrosive and toxic gas&quot;</td>
</tr>
<tr>
<td>UN 1448, 1456, 1482, 1490, 1503, 1515</td>
<td>Replace in column (16) &quot;Separated from&quot; powdered metals, ammonium compounds, cyanides, hydrogen peroxide, peroxides and superoxides by &quot;Separated from&quot; ammonium compounds, cyanides and peroxides</td>
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### CLASS 5.2

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<th>Amendments</th>
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<td>UN 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120</td>
<td>Add in column (16) &quot;Separated from&quot; acids and alkalis</td>
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### CLASS 6.1

<table>
<thead>
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<tr>
<td>UN 1541</td>
<td>Replace in column (16) &quot;Away from&quot; class 8 by &quot;Separated from&quot; acids and alkalis. Add in column (17) &quot;acids and&quot; before &quot;alkalis&quot;</td>
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<tr>
<td>UN 2521</td>
<td>Replace in column (16) &quot;Away from&quot; class 8 by &quot;Away from&quot; acids and alkalis</td>
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<tr>
<td>UN 2785</td>
<td>Replace in column (16) &quot;Away from&quot; class 8 by &quot;Away from&quot; acids and alkalis</td>
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</tbody>
</table>
**UN number(s) concerned** | **Amendments**
--- | ---
UN 1843 | Amend column (16) to read "Category B. "Away from" heavy metals and their salts. "Separated from" classes 3 and 4.1. "Separated longitudinally by an intervening complete compartment or hold from" class 1."
UN 1599, 1687 | Replace in column (16) ""Away from" lead and its compounds" by ""Away from" heavy metals and their salts"
UN 2716 | Replace in column (16) ""Separated from" class 8 and from mercury salts" by ""Separated from" acids, alkalis, mercury salts, UN 3052 and UN 3461
UN 2272, 2273, 2382, 2650 and 2738 | Add in column 16 ""Separated from" class 5.1"
UN 1546 | Add in column 16 ""Separated from" alkalis"
UN 1547, 1565, 1572, 1575, 1587, 1620, 1626, 1636, 1642, 1653, 1679, 1684, 1688, 1690, 1713, 1812, 2019, 2224, 2272, 2273, 2316, 2317, 2337, 2470, 2474, 2480, 2481, 2505, 2655, 2668, 2674, 2853, 2854, 2855, 2856, 2874, 3275, 3276 | Replace in column (16) ""Away from" acids" by ""Separated from" acids"
UN 2433, 2859, 2861 | Include in column (16) "Segregation as for class 5.1 but "away from" classes 4.1, 5.1 and 7"
UN 1694 | Add in column 16 ""Separated from" acids"

**CLASS 8**

**UN number(s) concerned** | **Amendments**
--- | ---
UN 2705 | Replace in column (16) ""Away from" class 8" by ""Away from" acids and alkalis"
UN 1719, 2033, 2677, 2678, 2679, 2681, 2682, 2797 | Add in column 16 ""Away from" ammonium salts"
UN 1727, 1740, 1756, 1811, 1835, 1847, 2079, 2259, 2439, 2683, 2693, 2734, 2735, 2818, 2949, 3259, 3262, 3263, 3266, 3267, 3320 | Replace in column (16) ""Away from" acids" by ""Separated from" acids"
UN 1732, 1755, 1806, 1908 | Include in column (16) "Segregation as for class 5.1 but "away from" classes 4.1, 5.1 and 7"
Amend the columns 13 and 14 for all solid entries in the dangerous goods list as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Sub.</th>
<th>PG</th>
<th>Tank Instruction 13</th>
<th>Tank prov. 14</th>
<th>Apply to</th>
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<tbody>
<tr>
<td>4.1</td>
<td>I</td>
<td>-</td>
<td>-</td>
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<td>All UN Nos. in this group</td>
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<tr>
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<td>II</td>
<td>T3</td>
<td>TP33</td>
<td>1309, 1323, 1325 (replace &quot;TP1&quot; with &quot;TP33&quot;), 1326, 1339, 1341, 1343, 1345, 1352, 1358, 1437, 1868, 1871, 2925, 2926, 2989, 3089, 3175, 3178, 3179, 3180, 3181, 3182, 3242</td>
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<td>III</td>
<td>T1</td>
<td>TP33</td>
<td>1309, 1312, 1313, 1314, 1318, 1325 (replace &quot;TP1&quot; with &quot;TP33&quot;), 1328, 1330, 1332, 1334, 1338, 1346, 1350, 1869, 2001, 2213, 2538, 2687, 2714, 2715, 2717, 2878, 2925, 2926, 2989, 3089, 3097, 3178, 3179, 3180, 3181, 3182</td>
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<td>T21</td>
<td>TP7 TP33</td>
<td>1383, 1854, 2005, 2008, 2870, 2881, 3200, 3254</td>
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<td>T3</td>
<td>TP33</td>
<td>1361, 1369, 1374, 1378, 1382, 1384, 1385, 1431, 1923, 1929, 2004, 2008, 2318, 2545, 2546, 2881, 2940, 3088, 3189, 3190, 3191, 3192, 3205, 3305, 3313, 3341, 3342</td>
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<td>TP33</td>
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<tr>
<td>4.3</td>
<td>6.1</td>
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<tr>
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<td>1725, 1726, 1727, 1740, 1756, 1759, 1770, 1794, 1806, 1807, 1811, 1813, 1823, 1825, 1839, 1847, 1849, 1939, 2033, 2430, 2439, 2506, 2509, 2583, 2670, 2678, 2680, 2682, 2691, 2869, 2921, 2923, 3084, 3095, 3096, 3147, 3244, 3259, 3260, 3261, 3262, 3263</td>
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<td>1740, 1759, 1773, 1907, 2214, 2215, 2215, 2280, 2331, 2430, 2440, 2475, 2503, 2507, 2508, 2578, 2579, 2585, 2698, 2802, 2803, 2823, 2834, 2865, 2869, 2905, 2923, 2967, 3147, 3253, 3259, 3260, 3261, 3262, 3263</td>
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Add the following new entries:

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<th>UN No.</th>
<th>Name and description</th>
<th>Class or division</th>
<th>Subsidiary risks</th>
<th>UN packing group</th>
<th>Special provisions</th>
<th>Limited quantities</th>
<th>Instructions</th>
<th>Provisions</th>
<th>IMO UN Provisions</th>
<th>EmS</th>
<th>Properties and observations</th>
<th>UN No.</th>
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<tbody>
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<td>5.1</td>
<td>III</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>5 kg</td>
<td>IBC08</td>
<td>B3</td>
<td>T1 BK2</td>
<td>TP33</td>
<td>F-A, S-Q</td>
<td>3377</td>
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<td>T3 BK2</td>
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</tr>
</tbody>
</table>

Properties and observations:
- **White crystals or powder.**
- Partially soluble in water.
- Mixtures with combustible material are readily ignited and may burn fiercely. Risk of decomposition when exposed to continuous heat (exothermic decomposition > 60°C). When involved in a fire or exposed to high temperatures, it may decompose yielding oxygen and steam. Harmful if swallowed.

Special provisions:
<table>
<thead>
<tr>
<th>UN No.</th>
<th>Name and description</th>
<th>Class or division</th>
<th>Subsidiary risks</th>
<th>UN packing group</th>
<th>Special provisions</th>
<th>Limited quantities</th>
<th>Instructions</th>
<th>Provisions</th>
<th>Provisions</th>
<th>IMO</th>
<th>UN</th>
<th>Provisions</th>
<th>EmS</th>
<th>Stowage and segregation</th>
<th>Properties and observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3378</td>
<td>SODIUM CARBONATE PEROXYHYDRATE</td>
<td>5.1 - III - 5 kg</td>
<td>P002 LP02</td>
<td>IBC08 B3, B13</td>
<td>TP33</td>
<td>S-Q</td>
<td>Category A. Keep as dry as reasonably practicable. &quot;Separated from&quot; permanganates. &quot;Away from&quot; any sources of heat.</td>
<td>See entry above</td>
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<tr>
<td>3379</td>
<td>DESENSITIZED EXPLOSIVE, LIQUID, N.O.S.</td>
<td>3 - I</td>
<td>274 311</td>
<td>None</td>
<td>P099</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>S-Y</td>
<td>Category D. &quot;Away from&quot; heavy metals and their salts</td>
<td>Desensitized explosive. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals and their salts.</td>
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<tr>
<td>3380</td>
<td>DESENSITIZED EXPLOSIVE, SOLID, N.O.S.</td>
<td>4.1 - I</td>
<td>274 311</td>
<td>None</td>
<td>P099</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>S-J</td>
<td>Category D. &quot;Away from&quot; class 3 and heavy metals and their salts</td>
<td>Desensitized explosive. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals and their salts.</td>
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<tr>
<td>3381</td>
<td>TOXIC BY INHALATION LIQUID, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LCso</td>
<td>6.1 - I</td>
<td>274</td>
<td>None</td>
<td>P601</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T22</td>
<td>TP2 TP13 TP9</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters.</td>
<td>A variety of toxic liquids which present a significant toxic inhalation hazard. Highly toxic by inhalation. Toxic if swallowed or by skin contact.</td>
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</tr>
<tr>
<td>3382</td>
<td>TOXIC BY INHALATION LIQUID, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LCso</td>
<td>6.1 - I</td>
<td>274</td>
<td>None</td>
<td>P602</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T20</td>
<td>TP2 TP13 TP9</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters.</td>
<td>A variety of toxic liquids which present a significant toxic inhalation hazard. Toxic by inhalation, if swallowed or by skin contact.</td>
<td></td>
</tr>
</tbody>
</table>
| UN No. | Name and description | Class or division | Subsidiary risks | UN packing group | Special provisions | Limited quantities | Instruc- 
| | | | | | | tions | Provisions | Instruc- 
<p>| | | | | | | tion | Provisions | IMO | UN | Provisions | EmS | Stowage and segregation | Properties and observations | UN No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3383 | TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m$^3$ and saturated vapour concentration greater than or equal to 500 LC$<em>{50}$ | 6.1 | 3 | I | 274 | None | P601 | - | - | - | - | T22 | TP2 | TP13 | TP9 | F-E, S-D Category D. Clear of living quarters. A variety of toxic liquids which present a significant toxic inhalation hazard as well as being flammable. Highly toxic by inhalation. Toxic if swallowed or by skin contact. | 3383 |
| 3384 | TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m$^3$ and saturated vapour concentration greater than or equal to 10 LC$</em>{50}$ | 6.1 | 3 | I | 274 | None | P602 | - | - | - | - | T20 | TP2 | TP13 | TP9 | F-E, S-D Category D. Clear of living quarters. A variety of toxic liquids which present a significant toxic inhalation hazard as well as being flammable. Toxic by inhalation, if swallowed or by skin contact. | 3384 |
| 3385 | TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m$^3$ and saturated vapour concentration greater than or equal to 500 LC$<em>{50}$ | 6.1 | 4.3 | I | 274 | None | P601 | - | - | - | - | T22 | TP2 | TP13 | TP9 | F-G, S-N Category D. Clear of living quarters. A variety of toxic liquids which present a significant toxic inhalation hazard as well as being water-reactive. Highly toxic by inhalation. Toxic if swallowed or by skin contact. | 3385 |
| 3386 | TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m$^3$ and saturated vapour concentration greater than or equal to 10 LC$</em>{50}$ | 6.1 | 4.3 | I | 274 | None | P602 | - | - | - | - | T20 | TP2 | TP13 | TP9 | F-G, S-N Category D. Clear of living quarters. A variety of toxic liquids which present a significant toxic inhalation hazard as well as being water-reactive. Toxic by inhalation, if swallowed or by skin contact. | 3386 |</p>
<table>
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<tr>
<th>UN No.</th>
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<th>Limited quantities</th>
<th>Instructions</th>
<th>Provisions</th>
<th>Provisions</th>
<th>IMO</th>
<th>UN</th>
<th>Provisions</th>
<th>EmS</th>
<th>Stowage and segregation</th>
<th>Properties and observations</th>
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<td>3387</td>
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<td>6.1 5.1</td>
<td>I 274</td>
<td>None</td>
<td>P601</td>
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<td>-</td>
<td>-</td>
<td>T22</td>
<td>TP2</td>
<td>TP13</td>
<td>TP9</td>
<td>F-A, S-Q</td>
<td>Category D. Clear of living quarters.</td>
<td>A variety of toxic liquids which present a significant toxic inhalation hazard as well as being an oxidizer. Highly toxic by inhalation. Toxic if swallowed or by skin contact.</td>
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<tr>
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<td>TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC₅₀</td>
<td>6.1 5.1</td>
<td>I 274</td>
<td>None</td>
<td>P602</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T20</td>
<td>TP2</td>
<td>TP13</td>
<td>TP9</td>
<td>F-A, S-Q</td>
<td>Category D. Clear of living quarters.</td>
<td>A variety of toxic liquids which present a significant toxic inhalation hazard as well as being an oxidizer. Toxic by inhalation, if swallowed or by skin contact.</td>
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<td>3389</td>
<td>TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC₅₀</td>
<td>6.1 8</td>
<td>I 274</td>
<td>None</td>
<td>P601</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T22</td>
<td>TP2</td>
<td>TP13</td>
<td>TP9</td>
<td>F-A, S-B</td>
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<td>6.1 8</td>
<td>I 274</td>
<td>None</td>
<td>P602</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T20</td>
<td>TP2</td>
<td>TP13</td>
<td>TP9</td>
<td>F-A, S-B</td>
<td>Category D. Clear of living quarters.</td>
<td>A variety of toxic liquids which present a significant toxic inhalation hazard as well as being corrosive. Toxic by inhalation, if swallowed or by skin contact.</td>
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<td>UN No.</td>
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<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc- tions</td>
<td>Provi- sions</td>
<td>Instruction</td>
<td>Provi- sions</td>
<td>IMO</td>
<td>UN</td>
<td>Provi- sions</td>
<td>EmS</td>
<td>Stowage and segregation</td>
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<td>4.2</td>
<td>●</td>
<td>I</td>
<td>274</td>
<td>None</td>
<td>P404</td>
<td>PP86</td>
<td>-</td>
<td>-</td>
<td>T21</td>
<td>TP7</td>
<td>TP33</td>
<td>F-G, S-M</td>
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<td>I</td>
<td>274</td>
<td>None</td>
<td>P400</td>
<td>PP86</td>
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<td>-</td>
<td>T21</td>
<td>TP2</td>
<td>TP7</td>
<td>F-G, S-M</td>
<td>Category D. Prohibited on any ship carrying class 1 with the exceptions listed in 7.2.7.1.3.2.</td>
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<td>4.3</td>
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<td>I</td>
<td>274</td>
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<td>P404</td>
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<td>-</td>
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<td>T21</td>
<td>TP7</td>
<td>TP33</td>
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<td>274</td>
<td>None</td>
<td>P400</td>
<td>PP86</td>
<td>-</td>
<td>-</td>
<td>T21</td>
<td>TP2</td>
<td>TP7</td>
<td>F-G, S-M</td>
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<td>4.3</td>
<td>●</td>
<td>I</td>
<td>274</td>
<td>None</td>
<td>P403</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>T9</td>
<td>TP7</td>
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<td>4.3</td>
<td>●</td>
<td>II</td>
<td>274</td>
<td>500 g</td>
<td>P410</td>
<td>-</td>
<td>IBC04</td>
<td>-</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
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<td>4.3</td>
<td>●</td>
<td>III</td>
<td>223 274</td>
<td>1 kg</td>
<td>P410</td>
<td>-</td>
<td>IBC06</td>
<td>-</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
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<td>4.1</td>
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<td>I</td>
<td>274</td>
<td>None</td>
<td>P403</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T9</td>
<td>TP7</td>
<td>TP33</td>
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### Packing Instructions

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<th>Class or division</th>
<th>Subsidiary risks</th>
<th>UN packing group</th>
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<th>EmS</th>
<th>Stowage and segregation</th>
<th>Properties and observations</th>
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<td>3396</td>
<td>ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE</td>
<td>4.3 4.1</td>
<td>II 274 500 g</td>
<td>P410 -</td>
<td>IBC04 -</td>
<td>- T3</td>
<td>TP33</td>
<td>F-G, S-N</td>
<td>Category E. Clear of living quarters. &quot;Separated from&quot; acids.</td>
<td>See entry above.</td>
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<td>III 223 1 kg</td>
<td>P410 -</td>
<td>IBC06 -</td>
<td>- T1</td>
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<td>F-G, S-N</td>
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<td>4.3 4.2</td>
<td>I 274</td>
<td>None</td>
<td>P403 -</td>
<td>- - -</td>
<td>T9</td>
<td>TP33</td>
<td>F-G, S-N</td>
<td>Category E. Clear of living quarters. &quot;Separated from&quot; acids.</td>
<td>Liable to self-heating or spontaneous combustion. Reacts violently with moisture, water and acids evolving flammable gas.</td>
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<td>4.3 4.2</td>
<td>II 274 500 g</td>
<td>P410 -</td>
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<td>I 274</td>
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<td>P402 -</td>
<td>- - -</td>
<td>T13</td>
<td>TP2 TP7</td>
<td>F-G, S-N</td>
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<td>Reacts violently with moisture, water and acids evolving flammable gas.</td>
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<td>IBC01 -</td>
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<td>IBC02 -</td>
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<td>TP2 TP7</td>
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<td>See entry above.</td>
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<td>4.3 3</td>
<td>I 274</td>
<td>None</td>
<td>P402 -</td>
<td>- - -</td>
<td>T13</td>
<td>TP2 TP7</td>
<td>F-G, S-N</td>
<td>Category E. Clear of living quarters. &quot;Separated from&quot; acids.</td>
<td>Flammable liquids. Reacts violently with moisture, water and acids evolving flammable gas.</td>
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<td>Provisions</td>
<td>IMO</td>
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<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
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<td>3</td>
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<td>223 274</td>
<td>1 l</td>
<td>P001</td>
<td>-</td>
<td>IBC02</td>
<td>-</td>
<td>-</td>
<td>T7</td>
<td>TP2 TP7</td>
<td>F-G, S-N</td>
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<td>See entry above.</td>
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<td>T9</td>
<td>TP7, TP33</td>
<td>F-G, S-N</td>
<td>Category D. &quot;Separated from&quot; acids. Silvery solid, consisting of metal alloyed with mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.</td>
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<td>Category D. &quot;Separated from&quot; acids. Consists of metal alloyed with mercury. Contains 2% to 10% alkaline earth metals and may contain up to 98% mercury. Reacts with moisture, water or acids, evolving hydrogen, a flammable gas. When heated, evolves toxic vapours.</td>
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<td>-</td>
<td>-</td>
<td>T9</td>
<td>TP7, TP33</td>
<td>F-G, S-L</td>
<td>Category D. &quot;Separated from&quot; acids. Soft, silvery metal. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.</td>
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<td>T9</td>
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<td>Category D. &quot;Separated from&quot; acids. Soft, silvery metal. Floats on water. Reacts violently with moisture, water or acids, evolving hydrogen, which may be ignited by the heat of the reaction. Highly reactive, sometimes with explosive effect.</td>
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<td>TP1</td>
<td>F-H, S-Q</td>
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<td>Category A. &quot;Separated from&quot; ammonium compounds, cyanides and sulphur. Colourless aqueous solutions. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by inhalation. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: 1. in contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, 2. in contact with ammonium compounds, powdered metals or oils, danger of explosion.</td>
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### Packing IBC Tank instructions

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<td>1I</td>
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<td>Category A. <em>Separated from</em> ammonium compounds, cyanides and sulphur. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Toxic if swallowed, by skin contact or by inhalation. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: 1. In contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, 2. In contact with ammonium compounds, powdered metals or oils, danger of explosion.</td>
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<td>TP1</td>
<td>F-H, S-Q</td>
<td>Category A. &quot;Separated from&quot; ammonium compounds, cyanides and sulphur. Reacts vigorously with sulphuric acid. Reacts fiercely with cyanides when heated. May form explosive mixtures with combustible material, powdered metals or ammonium compounds. These mixtures are liable to ignite. When involved in a fire, may cause an explosion. Leakage and subsequent evaporation of the water from the solutions may present increased dangers as follows: 1. in contact with combustible material (particularly fibrous material such as jute, cotton or sisal) or sulphur, danger of spontaneous combustion, 2. in contact with ammonium compounds, powdered metals or oils, danger of explosion.</td>
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<td>T4</td>
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<td>279</td>
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<td>TP2</td>
<td>F-A, S-A</td>
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<td>TP13 TP27</td>
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<td>223</td>
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<td>T7</td>
<td>T10</td>
<td>T11 TP14 TP27 TP28</td>
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<td>TP13 TP27</td>
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<td>TP1</td>
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<td>Colourless liquid. React with acids, evolving hydrogen fluoride, a toxic, irritating and corrosive gas, apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation.</td>
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<td>TP33</td>
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**Table Notes:**
- **Class or division:** Refers to the risk class or division of the substance.
- **Subsidiary risks:** Additional risk information.
- **UN packing group:** Identification of the packaging group.
- **Special provisions:** Additional specific handling or safety instructions.
- **Limited quantities:** Maximum quantities allowed.
- **Instructions:** Guidance on handling and storage.
- ** IMO:** Identification of the IMO code.
- **UN Provisions:** UN packing group provisions.
- **EmS:** Identification of the EmS (Emergency Services) code.
- **Stowage and segregation:** Requirements for stowage and segregation.
- **Properties and observations:** Detailed properties and observations related to the substance.

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**Annex 7, Page 129**
<table>
<thead>
<tr>
<th>UN No.</th>
<th>Name and description</th>
<th>Class or division</th>
<th>Subsidiary risks</th>
<th>UN packing group</th>
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<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category A</td>
<td>White crystalline solid. Melting point: 23°C. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.</td>
<td></td>
</tr>
<tr>
<td>3420</td>
<td>BORON TRIFLUORIDE PROPIONIC ACID COMPLEX, SOLID</td>
<td>8</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>1 kg</td>
<td>P002</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category A</td>
<td>White crystalline solid. Melting point: 28°C. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.</td>
<td></td>
</tr>
<tr>
<td>3421</td>
<td>POTASSIUM HYDROGEN DIFLUORIDE SOLUTION</td>
<td>8</td>
<td>6.1</td>
<td>II</td>
<td>-</td>
<td>1 l</td>
<td>P001</td>
<td>IBC02</td>
<td>-</td>
<td>T4</td>
<td>T7</td>
<td>TP2</td>
<td>F-A, S-B</td>
<td>Category A. Shade from radiant heat. Clear of living quarters. “Separated from” acids. Decomposed by heat or acids, evolving hydrogen fluoride, a toxic, extremely irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin or by inhalation. Causes burns to skin, eyes and mucous membranes.</td>
<td></td>
<td>3422</td>
<td></td>
</tr>
<tr>
<td>3422</td>
<td>POTASSIUM FLUORIDE SOLUTION</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>223</td>
<td>5 l</td>
<td>P001</td>
<td>IBC03</td>
<td>-</td>
<td>T4</td>
<td>T7</td>
<td>TP2</td>
<td>F-A, S-A</td>
<td>Category A. “Separated from” acids. Decomposed by acid, evolving hydrogen fluoride, an irritating and corrosive gas. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
<td>3423</td>
<td></td>
</tr>
<tr>
<td>3423</td>
<td>TETRAMETHYLAMMONIUM HYDROXIDE, SOLID</td>
<td>8</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>1 kg</td>
<td>P002</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category A. “Separated from” acids. Very soluble in water. Reacts violently with acids.</td>
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<tr>
<td>3424</td>
<td>AMMONIUM DINITRO-o-CRESOLATE SOLUTION</td>
<td>6.1</td>
<td>P</td>
<td>II</td>
<td>-</td>
<td>100 ml</td>
<td>P001</td>
<td>-</td>
<td>IBC02</td>
<td>-</td>
<td>T4</td>
<td>T7</td>
<td>TP2</td>
<td>F-A, S-A</td>
<td>Category B. &quot;Away from&quot; heavy metals, and their salts. &quot;Separated from&quot; classes 3 and 4.1. &quot;Separated longitudinally by an intervening complete compartment or hold from&quot; class 1. The commercial product is a 50% suspension in water. May support combustion and burn without oxygen. When involved in a fire, evolves toxic fumes. Forms extremely sensitive explosive compounds with lead, silver or other heavy metals and their compounds. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3424</td>
<td></td>
</tr>
<tr>
<td>3424</td>
<td>AMMONIUM DINITRO-o-CRESOLATE SOLUTION</td>
<td>6.1</td>
<td>P</td>
<td>III</td>
<td>223</td>
<td>5 l</td>
<td>P001</td>
<td>-</td>
<td>IBC02</td>
<td>-</td>
<td>T4</td>
<td>T7</td>
<td>TP2</td>
<td>F-A, S-A</td>
<td>Category A. &quot;Away from&quot; heavy metals, especially lead, and their salts. &quot;Separated from&quot; classes 3 and 4.1. &quot;Separated longitudinally by an intervening complete compartment or hold from&quot; class 1. See entry above.</td>
<td>3424</td>
<td></td>
</tr>
<tr>
<td>3425</td>
<td>BROMOACETIC ACID, SOLID</td>
<td>8</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>1 kg</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Colourless, deliquescent crystals. Melting point: 51°C. Corrosive to most metals. Harmful if swallowed. Causes burns to eyes and skin.</td>
<td>3425</td>
<td></td>
</tr>
<tr>
<td>3426</td>
<td>ACRYLAMIDE SOLUTION</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>223</td>
<td>5 l</td>
<td>P001 LP01</td>
<td>-</td>
<td>IBC03</td>
<td>-</td>
<td>-</td>
<td>T4</td>
<td>TP1</td>
<td>F-A, S-A</td>
<td>Category A. Keep as cool as reasonably practicable. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3426</td>
<td></td>
</tr>
<tr>
<td>3427</td>
<td>CHLOROBENZYL CHLORIDES, SOLID</td>
<td>6.1</td>
<td>P</td>
<td>III</td>
<td>-</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Colourless crystalline solid. Melting point: 29°C. Immiscible with or insoluble in water. Toxic if swallowed, by skin contact by or inhalation.</td>
<td>3427</td>
<td></td>
</tr>
<tr>
<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>IMO</td>
<td>UN Provi-</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
<td>UN No.</td>
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<tr>
<td>3428</td>
<td>3-CHLORO-4-METHYLPHENYL ISOCYANATE, SOLID</td>
<td>6.1 - II - 500 g</td>
<td>B2</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Clear of living quarters.</td>
<td>Colourless solid with a pungent odour. Melting point: 23°C. Insoluble in water. Reacts with water, evolving carbon dioxide. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3428</td>
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<tr>
<td>3429</td>
<td>CHLOROTOLUIDINES, LIQUID</td>
<td>6.1 - III - 5 l</td>
<td>IBC03</td>
<td>-</td>
<td>T4</td>
<td>T1</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Brown liquids. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3429</td>
<td></td>
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<tr>
<td>3430</td>
<td>XYLENOLS, LIQUID</td>
<td>6.1 - II - 100 ml</td>
<td>IBC02</td>
<td>-</td>
<td>T4</td>
<td>T2</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>The commercial products are liquids with a pungent tar odour. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3430</td>
<td></td>
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<tr>
<td>3431</td>
<td>NITROBENZOTRIFLUORIDES, SOLID</td>
<td>6.1</td>
<td>P II - 500 g</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A, Clear of living quarters.</td>
<td>Low melting point (31°C to 32°C) solids with an aromatic odour. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3431</td>
<td></td>
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<tr>
<td>3432</td>
<td>POLYCHLORINATED BIPHENYLS, SOLID</td>
<td>9 PP I - 305</td>
<td>P906</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A, &quot;Separated from&quot; foodstuffs.</td>
<td>Solid with perceptible odours. Insoluble in water. Harmful by ingestion or by skin contact. If spilled can be a persistent hazard to the environment. This entry covers articles, such as rags, cotton waste, clothing, sawdust, containing polychlorinated biphenyls where no free visible liquid is present.</td>
<td>3432</td>
<td></td>
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<tr>
<td>3433</td>
<td>LITHIUM ALKYLS, SOLID</td>
<td>4.2 4.3</td>
<td>None</td>
<td>P400</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T21</td>
<td>TP7</td>
<td>TP33</td>
<td>F-G, S-M</td>
<td>Category D</td>
<td>Ignite on exposure to air or carbon dioxide. Reacts violently in contact with water, acids, halogens, alcohols and amines, evolving flammable gas.</td>
<td>3433</td>
<td></td>
<td></td>
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<tr>
<td>3434</td>
<td>NITROCRESOLS, LIQUID</td>
<td>6.1 - III - 5 l</td>
<td>IBC03</td>
<td>-</td>
<td>T4</td>
<td>T1</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Slightly miscible in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3434</td>
<td></td>
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<tr>
<td>3435</td>
<td>HYDROQUINONE SOLUTION</td>
<td>6.1 - III</td>
<td>5 l</td>
<td>IBC03</td>
<td>-</td>
<td>T4</td>
<td>T1</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Miscible with water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3435</td>
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<tr>
<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>Subsidiary risks</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc- tions</td>
<td>Provisions</td>
<td>IMO</td>
<td>UN Provisions</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
<td>UN No.</td>
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<tr>
<td>3436</td>
<td>HEXAFLUOROCETONE HYDRATE, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08 B2 B4</td>
<td>- T3 TP33 F-A, S-A</td>
<td>Category B. Clear of living quarters.</td>
<td>This entry covers solid hydrate and hexafluoroacetone. Melting point of the pure substance: 23°C. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3436</td>
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<tr>
<td>3437</td>
<td>CHLOROCRESOLS, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08 B2 B4</td>
<td>- T3 TP33 F-A, S-A</td>
<td>Category A. Keep as cool as reasonably practicable.</td>
<td>White or pink crystals with a phenol-like odour. Melting point: 45°C to 68°C. Slightly soluble in water. Decomposes when heated, evolving extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3437</td>
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<tr>
<td>3438</td>
<td>alpha-METHYLBENZYL ALCOHOL, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>-</td>
<td>5 kg</td>
<td>LP02</td>
<td>-</td>
<td>IBC08 B3</td>
<td>- T1 TP33 F-A, S-A</td>
<td>Category A</td>
<td>Slightly soluble in water. Melting point: 21°C (pure substance). Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3438</td>
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<tr>
<td>3439</td>
<td>NITRILES, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>I</td>
<td>274</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07 B1</td>
<td>- T6 TP9 TP33</td>
<td>Category B. &quot;Separated from&quot; acids.</td>
<td>Solids, evolving toxic vapours. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3439</td>
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<tr>
<td>3439</td>
<td>NITRILES, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>II</td>
<td>274</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08 B2 B4</td>
<td>- T3 TP33 F-A, S-A</td>
<td>Category B. &quot;Separated from&quot; acids.</td>
<td>See entry above.</td>
<td>3439</td>
<td></td>
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<tr>
<td>3439</td>
<td>NITRILES, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>II</td>
<td>223 274 944</td>
<td>5 kg</td>
<td>LP02</td>
<td>-</td>
<td>IBC08 B3</td>
<td>- T1 TP33 F-A, S-A</td>
<td>Category A. &quot;Separated from&quot; acids.</td>
<td>See entry above.</td>
<td>3439</td>
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<tr>
<td>3440</td>
<td>SELENIUM COMPOUND, LIQUID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>I</td>
<td>-</td>
<td>None</td>
<td>P001</td>
<td>-</td>
<td>- - - - T14 TP2 TP9 TP27 F-A, S-A</td>
<td>Category B.</td>
<td>Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3440</td>
<td></td>
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<tr>
<td>3440</td>
<td>SELENIUM COMPOUND, LIQUID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>II</td>
<td>-</td>
<td>100 ml</td>
<td>P001</td>
<td>-</td>
<td>IBC02</td>
<td>- - T11 TP2 TP27 F-A, S-A</td>
<td>Category B.</td>
<td>See entry above.</td>
<td>3440</td>
<td></td>
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<tr>
<td>3440</td>
<td>SELENIUM COMPOUND, LIQUID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>III</td>
<td>223 944</td>
<td>5 l</td>
<td>P001</td>
<td>-</td>
<td>IBC03</td>
<td>- - T7 TP1 TP28 F-A, S-A</td>
<td>Category A.</td>
<td>See entry above.</td>
<td>3440</td>
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<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>Subsidiary risks</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruction</td>
<td>Provisions</td>
<td>IMO</td>
<td>UN Provisions</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
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<tr>
<td>3441</td>
<td>CHLORODINITROBENZENES, SOLID</td>
<td>6.1</td>
<td>P</td>
<td>II</td>
<td>279</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. &quot;Separated from&quot; class 3 Crystals. Melting point: 27°C to 53°C. May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3442</td>
<td>DICHLOROANILINES, SOLID</td>
<td>6.1</td>
<td>P</td>
<td>II</td>
<td>279</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. Clear of living quarters Solid with a penetrating odour. Liquid mixtures of various isomers of dichloroanilines, some of which in the pure state may be solid, with a melting point varying from 24°C to 72°C. Toxic if swallowed, by skin contact or by inhalation.</td>
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<tr>
<td>3443</td>
<td>DINITROBENZENES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. &quot;Separated from&quot; class 3 May explode if involved in a fire. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
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<tr>
<td>3444</td>
<td>NICOTINE HYDROCHLORIDE, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>43</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A Deliquescent crystals or solids or pastes. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
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</tr>
<tr>
<td>3445</td>
<td>NICOTINE SULPHATE, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A Solid or paste. Soluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3446</td>
<td>NITROTOLUENES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A Yellow solids. Melting point: para-NITROTOLUENE: 52°C to 54°C. Toxic if swallowed, by skin contact or by inhalation.</td>
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</tr>
<tr>
<td>3447</td>
<td>NITROXYLENES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>-</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A Yellow solids. Melting points: 4-NITRO-2-XYLENE: 25°C to 31°C; 5-NITRO-3-XYLENE: 72°C to 74°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
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<tr>
<td>3448</td>
<td>TEAR GAS SUBSTANCE, SOLID, N.O.S.</td>
<td>6.1</td>
<td>*</td>
<td>I</td>
<td>I</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters “Tear gas substance” is a generic term for substances which, in minute quantities dispersed in air, cause extreme eye irritation and profuse tears. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
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<tr>
<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>Subsidiary risks</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc- tions</td>
<td>Provisions</td>
<td>Provisions</td>
<td>IMO</td>
<td>UN</td>
<td>Provisions</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
<td>UN No.</td>
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<tr>
<td>3448</td>
<td>TEAR GAS SUBSTANCE, SOLID, N.O.S.</td>
<td>6.1</td>
<td></td>
<td>II</td>
<td>4</td>
<td>None</td>
<td>P002</td>
<td>PP31</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters</td>
<td>See entry above</td>
<td>3448</td>
</tr>
<tr>
<td>3449</td>
<td>BROMOBENZYL CYANIDES, SOLID</td>
<td>6.1</td>
<td></td>
<td>I</td>
<td>8</td>
<td>None</td>
<td>P002</td>
<td>PP31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T6</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category D. Keep as cool as reasonable practicable. Clear of living quarters. &quot;Separated from&quot; acids.</td>
<td>Volatile, yellow crystals evolving irritating vapours (&quot;Teal Gas&quot;). Melting point: meta-BROMOBENZYL CYANIDE 25°C. Highly toxic if swallowed, by skin contact or by inhalation.</td>
<td>3449</td>
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<tr>
<td>3450</td>
<td>DIPHENYLCHLOROARISENE, SOLID</td>
<td>6.1</td>
<td>PP</td>
<td>I</td>
<td></td>
<td>None</td>
<td>P002</td>
<td>PP31</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters.</td>
<td>When pure, volatile, colourless crystals evolving an irritating vapour (&quot;Teal Gas&quot;). Melting point: 41°C. Highly toxic if swallowed, by skin contact or by inhalation.</td>
<td>3450</td>
</tr>
<tr>
<td>3451</td>
<td>TOLUIDINES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>9</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>para-TOLUIDINE is solid in pure form, with a melting point of approximately 45°C. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3451</td>
</tr>
<tr>
<td>3452</td>
<td>XYLIDINES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>9</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>3,4-dimethylaniline is a solid, which has a melting point of 47°C. Toxic if swallowed, by skin contact or by dust inhalation.</td>
<td>3452</td>
</tr>
<tr>
<td>3453</td>
<td>PHOSPHORIC ACID, SOLID</td>
<td>8</td>
<td>-</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td></td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category A</td>
<td>Very deliquescent, crystalline solid. Melting point: 42°C. Soluble in water. Mildly corrosive to most metals.</td>
<td>3453</td>
<td></td>
</tr>
<tr>
<td>3454</td>
<td>DINITROTOLUENES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>II</td>
<td>9</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Yellow crystals or flakes, insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3454</td>
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<tr>
<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>Subsidiary risks</td>
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<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>IMO</td>
<td>UN Provi-</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
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</tr>
<tr>
<td>3455</td>
<td>CRESOLS, SOLID</td>
<td>6.1</td>
<td>8</td>
<td>III</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category B</td>
<td>Light yellow solids. Soluble in water. Melting points of CRESOLS: ortho-CRESOL: 30°C, para-CRESOL: 35°C. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3456</td>
<td>NITROSYLSPHERIC ACID, SOLID</td>
<td>8</td>
<td>-</td>
<td>III</td>
<td>1 kg</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-B</td>
<td>Category D</td>
<td>Crystalline solid. Oxidant which may cause fire with organic materials (such as wood, straw, etc.). When involved in a fire, evolves toxic gases. In presence of moisture, highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3457</td>
<td>CHLORONITROTOLUENES, SOLID</td>
<td>6.1</td>
<td>P</td>
<td>III</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Melting range 20°C to 40°C. Insoluble in water. Oxidizing substance which may explode or burn fiercely when in contact with organic materials. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3458</td>
<td>NITROANISoles, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Light reddish or amber crystals. Melting points: 38°C to 54°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
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</tr>
<tr>
<td>3459</td>
<td>NITROBROMOBENZENES, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Colourless to pale yellow crystals which may liquefy under transport conditions. Melting points: 1-BROMO-2-NITROBENZENE: 43°C, 1-BROMO-4-NITROBENZENE: 127°C. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
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</tr>
<tr>
<td>3460</td>
<td>N-ETHYLBenzyLTOluDInes, SOLID</td>
<td>6.1</td>
<td>-</td>
<td>III</td>
<td>5 kg</td>
<td>P002 LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>Solids which may liquefy under transport conditions. Strong odour. Insoluble in water. Toxic if swallowed, by skin contact or by inhalation.</td>
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<tr>
<td>UN No.</td>
<td>Name and description</td>
<td>Class or division</td>
<td>Subsidiary risks</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>Instruc-</td>
<td>Provi-</td>
<td>IMO</td>
<td>UN</td>
<td>Provi-</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
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<tr>
<td>3461</td>
<td>ALUMINIUM ALKYL HALIDES, SOLID</td>
<td>4.2</td>
<td>4.3 I</td>
<td>D</td>
<td>None</td>
<td>P404</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>T21</td>
<td>TP7</td>
<td>TP33</td>
<td>F-G, S-M</td>
<td>Category D. “Separated from” UN 2716. Ignite on exposure to air or carbon dioxide. Reacts</td>
<td></td>
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<tr>
<td>3462</td>
<td>TOXINS EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>D</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Toxins from plant, animal or bacterial sources which contain infectious</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3462</td>
<td>TOXINS EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.</td>
<td>6.1</td>
<td>II</td>
<td>D</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. See entry above</td>
<td></td>
<td></td>
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<tr>
<td>3462</td>
<td>TOXINS EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. See entry above</td>
<td></td>
<td></td>
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<tr>
<td>3464</td>
<td>ORGANOPHOSPHORUS COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>I</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Toxic if swallowed, by skin contact or by inhalation.</td>
<td></td>
<td></td>
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<tr>
<td>3464</td>
<td>ORGANOPHOSPHORUS COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>I</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. See entry above</td>
<td></td>
<td></td>
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<tr>
<td>3464</td>
<td>ORGANOPHOSPHORUS COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td>LP02</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. See entry above</td>
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<tr>
<td>3465</td>
<td>ORGANOARSENIC COMPOUND, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>I</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Toxic if swallowed, by skin contact or by inhalation.</td>
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<tr>
<td>3465</td>
<td>ORGANOARSENIC COMPOUND, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>I</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2 B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. See entry above</td>
<td></td>
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<tr>
<td>3465</td>
<td>ORGANOARSENIC COMPOUND, SOLID, N.O.S.</td>
<td>6.1</td>
<td>I</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td>LP02</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A. See entry above</td>
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<tr>
<td>UN No.</td>
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<td>Class or division</td>
<td>Subsidiary risks</td>
<td>UN packing group</td>
<td>Special provisions</td>
<td>Limited quantities</td>
<td>Instruc- tions</td>
<td>Provisions</td>
<td>Instruc- tions</td>
<td>Provisions</td>
<td>IMO</td>
<td>UN</td>
<td>Provisions</td>
<td>EmS</td>
<td>Stowage and segregation</td>
<td>Properties and observations</td>
<td>UN No.</td>
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<tr>
<td>3466</td>
<td>METAL CARBONYLS, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>I</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category D. Clear of living quarters</td>
<td>Insoluble in water. Toxic if swallowed, by skin contact or by dust inhalation</td>
<td>3466</td>
</tr>
<tr>
<td>3466</td>
<td>METAL CARBONYLS, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>II</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Clear of living quarters</td>
<td>See entry above.</td>
<td>3466</td>
</tr>
<tr>
<td>3466</td>
<td>METAL CARBONYLS, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td>LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B. Clear of living quarters</td>
<td>See entry above.</td>
<td>3466</td>
</tr>
<tr>
<td>3467</td>
<td>ORGANOMETALLIC COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>II</td>
<td>None</td>
<td>P002</td>
<td>-</td>
<td>IBC07</td>
<td>B1</td>
<td>-</td>
<td>T6</td>
<td>TP9</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B</td>
<td>Toxic if swallowed, by skin contact or by inhalation.</td>
<td>3467</td>
</tr>
<tr>
<td>3467</td>
<td>ORGANOMETALLIC COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>II</td>
<td>500 g</td>
<td>P002</td>
<td>-</td>
<td>IBC08</td>
<td>B2</td>
<td>B4</td>
<td>-</td>
<td>T3</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category B</td>
<td>See entry above.</td>
<td>3467</td>
</tr>
<tr>
<td>3467</td>
<td>ORGANOMETALLIC COMPOUND, TOXIC, SOLID, N.O.S.</td>
<td>6.1</td>
<td>3</td>
<td>II</td>
<td>5 kg</td>
<td>P002</td>
<td>LP02</td>
<td>-</td>
<td>IBC08</td>
<td>B3</td>
<td>-</td>
<td>T1</td>
<td>TP33</td>
<td>F-A, S-A</td>
<td>Category A</td>
<td>See entry above.</td>
<td>3467</td>
</tr>
<tr>
<td>3468</td>
<td>HYDROGEN IN A METAL HYDRIDE STORAGE SYSTEM</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>P099</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>F-D, S-U</td>
<td>Category D</td>
<td>Article containing flammable odourless gas.</td>
<td>3468</td>
<td></td>
</tr>
</tbody>
</table>
AMENDMENTS TO SPECIAL PROVISIONS

Chapter 3.3

SP29  Amend to read:

"The packages, including bales, are exempt from labelling provided that they are marked with the appropriate class (e.g. "class 4.2"). Packages, with the exception of bales, shall also display the Proper Shipping Name and the UN number of the substance that they contain in accordance with 5.2.1. In any case, the packages, including bales, are exempt from class marking provided that they are loaded in a cargo transport unit and that they contain goods to which only one UN number has been assigned. The cargo transport units in which the packages, including bales, are loaded shall display any relevant labels, placards and marks in accordance with chapter 5.3."

SP63  Amend as follows:

Replace .1 and .2 with the following:

".1 class 2.1 applies if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

.2 class 2.2 applies if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g."

Insert a new .3 as follows:

".3 Otherwise the product shall be classified as tested by the tests described in the United Nations Manual of Tests and Criteria, Part III, section 31. Extremely flammable and flammable aerosols shall be classified in class 2.1; non-flammable in class 2.2;"

The existing subparagraphs .3, .4 and .5 become .4, .5 and 6, respectively.

Add a new subparagraph .7 as follows:

".7 Except for consignments transported in limited quantities (see chapter 3.4), packages containing aerosols shall bear labels for the primary risk and for the subsidiary risk(s), if any."

Add at the end a new paragraph to read as follows:

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

**SP 66**

Amend to read:

"Mercurous chloride shall be transported under UN 3077 and cinnabar is not subject to the provisions of this Code.".

**SP 179**

Amend to read:

"This designation shall be used for substances and mixtures which are dangerous to the aquatic environment or which are Marine Pollutants that do not meet the classification criteria of any other class or another substance within class 9. This designation may also be used for wastes not otherwise subject to this Code but which are covered under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) and for substances designated to be environmentally hazardous substances by the competent authority of the country of origin, transit or destination which do not meet the criteria for an environmentally hazardous substance in accordance with this Code or for any other hazard class."

**SP 215**

Add the following text at the end:

"Homogeneous mixtures containing not more than 35 % by mass of azocarbonamide and at least 65 % of inert substance are not subject to this Code unless criteria of other classes are met."

**SP 219**

Amend to read as follows:

"Genetically modified micro-organisms and genetically modified organisms which meet the definition of an infectious substance and the criteria for inclusion in class 6.2 in accordance with chapter 2.6 shall be transported as UN 2814, UN 2900 or UN 3373, as appropriate."

**SP 243**

Amend to read as follows:

"Gasoline, motor spirit and petrol for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) shall be assigned to this entry regardless of variations in volatility."

**SP 247**

Amend the last sentence to read ".5 when carried on board ships, the containers shall be stowed in open cargo spaces or in enclosed cargo spaces complying with the requirements for class 3 flammable liquids with a flashpoint of 23°C c.c. or less in regulation II-2/19 of SOLAS 74, as amended."

**SP 281**

Delete last sentence.

**SP 294**

Amend packing instruction reference to read "P407".
SP 296 Replace the existing text with the following:

"These entries apply to life-saving appliances such as life rafts, personal flotation devices and self-inflating slides. UN 2990 applies to self-inflating appliances. UN 3072 applies to life-saving appliances that are not self-inflating. Life-saving appliances may contain:

.1 signal devices (class 1) which may include smoke and illumination signal flares packed in packagings that prevent them from being inadvertently activated;

.2 for UN 2990 only, cartridges, power device of division 1.4, compatibility group S, may be contained for purposes of the self-inflating mechanism and provided that the quantity of explosives per appliance does not exceed 3.2 g;

.3 class 2.2 compressed gases;

.4 electric storage batteries (class 8) and lithium batteries (class 9);

.5 first aid kits or repair kits containing small quantities of dangerous goods (e.g.: classes 3, 4.1, 5.2, 8 or 9 substances); or

.6 "Strike anywhere" matches packed in packagings that prevent them from being inadvertently activated."

SP 299 Amend to read:

"299 Consignments of:

(i) Cotton, dry having a density not less than 360 kg/m³
(ii) Flax, dry having a density not less than 400 kg/m³
(iii) Sisal, dry having a density not less than 620 kg/m³

according to ISO 8115:1986, are not subject to the provisions of this Code when transported in closed cargo transport units.".

SP 306 Delete.

SP 309 Amend last sentence to read as follows:
"Substances shall satisfactorily pass Test Series 8 of the United Nations Manual of Tests and Criteria, Part I, Section 18.".

SP 900 Add, in alphabetical order, "Ammonium hypochlorite".

SP 906 Delete.

SP 908 Amend to read: "This entry also covers, articles, such as transformers and condensers, containing free liquid polychlorinated biphenyls, polyhalogenated biphenyls or polyhalogenated terphenyls."
"A 'FUMIGATED UNIT' is a closed cargo transport unit loaded with cargoes under fumigation. The fumigant gases used are either poisonous or asphyxiant. The gases are usually evolved from solid or liquid preparations distributed within the unit. Fumigated units are subject to the following provisions:

1. Cargo transport units shall be fumigated and handled taking into account the provisions of the IMO publication *Recommendations on the Safe Use of Pesticides in Ships*, as amended.

2. Only cargo transport units that can be closed in such a way that the escape of gas is reduced to a minimum shall be used for the transport of fumigated cargo.

3. Class 9 placards shall not be affixed to a fumigated unit, except as required for other class 9 substances or articles packed therein (see 5.3.1.3).

4. Fumigated units shall be marked with a warning sign affixed to the access door(s) identifying the type and amount of fumigant used and the date and time of fumigation (see 5.3.2.5).

5. The transport document for a fumigated unit shall show the type and amount of fumigant used and the date and time of fumigation (see 5.4.4.2). In addition, instructions for disposal for any residual fumigant, including fumigation devices if used, shall be provided.

6. A closed cargo transport unit that has been fumigated is not subject to the provisions of this Code if it has been completely ventilated either by opening the doors of the unit or by mechanical ventilation after fumigation to ensure that no harmful concentration of gas remains. When completely ventilated, the fumigation warning sign(s) shall be removed. (See also 7.4.3).

7. When fumigated units are stowed under deck, equipment for detecting fumigant gas(es) shall be carried on the ship with instructions for their use.

8. Fumigants shall not be applied to the contents of a cargo transport unit once it has been loaded aboard the ship."

SP 913 Delete.

SP 933 Delete.

SP 936 Delete.

SP 938 Add as the first sentence the following: "Propionic acid having a flashpoint at or below 61°C c.c. shall be transported under UN 2924."
Delete.

Add the following new special provisions:

"311 Substances shall not be transported under this entry unless approved by the competent authority on the basis of the results of appropriate tests according to Part I of the United Nations Manual of Tests and Criteria. Packaging shall ensure that the percentage of diluent does not fall below that stated in the competent authority approval at any time during transport.

313 Substances and mixtures meeting the criteria for class 8 shall be labelled with a "CORROSIVE" subsidiary risk label.

314 a) These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds).

b) During the course of transport, these substances shall be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

315 This entry shall not be used for class 6.1 substances which meet the inhalation toxicity criteria for packing group I described in 2.6.2.2.4.3.

316 This entry applies only to calcium hypochlorite, dry or hydrated, when transported in non friable tablet form.

317 "Fissile-excepted" applies only to those packages complying with 6.4.11.2.

318 For the purposes of documentation, the Proper Shipping Name shall be supplemented with the technical name (see 3.1.2.8). Technical names need not be shown on the package. When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN 2814 or UN 2900, the words "suspected category A infectious substance" shall be shown, in parentheses, following the Proper Shipping Name on the transport document, but not on the outer packagings.

319 This entry applies to human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, and body parts being transported for purposes such as research, diagnosis, investigation, disease treatment or prevention. Substances packed and packages marked in accordance with packing instruction P650 are not subject to any other provisions of this Code.

320 Irrespective of 2.0.2.2, this entry or the appropriate generic entry may be used.
These storage systems shall always be considered as containing hydrogen.

Consignments of life-saving appliances, containing no dangerous goods other than carbon dioxide cylinders with a capacity not exceeding 100 cm³, provided that they are overpacked in wooden or fibreboard boxes with a maximum gross mass of 40 kg, are not subject to the provisions of this Code.

Lithium cells and batteries manufactured before 1 January 2003 that have not been tested in accordance with the requirements in chapter 38.3 of the United Nations Manual of Tests and Criteria, as well as articles which contain such lithium cells or batteries, may be transported until 31 December 2013 if all applicable provisions of this Code are met.

This entry covers articles, such as rags, cotton waste, clothing, sawdust, containing polychlorinated biphenyls, polyhalogenated biphenyls or polyhalogenated terphenyls where no free visible liquid is present.".

Chapter 3.4

3.4.7 Delete "Proper Shipping Name and".

Chapter 3.5

Delete chapter 3.5.

APPENDIX A

Class 3 table

3256 Amend "60.5" to read "61" in entry.

3379 Add entry as "3 DESENSITIZED EXPLOSIVE, LIQUID, N.O.S.".

Class 4.1 table

3380 Add entry as "4.1 DESENSITIZED EXPLOSIVE, SOLID, N.O.S.".

Class 4.2 table

Delete entries 2003, 3049, 3050 and 3203.
Add entries 3391, 3392, 3393, 3394 and 3400 as in DGL.
Class 4.3 table

Delete entries 3207 and 3372.
Add entries 3395, 3396, 3397, 3398, 3399, 3401 and 3402, as in DGL.
Add "LIQUID" in entries 1389 and 1392.

Class 6.1 table

Add 10 entries 3381 to 3390, as in DGL under 'General entries'.
Add 8 entries 3439, 3440, 3448, 3462, 3464, 3465, 3466 and 3467, as in DGL.
Add "LIQUID" in entries 1693, 3172, 3276, 3278, 3280, 3281 and 3282.
Add "SOLID" in entry 3283.
Amend entry 2993 at end to read "… FLAMMABLE flashpoint between 23°C and 61°C".

Class 6.2 table

Amend the following entry to read: "6.2 3373 DIAGNOSTIC or CLINICAL SPECIMENS".

APPENDIX B

For "AIR-BAG" read "AIR BAG" (3 times).

INDEX

Amend the index in accordance with the relevant amendments adopted.

The EmS Guide

Delete the UN numbers before each EmS Schedule.
Index (to the EmS Guide)

Add the following:

| 3377 | F-A | S-Q | 3407 | F-H | S-Q | 3438 | F-A | S-A |
| 3378 | F-A | S-Q | 3408 | F-H | S-Q | 3439 | F-A | S-A |
| 3379 | F-E | S-Y | 3409 | F-A | S-A | 3440 | F-A | S-A |
| 3380 | F-B | S-J | 3410 | F-A | S-A | 3441 | F-A | S-A |
| 3381 | F-A | S-A | 3411 | F-A | S-A | 3442 | F-A | S-A |
| 3382 | F-A | S-A | 3413 | F-A | S-A | 3443 | F-A | S-A |
| 3383 | F-E | S-D | 3414 | F-A | S-A | 3444 | F-A | S-A |
| 3384 | F-E | S-D | 3415 | F-A | S-A | 3445 | F-A | S-A |
| 3385 | F-G | S-N | 3416 | F-A | S-A | 3446 | F-A | S-A |
| 3386 | F-G | S-N | 3417 | F-A | S-G | 3447 | F-A | S-A |
| 3387 | F-A | S-Q | 3418 | F-A | S-A | 3448 | F-A | S-A |
| 3388 | F-A | S-Q | 3419 | F-A | S-B | 3449 | F-A | S-A |
| 3389 | F-A | S-B | 3420 | F-A | S-B | 3450 | F-A | S-A |
| 3390 | F-A | S-B | 3421 | F-A | S-B | 3451 | F-A | S-A |
| 3391 | F-G | S-M | 3422 | F-A | S-B | 3452 | F-A | S-A |
| 3392 | F-G | S-M | 3423 | F-A | S-B | 3453 | F-A | S-B |
| 3393 | F-G | S-M | 3424 | F-A | S-A | 3454 | F-A | S-A |
| 3394 | F-G | S-M | 3425 | F-A | S-B | 3455 | F-A | S-B |
| 3395 | F-G | S-N | 3426 | F-A | S-A | 3456 | F-A | S-B |
| 3396 | F-G | S-N | 3427 | F-A | S-A | 3457 | F-A | S-A |
| 3397 | F-G | S-N | 3428 | F-A | S-A | 3458 | F-A | S-A |
| 3398 | F-G | S-N | 3429 | F-A | S-A | 3459 | F-A | S-A |
| 3399 | F-G | S-N | 3430 | F-A | S-A | 3460 | F-A | S-A |
| 3400 | F-A | S-J | 3431 | F-A | S-A | 3461 | F-G | S-M |
| 3401 | F-G | S-N | 3432 | F-A | S-A | 3462 | F-A | S-A |
| 3402 | F-G | S-N | 3433 | F-G | S-M | 3464 | F-A | S-A |
| 3403 | F-G | S-L | 3434 | F-A | S-A | 3465 | F-A | S-A |
| 3404 | F-G | S-L | 3435 | F-A | S-A | 3466 | F-A | S-A |
| 3405 | F-H | S-Q | 3436 | F-A | S-A | 3467 | F-A | S-A |
| 3406 | F-H | S-Q | 3437 | F-A | S-A | 3468 | F-D | S-U |
Amend the following:

Underline the "F-X" code for:

UN 0018 UN 0019 UN 0020 UN 0021 UN 0248 UN 0249 UN 0301 UN 1001 UN 1003 UN 1014 UN 1038 UN 1070 UN 1072 UN 1073 UN 1075 UN 1162 UN 1250 UN 1298 UN 1381 UN 1415 UN 1418 UN 1717 UN 1965 UN 1966 UN 2201 UN 2447 UN 2977 UN 2978 UN 2985 UN 3138 UN 3156 UN 3157 UN 3160 UN 3268 UN 3309 UN 3312 UN 3332 UN 3333 UN 3374.

Underline the “S-X” code for:

UN 1001 UN 1136 UN 1139 UN 1263 UN 1295 UN 1614 UN 1993 UN 2029 UN 2210 UN 2749 UN 2802 UN 2809 UN 2968 UN 2977 UN 3257 UN 3258 UN 3316 UN 3324 UN 3325 UN 3326 UN 3327 UN 3328 UN 3329 UN 3330 UN 3331 UN 3359 UN 3363 UN 3374.

Delete the following UN numbers from the index: UN 2003, 2068, 2069, 2070, 3049, 3050, 3203, 3207, 3353 and 3372.

Amend the index as follows:

For UN 1278, replace “S-C” with “S-D”.
For UN 2921, replace “S-C” with “S-G”.
For UN 3205 and UN 3206, replace “S-Q” with “S-J”.

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ANNEX 8

RESOLUTION MSC.158(78)
(adopted on 20 May 2004)

ADOPTION OF AMENDMENTS TO THE TECHNICAL PROVISIONS FOR MEANS OF ACCESS FOR INSPECTIONS

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING the Technical provisions for means of access for inspections (hereinafter referred to as “the Technical provisions”), adopted by resolution MSC.133(76), which are mandatory under SOLAS regulation II-1/3-6 on Access to and within spaces in the cargo area of oil tankers and bulk carriers adopted by resolution MSC.134(76),

ACKNOWLEDGING concerns expressed with regard to perceived problems which might be encountered when implementing the requirements of the Technical provisions,

NOTING ALSO the amendments to the aforementioned SOLAS regulation II-1/3-6 adopted by resolution MSC.151(78) to address the above concerns,

HAVING CONSIDERED, at its seventy-eighth session, amendments to the Technical provisions, prepared and circulated in accordance with article VIII and regulation II-1/3-6 of the 1974 SOLAS Convention,

1. ADOPTS amendments to the Technical provisions for means of access for inspections, the text of which is set out in the Annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2005, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world’s merchant fleet, have notified their objections to the amendments;

3. INVITES SOLAS Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2006 upon their acceptance in accordance with paragraph 2 above;

4. REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the Technical provisions contained in the Annex to all Contracting Governments to the Convention;

5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and the Annex to all Members of the Organization, which are not Contracting Governments to the Convention.
AMENDMENTS TO THE TECHNICAL PROVISIONS FOR MEANS OF ACCESS FOR INSPECTIONS (RESOLUTION MSC.133(76))

1 The existing text of the Technical provisions for means of access for inspections is replaced with the following:

"1 Preamble

1.1 It has long been recognized that the only way of ensuring that the condition of a ship’s structure is maintained to conform with the applicable requirements is for all its components to be surveyed on a regular basis throughout their operational life. This will ensure that they are free from damage such as cracks, buckling or deformation due to corrosion, overloading, or contact damage and that thickness diminution is within established limits. The provision of suitable means of access to the hull structure for the purpose of carrying out overall and close-up surveys and inspections is essential and such means should be considered and provided for at the ship design stage.

1.2 Ships should be designed and built with due consideration as to how they will be surveyed by flag State inspectors and classification society surveyors during their in-service life and how the crew will be able to monitor the condition of the ship. Without adequate access, the structural condition of the ship can deteriorate undetected and major structural failure can arise. A comprehensive approach to design and maintenance is required to cover the whole projected life of the ship.

1.3 In order to address this issue, the Organization has developed these Technical provisions for means of access for inspections (hereinafter called the “Technical provisions”), intended to facilitate close-up inspections and thickness measurements of the ship’s structure referred to in SOLAS regulation II-1/3-6 on Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers. The Technical provisions do not apply to the cargo tanks of combined chemical/oil tankers complying with the provisions of the IBC Code.

1.4 Permanent means of access which are designed to be integral parts of the structure itself are preferred and Administrations may allow reasonable deviations to facilitate such designs.

2 Definitions

For the purpose of these Technical provisions, the following definitions apply in addition to those provided in the 1974 SOLAS Convention, as amended, and in resolution A.744(18), as amended:
1. *Rung* means the step of a vertical ladder or step on the vertical surface.

2. *Tread* means the step of an inclined ladder or step for the vertical access opening.

3. *Flight of an inclined ladder* means the actual stringer length of an inclined ladder. For vertical ladders, it is the distance between the platforms.

4. *Stringer* means:
   1. the frame of a ladder; or
   2. the stiffened horizontal plating structure fitted on the side shell, transverse bulkheads and/or longitudinal bulkheads in the space. For the purpose of ballast tanks of less than 5 m width forming double side spaces, the horizontal plating structure is credited as a stringer and a longitudinal permanent means of access, if it provides a continuous passage of 600 mm or more in width past frames or stiffeners on the side shell or longitudinal bulkhead. Openings in stringer plating utilized as permanent means of access shall be arranged with guard rails or grid covers to provide safe passage on the stringer or safe access to each transverse web.

5. *Vertical ladder* means a ladder of which the inclined angle is 70º and over up to 90º. A vertical ladder shall not be skewed by more than 2º.

6. *Overhead obstructions* mean the deck or stringer structure including stiffeners above the means of access.

7. *Distance below deck head* means the distance below the plating.

8. *Cross deck* means the transverse area of the main deck which is located inboard and between hatch coamings.

3 Technical provisions

3.1 Structural members subject to the close-up inspections and thickness measurements of the ship’s structure referred to in SOLAS regulation II-1/3-6, except those in double bottom spaces, shall be provided with a permanent means of access to the extent as specified in table 1 and table 2, as applicable. For oil tankers and wing ballast tanks of ore carriers, approved alternative methods may be used in combination with the fitted permanent means of access, provided that the structure allows for its safe and effective use.

3.2 Permanent means of access should as far as possible be integral to the structure of the ships, thus ensuring that they are robust and at the same time contributing to the overall strength of the structure of the ship.

3.3 Elevated passageways forming sections of a permanent means of access, where fitted, shall have a minimum clear width of 600 mm, except for going around vertical
webs where the minimum clear width may be reduced to 450 mm, and have guard rails over the open side of their entire length. Sloping structures providing part of the access shall be of a non-skid construction. Guard rails shall be 1,000 mm in height and consist of a rail and an intermediate bar 500 mm in height and of substantial construction. Stanchions shall be not more than 3 m apart.

3.4 Access to permanent means of access and vertical openings from the ship’s bottom shall be provided by means of easily accessible passageways, ladders or treads. Treads shall be provided with lateral support for the foot. Where the rungs of ladders are fitted against a vertical surface, the distance from the centre of the rungs to the surface shall be at least 150 mm. Where vertical manholes are fitted higher than 600 mm above the walking level, access shall be facilitated by means of treads and hand grips with platform landings on both sides.

3.5 Permanent inclined ladders shall be inclined at an angle of less than 70°. There shall be no obstructions within 750 mm of the face of the inclined ladder, except that in way of an opening this clearance may be reduced to 600 mm. Resting platforms of adequate dimensions shall be provided, normally at a maximum of 6 m vertical height. Ladders and handrails shall be constructed of steel or equivalent material of adequate strength and stiffness and securely attached to the structure by stays. The method of support and length of stay shall be such that vibration is reduced to a practical minimum. In cargo holds, ladders shall be designed and arranged so that cargo handling difficulties are not increased and the risk of damage from cargo handling gear is minimized.

3.6 The width of inclined ladders between stringers shall not be less than 400 mm. The treads shall be equally spaced at a distance apart, measured vertically, of between 200 mm and 300 mm. When steel is used, the treads shall be formed of two square bars of not less than 22 mm by 22 mm in section, fitted to form a horizontal step with the edges pointing upward. The treads shall be carried through the side stringers and attached thereto by double continuous welding. All inclined ladders shall be provided with handrails of substantial construction on both sides, fitted at a convenient distance above the treads.

3.7 For vertical ladders or spiral ladders, the width and construction should be in accordance with international or national standards accepted by the Administration.

3.8 No free-standing portable ladder shall be more than 5 m long.

3.9 Alternative means of access include, but are not limited to, such devices as:

1. hydraulic arm fitted with a stable base;
2. wire lift platform;
3. staging;
4. rafting;
5. robot arm or remotely operated vehicle (ROV);
.6 portable ladders more than 5 m long shall only be utilized if fitted with a mechanical device to secure the upper end of the ladder;

.7 other means of access, approved by and acceptable to the Administration.

Means for safe operation and rigging of such equipment to and from and within the spaces shall be clearly described in the Ship Structure Access Manual.

3.10 For access through horizontal openings, hatches or manholes, the minimum clear opening shall not be less than 600 mm x 600 mm. When access to a cargo hold is arranged through the cargo hatch, the top of the ladder shall be placed as close as possible to the hatch coaming. Access hatch coamings having a height greater than 900 mm shall also have steps on the outside in conjunction with the ladder.

3.11 For access through vertical openings, or manholes, in swash bulkheads, floors, girders and web frames providing passage through the length and breadth of the space, the minimum opening shall be not less than 600 mm x 800 mm at a height of not more than 600 mm from the passage unless gratings or other foot holds are provided.

3.12 For oil tankers of less than 5,000 tonnes deadweight, the Administration may approve, in special circumstances, smaller dimensions for the openings referred to in paragraphs 3.10 and 3.11, if the ability to traverse such openings or to remove an injured person can be proved to the satisfaction of the Administration.

3.13 For bulk carriers, access ladders to cargo holds and other spaces shall be:

.1 Where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is not more than 6 m, either a vertical ladder or an inclined ladder.

.2 Where the vertical distance between the upper surface of adjacent decks or between deck and the bottom of the cargo space is more than 6 m, an inclined ladder or series of inclined ladders at one end of the cargo hold, except the uppermost 2.5 m of a cargo space measured clear of overhead obstructions and the lowest 6 m may have vertical ladders, provided that the vertical extent of the inclined ladder or ladders connecting the vertical ladders is not less than 2.5 m.

The second means of access at the other end of the cargo hold may be formed of a series of staggered vertical ladders, which should comprise of one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder. The uppermost entrance section of the ladder directly exposed to a cargo hold should be vertical for a distance of 2.5 m measured clear of overhead obstructions and connected to a ladder-linking platform.

.3 A vertical ladder may be used as a means of access to topside tanks, where the vertical distance is 6 m or less between the deck and the longitudinal means of access in the tank or the stringer or the bottom of the space.
immediately below the entrance. The uppermost entrance section from deck of the vertical ladder of the tank should be vertical for a distance of 2.5 m measured clear of overhead obstructions and comprise a ladder linking platform, unless landing on the longitudinal means of access, the stringer or the bottom within the vertical distance, displaced to one side of a vertical ladder.

.4 Unless allowed in .3 above, an inclined ladder or combination of ladders should be used for access to a tank or a space where the vertical distance is greater than 6 m between the deck and a stringer immediately below the entrance, between stringers, or between the deck or a stringer and the bottom of the space immediately below the entrance.

.5 In case of .4 above, the uppermost entrance section from deck of the ladder should be vertical for a distance of 2.5 m clear of overhead obstructions and connected to a landing platform and continued with an inclined ladder. The flights of inclined ladders should not be more than 9 m in actual length and the vertical height should not normally be more than 6 m. The lowermost section of the ladders may be vertical for a distance of not less than 2.5 m.

.6 In double-side skin spaces of less than 2.5 m width, the access to the space may be by means of vertical ladders that comprise of one or more ladder linking platforms spaced not more than 6 m apart vertically and displaced to one side of the ladder. Adjacent sections of ladder should be laterally offset from each other by at least the width of the ladder.

.7 A spiral ladder is considered acceptable as an alternative for inclined ladders. In this regard, the uppermost 2.5 m can continue to be comprised of the spiral ladder and need not change over to vertical ladders.

3.14 The uppermost entrance section from deck of the vertical ladder providing access to a tank should be vertical for a distance of 2.5 m measured clear of overhead obstructions and comprise a ladder linking platform, displaced to one side of a vertical ladder. The vertical ladder can be between 1.6 m and 3 m below deck structure if it lands on a longitudinal or athwartship permanent means of access fitted within that range.
### Table 1 - Means of access for ballast and cargo tanks of oil tankers*

<table>
<thead>
<tr>
<th>1</th>
<th>Water ballast tanks, except those specified in the right column, and cargo oil tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>For tanks of which the height is 6 m and over containing internal structures, permanent means of access shall be provided in accordance with .1 to .6:</td>
</tr>
<tr>
<td>.1</td>
<td>Continuous athwartship permanent access arranged at each transverse bulkhead on the stiffened surface, at a minimum of 1.6 m to a maximum of 3 m below the deck head;</td>
</tr>
<tr>
<td>.2</td>
<td>At least one continuous longitudinal permanent means of access at each side of the tank. One of these accesses shall be at a minimum of 1.6 m to a maximum of 6 m below the deck head and the other shall be at a minimum of 1.6 m to a maximum of 3 m below the deck head;</td>
</tr>
<tr>
<td>.3</td>
<td>Access between the arrangements specified in .1 and .2 and from the main deck to either .1 or .2;</td>
</tr>
<tr>
<td>.4</td>
<td>Continuous longitudinal permanent means of access which are integrated in the structural member on the stiffened surface of a longitudinal bulkhead, in alignment, where possible, with horizontal girders of transverse bulkheads are to be provided for access to the transverse webs unless permanent fittings are installed at the uppermost platform for use of alternative means, as defined in paragraph 3.9 of the Technical provisions, for inspection at intermediate heights;</td>
</tr>
<tr>
<td>.5</td>
<td>For ships having cross-ties which are 6 m or more above tank bottom, a transverse permanent means of access on the cross-ties providing inspection of the tie flaring brackets at both sides of the tank, with access from one of the longitudinal permanent means of access in .4; and</td>
</tr>
<tr>
<td>.6</td>
<td>Alternative means as defined in paragraph 3.9 of the Technical provisions may be provided for small ships as an alternative to .4 for cargo oil tanks of which the height is less than 17 m.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Water ballast wing tanks of less than 5 m width forming double side spaces and their bilge hopper sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>For double side spaces above the upper knuckle point of the bilge hopper sections, permanent means of access are to be provided in accordance with .1 to .3:</td>
</tr>
<tr>
<td>.1</td>
<td>Where the vertical distance between horizontal uppermost stringer and deck head is 6 m or more, one continuous longitudinal permanent means of access shall be provided for the full length of the tank with a means to allow passing through transverse webs installed at a minimum of 1.6 m to a maximum of 3 m below the deck head with a vertical access ladder at each end of the tank;</td>
</tr>
<tr>
<td>.2</td>
<td>Continuous longitudinal permanent means of access, which are integrated in the structure, at a vertical distance not exceeding 6 m apart; and</td>
</tr>
<tr>
<td>.3</td>
<td>Plated stringers shall, as far as possible, be in alignment with horizontal girders of transverse bulkheads.</td>
</tr>
</tbody>
</table>
1.2 For tanks of which the height is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means may be utilized in lieu of the permanent means of access.

2.2 For bilge hopper sections of which the vertical distance from the tank bottom to the upper knuckle point is 6 m and over, one longitudinal permanent means of access shall be provided for the full length of the tank. It shall be accessible by vertical permanent means of access at each end of the tank.

2.2.1 The longitudinal continuous permanent means of access may be installed at a minimum 1.6 m to maximum 3 m from the top of the bilge hopper section. In this case, a platform extending the longitudinal continuous permanent means of access in way of the webframe may be used to access the identified structural critical areas.

2.2.2 Alternatively, the continuous longitudinal permanent means of access may be installed at a minimum of 1.2 m below the top of the clear opening of the web ring allowing a use of portable means of access to reach identified structural critical areas.

<table>
<thead>
<tr>
<th>Fore peak tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3 For fore peak tanks with a depth of 6 m or more at the centre line of the collision bulkhead, a suitable means of access shall be provided for access to critical areas such as the underdeck structure, stringers, collision bulkhead and side shell structure.</td>
</tr>
<tr>
<td>1.3.1 Stringers of less than 6 m in vertical distance from the deck head or a stringer immediately above are considered to provide suitable access in combination with portable means of access.</td>
</tr>
<tr>
<td>1.3.2 In case the vertical distance between the deck head and stringers, stringers or the lowest stringer and the tank bottom is 6 m or more, alternative means of access as defined in paragraph 3.9 of the Technical provisions shall be provided.</td>
</tr>
</tbody>
</table>

2.3 Where the vertical distance referred to in 2.2 is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means of access may be utilised in lieu of the permanent means of access. To facilitate the operation of the alternative means of access, in-line openings in horizontal stringers shall be provided. The openings shall be of an adequate diameter and shall have suitable protective railings.
Table 2 - Means of access for bulk carriers

<table>
<thead>
<tr>
<th>1 Cargo holds</th>
<th>2 Ballast tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access to underdeck structure</strong></td>
<td><strong>Top side tanks</strong></td>
</tr>
<tr>
<td>1.1 Permanent means of access shall be fitted to provide access to the overhead structure at both sides of the cross deck and in the vicinity of the centreline. Each means of access shall be accessible from the cargo hold access or directly from the main deck and installed at a minimum of 1.6 m to a maximum of 3 m below the deck.</td>
<td>2.1 For each topside tank of which the height is 6 m and over, one longitudinal continuous permanent means of access shall be provided along the side shell webs and installed at a minimum of 1.6 m to a maximum of 3 m below deck with a vertical access ladder in the vicinity of each access to that tank.</td>
</tr>
<tr>
<td>1.2 An athwartship permanent means of access fitted on the transverse bulkhead at a minimum 1.6 m to a maximum 3 m below the cross-deck head is accepted as equivalent to 1.1.</td>
<td>2.2 If no access holes are provided through the transverse webs within 600 mm of the tank base and the web frame rings have a web height greater than 1 m in way of side shell and sloping plating, then step rungs/grab rails shall be provided to allow safe access over each transverse web frame ring.</td>
</tr>
<tr>
<td>1.3 Access to the permanent means of access to overhead structure of the cross deck may also be via the upper stool.</td>
<td>2.3 Three permanent means of access, fitted at the end bay and middle bay of each tank, shall be provided spanning from tank base up to the intersection of the sloping plate with the hatch side girder. The existing longitudinal structure, if fitted on the sloping plate in the space may be used as part of this means of access.</td>
</tr>
<tr>
<td>1.4 Ships having transverse bulkheads with full upper stools with access from the main deck which allows monitoring of all framing and plates from inside do not require permanent means of access of the cross deck.</td>
<td>2.4 For topside tanks of which the height is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means may be utilized in lieu of the permanent means of access.</td>
</tr>
<tr>
<td>1.5 Alternatively, movable means of access may be utilized for access to the overhead structure of the cross deck if its vertical distance is 17 m or less above the tank top.</td>
<td><strong>Access to vertical structures</strong></td>
</tr>
<tr>
<td><strong>Bilge hopper tanks</strong></td>
<td>2.5 For each bilge hopper tank of which the height is 6 m and over, one longitudinal continuous permanent means of access shall be provided along the side shell webs and installed at a minimum of 1.2 m below the top of the clear opening of the web ring with a vertical access ladder in the vicinity of each access to the tank.</td>
</tr>
<tr>
<td>2.5.1 An access ladder between the longitudinal continuous permanent means of access and the bottom of the space shall be provided at each end of the tank.</td>
<td>2.5.2 Alternatively, the longitudinal continuous permanent means of access can be located through the upper web plating above the clear opening of the web ring, at a minimum of 1.6 m below the deck head, when this arrangement facilitates more suitable inspection of identified structurally critical areas. An enlarged longitudinal frame can be used for the purpose of the walkway.</td>
</tr>
<tr>
<td>2.5.2 In addition, portable or movable means of access shall be utilized for access to the remaining hold frames up to their upper brackets and transverse bulkheads.</td>
<td>2.5.3 In addition, portable or movable means of access shall be utilized for access to the remaining hold frames up to their upper brackets and transverse bulkheads.</td>
</tr>
</tbody>
</table>
1.8 Portable or movable means of access may be utilized for access to hold frames up to their upper bracket in place of the permanent means required in 1.6. These means of access shall be carried on board the ship and readily available for use.

1.9 The width of vertical ladders for access to hold frames shall be at least 300 mm, measured between stringers.

1.10 A single vertical ladder over 6 m in length is acceptable for the inspection of the hold side frames in a single skin construction.

1.11 For double-side skin construction no vertical ladders for the inspection of the cargo hold surfaces are required. Inspection of this structure should be provided from within the double hull space.

2.5.3 For double-side skin bulk carriers, the longitudinal continuous permanent means of access may be installed within 6 m from the knuckle point of the bilge, if used in combination with alternative methods to gain access to the knuckle point.

2.6 If no access holes are provided through the transverse ring webs within 600 mm of the tank base and the web frame rings have a web height greater than 1 m in way of side shell and sloping plating, then step rungs/grab rails shall be provided to allow safe access over each transverse web frame ring.

2.7 For bilge hopper tanks of which the height is less than 6 m, alternative means as defined in paragraph 3.9 of the Technical provisions or portable means may be utilized in lieu of the permanent means of access. Such means of access shall be demonstrated that they can be deployed and made readily available in the areas where needed.

### Double-skin side tanks

2.8 Permanent means of access shall be provided in accordance with the applicable sections of table 1.

### Fore peak tanks

2.9 For fore peak tanks with a depth of 6 m or more at the centreline of the collision bulkhead, a suitable means of access shall be provided for access to critical areas such as the underdeck structure, stringers, collision bulkhead and side shell structure.

2.9.1 Stringers of less than 6 m in vertical distance from the deck head or a stringer immediately above are considered to provide suitable access in combination with portable means of access.

2.9.2 In case the vertical distance between the deck head and stringers, stringers or the lowest stringer and the tank bottom is 6 m or more, alternative means of access as defined in paragraph 3.9 of the Technical provisions shall be provided.

* For ore carriers, permanent means of access shall be provided in accordance with the applicable sections of table 1 and table 2.*
ANNEX 9

DRAFT AMENDMENTS TO CHAPTER XII OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER XII

ADDITIONAL SAFETY MEASURES FOR BULK CARRIERS

1 The existing text of chapter XII is replaced by the following:

“Regulation 1

Definitions

For the purpose of this chapter:

1 Bulk carrier means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers and combination carriers.

2 Bulk carrier of single-side skin construction means a bulk carrier which is constructed generally with single deck, top-side tanks and hopper side tanks in cargo spaces, in which:

.1 any part of a cargo hold is bounded by the side shell; or

.2 where one or more cargo holds are bounded by a double-side skin, the width of which is less than 760 mm in bulk carriers constructed before 1 January 2000 and less than 1,000 mm in bulk carriers constructed on or after 1 January 2000 but before [date of entry into force of the amendments], the distance being measured perpendicular to the side shell.

Such ships include combination carriers in which any part of a cargo hold is bounded by the side shell.

Reference is made to:

.1 For ships constructed before [date of entry into force of the amendments], resolution 6, Interpretation of the definition of “bulk carrier”, as given in chapter IX of SOLAS 1974, as amended in 1994, adopted by the 1997 SOLAS Conference.

.2 The Interpretation of the provisions of SOLAS chapter XII on Additional safety measures for bulk carriers, adopted by the Maritime Safety Committee of the Organization by resolution MSC.79(70).

.3 The application provisions of Annex 1 to the Interpretation of the provisions of SOLAS chapter XII on Additional safety measures for bulk carriers, adopted by the Maritime Safety Committee of the Organization by resolution MSC.89(71).

.4 The Guidance for the identification of a ship as a bulk carrier to be developed by the Organization.
3 **Bulk carrier of double-side skin construction** means a bulk carrier as defined in paragraph 1, in which all cargo holds are bounded by a double-side skin, other than as defined in paragraph 2.2.

4 **Double-side skin** means a configuration where each ship side is constructed by the side shell and a longitudinal bulkhead connecting the double bottom and the deck. Hopper side tanks and top-side tanks may, where fitted, be integral parts of the double-side skin configuration.

5 **Length** of a bulk carrier means the length as defined in the International Convention on Load Lines in force.

6 **Solid bulk cargo** means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any intermediate form of containment.

7 **Bulk carrier bulkhead and double bottom strength standards** means “Standards for the evaluation of scantlings of the transverse water-tight vertically corrugated bulkhead between the two foremost cargo holds and for the evaluation of allowable hold loading of the foremost cargo hold” adopted by resolution 4 of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974 on 27 November 1997, as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

8 **Bulk carriers constructed** means bulk carriers the keels of which are laid or which are at a similar stage of construction.

9 **A similar stage of construction** means the stage at which:

   .1 construction identifiable with a specific ship begins; and

   .2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

10 **Breadth (B)** of a bulk carrier means the breadth as defined in the International Convention on Load Lines in force.

**Regulation 2**

**Application**

Bulk carriers shall comply with the requirements of this chapter in addition to the applicable requirements of other chapters.
Regulation 3

Implementation schedule

Bulk carriers constructed before 1 July 1999 to which regulations 4 or 6 apply shall comply with the provisions of such regulations according to the following schedule, with reference to the enhanced programme of inspections required by regulation XI-1/2:

.1 bulk carriers, which are 20 years of age and over on 1 July 1999, by the date of the first intermediate survey or the first periodical survey after 1 July 1999, whichever comes first;

.2 bulk carriers, which are 15 years of age and over but less than 20 years of age on 1 July 1999, by the date of the first periodical survey after 1 July 1999, but not later than 1 July 2002; and

.3 bulk carriers, which are less than 15 years of age on 1 July 1999, by the date of the first periodical survey after the date on which the ship reaches 15 years of age, but not later than the date on which the ship reaches 17 years of age.

Regulation 4

Damage stability requirements applicable to bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m$^3$ and above, constructed on or after 1 July 1999 shall, when loaded to the summer load line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4.

2 Bulk carriers of 150 m in length and upwards of double-side skin construction with a double-side skin space less than B/5 wide, designed to carry solid bulk cargoes having a density of 1,000 kg/m$^3$ and above, constructed on or after [date of entry into force of the amendments] shall, when loaded to the summer load line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4.

3 Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying solid bulk cargoes having a density of 1,780 kg/m$^3$ and above, constructed before 1 July 1999 shall, when loaded to the summer load line, be able to withstand flooding of the foremost cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph 4. This requirement shall be complied with in accordance with the implementation schedule specified in regulation 3.
Subject to the provisions of paragraph 7, the condition of equilibrium after flooding shall satisfy the condition of equilibrium laid down in the Annex to resolution A.320(IX) - Regulation equivalent to regulation 27 of the International Convention on Load Lines, 1966, as amended by resolution A.514(13). The assumed flooding need only take into account flooding of the cargo hold space to the water level outside the ship in that flooded condition. The permeability of a loaded hold shall be assumed as 0.9 and the permeability of an empty hold shall be assumed as 0.95, unless a permeability relevant to a particular cargo is assumed for the volume of a flooded hold occupied by cargo and a permeability of 0.95 is assumed for the remaining empty volume of the hold.

Bulk carriers constructed before 1 July 1999, which have been assigned a reduced freeboard in compliance with regulation 27(7) of the International Convention on Load Lines, 1966, as adopted on 5 April 1966, may be considered as complying with paragraph 3 of this regulation.

Bulk carriers which have been assigned a reduced freeboard in compliance with the provisions of paragraph (8) of the regulation equivalent to regulation 27 of the International Convention on Load Lines, 1966, adopted by resolution A.320(IX), as amended by resolution A.514(13), may be considered as complying with paragraphs 1 or 3, as appropriate.

On bulk carriers which have been assigned reduced freeboard in compliance with the provisions of regulation 27(8) of Annex B of the Protocol of 1988 relating to the International Convention on Load Lines, 1966, the condition of equilibrium after flooding shall satisfy the relevant provisions of that Protocol.

**Regulation 5**

**Structural strength of bulk carriers**

1. Bulk carriers of 150 m in length and upwards of single-side skin construction, designed to carry solid bulk cargoes having a density of 1,000 kg/m³ and above constructed on or after 1 July 1999, shall have sufficient strength to withstand flooding of any one cargo hold to the water level outside the ship in that flooded condition in all loading and ballast conditions, taking also into account dynamic effects resulting from the presence of water in the hold, and taking into account the recommendations adopted by the Organization.*

2. Bulk carriers of 150 m in length and upwards of double-side skin construction, with a double-side skin space less than B/5 wide, designed to carry bulk cargoes having a density of 1,000 kg/m³ and above constructed on or after [date of entry into force of the amendments], shall comply with the structural strength provisions of paragraph 1.

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* Refer to resolution 3, Recommendation on compliance with SOLAS regulation XII/5, adopted by the 1997 SOLAS Conference.
Regulation 6
Structural and other requirements for bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying solid bulk cargoes having a density of 1,780 kg/m$^3$ and above, constructed before 1 July 1999, shall comply with the following requirements in accordance with the implementation schedule specified in regulation 3:

.1 The transverse watertight bulkhead between the two foremost cargo holds and the double bottom of the foremost cargo hold shall have sufficient strength to withstand flooding of the foremost cargo hold, taking also into account dynamic effects resulting from the presence of water in the hold, in compliance with the Bulk carrier bulkhead and double bottom strength standards. For the purpose of this regulation, the Bulk carrier bulkhead and double bottom strength standards shall be treated as mandatory.

.2 In considering the need for, and the extent of, strengthening of the transverse watertight bulkhead or double bottom to meet the requirements of paragraph 1.1, the following restrictions may be taken into account:

.1 restrictions on the distribution of the total cargo weight between the cargo holds; and

.2 restrictions on the maximum deadweight.

.3 For bulk carriers using either of, or both, the restrictions given in paragraphs 1.2.1 and 1.2.2 above for the purpose of fulfilling the requirements of paragraph 1.1, these restrictions shall be complied with whenever solid bulk cargoes having a density of 1,780 kg/m$^3$ and above are carried.

2 Bulk carriers of 150 m in length and upwards of double-side skin construction, constructed on or after [date of entry into force of the amendments] shall comply with the following requirements:

.1 Primary stiffening structures of the double-side skin shall not be placed inside the cargo hold space.

.2 Subject to the provisions below, the distance between the outer shell and the inner shell at any transverse section shall not be less than 1,000 mm measured perpendicular to the side shell. The double-side skin construction shall be such as to allow access for inspection as provided in regulation II-1/3-6 and the Technical provisions referring thereto.

.1 The clearances below need not be maintained in way of cross ties, upper and lower end brackets of transverse framing or end brackets of longitudinal framing.
.2 The minimum width of the clear passage through the double-side skin space in way of obstructions such as piping or vertical ladders shall not be less than 600 mm.

.3 Where the inner and/or outer skins are transversely framed, the minimum clearance between the inner surfaces of the frames shall not be less than 600 mm.

.4 Where the inner and outer skins are longitudinally framed, the minimum clearance between the inner surfaces of the frames shall not be less than 800 mm. Outside the parallel part of the cargo hold length, this clearance may be reduced where necessitated by the structural configuration but in no case shall be less than 600 mm.

.5 The minimum clearance referred to above shall be the shortest distance measured between assumed lines connecting the inner surfaces of the frames on the inner and outer skins.

3 The double-side skin spaces shall be coated in accordance with the requirements of regulation II-1/3-2 and the [Performance standards for coatings]∗ adopted by the Organization by resolution MSC.[..](..), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

4 The double-side skin spaces, with the exception of top-side wing tanks, if fitted, shall not be used for the carriage of cargo.

Regulation 7

Survey and maintenance of bulk carriers

1 Bulk carriers of 150 m in length and upwards of single-side skin construction, constructed before 1 July 1999, of 10 years of age and over, shall not carry solid bulk cargoes having a density of 1,780 kg/m³ and above unless they have satisfactorily undergone either:

.1 a periodical survey, in accordance with the enhanced programme of inspections during surveys required by regulation XI-1/2, or

.2 a survey of all cargo holds to the same extent as required for periodical surveys in the enhanced programme of inspections during surveys required by regulation XI-1/2.

∗ Performance standards for coatings, to be developed by the Organization.
2 Bulk carriers shall comply with the maintenance requirements provided in regulation II-1/3-1 and the Standards for owners’ inspections and maintenance of bulk carrier hatch covers adopted by the Organization by resolution MSC.[[...]]([...]), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.

Regulation 8

Information on compliance with requirements for bulk carriers

1 The booklet required by regulation VI/7.2 shall be endorsed by the Administration or on its behalf, to indicate that regulations 4, 5, 6 and 7, as appropriate, are complied with.

2 Any restrictions imposed on the carriage of solid bulk cargoes having a density of 1,780 kg/m³ and above in accordance with the requirements of regulations 6 and 14 shall be identified and recorded in the booklet referred to in paragraph 1.

3 A bulk carrier to which paragraph 2 applies shall be permanently marked on the side shell at midships, port and starboard, with a solid equilateral triangle having sides of 500 mm and its apex 300 mm below the deck line, and painted a contrasting colour to that of the hull.

Regulation 9

Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds

For bulk carriers constructed before 1 July 1999 being within the application limits of regulation 4.3, which have been constructed with an insufficient number of transverse watertight bulkheads to satisfy that regulation, the Administration may allow relaxation from the application of regulations 4.3 and 6 on condition that they shall comply with the following requirements:

.1 for the foremost cargo hold, the inspections prescribed for the annual survey in the enhanced programme of inspections during surveys required by regulation XI-1/2 shall be replaced by the inspections prescribed therein for the intermediate survey of cargo holds;

.2 are provided with bilge well high water level alarms in all cargo holds, or in cargo conveyor tunnels, as appropriate, giving an audible and visual alarm on the navigation bridge, as approved by the Administration or an organization recognized by it in accordance with the provisions of regulation XI-1/1; and
are provided with detailed information on specific cargo hold flooding scenarios. This information shall be accompanied by detailed instructions on evacuation preparedness under the provisions of section 8 of the International Safety Management (ISM) Code and be used as the basis for crew training and drills.

Regulation 10

Solid bulk cargo density declaration

1 Prior to loading bulk cargo on bulk carriers of 150 m in length and upwards, the shipper shall declare the density of the cargo, in addition to providing the cargo information required by regulation VI/2.

2 For bulk carriers to which regulation 6 applies, unless such bulk carriers comply with all relevant requirements of this chapter applicable to the carriage of solid bulk cargoes having a density of 1,780 kg/m³ and above, any cargo declared to have a density within the range 1,250 kg/m³ to 1,780 kg/m³ shall have its density verified by an accredited testing organization.*

Regulation 11

Loading instrument

(Unless provided otherwise, this regulation applies to bulk carriers regardless of their date of construction)

1 Bulk carriers of 150 m in length and upwards shall be fitted with a loading instrument capable of providing information on hull girder shear forces and bending moments, taking into account the recommendation adopted by the Organization.**

2 Bulk carriers of 150 m in length and upwards constructed before 1 July 1999 shall comply with the requirements of paragraph 1 not later than the date of the first intermediate or periodical survey of the ship to be carried out after 1 July 1999.

3 Bulk carriers of less than 150 m in length constructed on or after [date of entry into force of the amendments] shall be fitted with a loading instrument capable of providing information on the ship’s stability in the intact condition. The computer software shall be approved for stability calculations by the Administration and shall be provided with standard conditions for testing purposes relating to the approved stability information.***

* In verifying the density of solid bulk cargoes, reference should be made to the Uniform method of measurement of the density of bulk cargoes (MSC/Circ.908).

** Refer to the Recommendation on loading instruments, adopted by resolution 5 of the 1997 SOLAS Conference.

*** Refer to the relevant parts of the appendix to the Guidelines for the on-board use and application of computers (MSC/Circ.891).
Regulation 12

Hold, ballast and dry space water ingress alarms

(This regulation applies to bulk carriers regardless of their date of construction)

1 Bulk carriers shall be fitted with water level detectors:

.1 in each cargo hold, giving audible and visual alarms, one when the water level above the inner bottom in any hold reaches a height of 0.5 m and another at a height not less than 15% of the depth of the cargo hold but not more than 2 m. On bulk carriers to which regulation 9.2 applies, detectors with only the latter alarm need be installed. The water level detectors shall be fitted in the aft end of the cargo holds. For cargo holds which are used for water ballast, an alarm overriding device may be installed. The visual alarms shall clearly discriminate between the two different water levels detected in each hold;

.2 in any ballast tank forward of the collision bulkhead required by regulation II-1/11, giving an audible and visual alarm when the liquid in the tank reaches a level not exceeding 10% of the tank capacity. An alarm overriding device may be installed to be activated when the tank is in use;

and

.3 in any dry or void space other than a chain cable locker, any part of which extends forward of the foremost cargo hold, giving an audible and visual alarm at a water level of 0.1 m above the deck. Such alarms need not be provided in enclosed spaces the volume of which does not exceed 0.1% of the ship’s maximum displacement volume.

2 The audible and visual alarms specified in paragraph 1 shall be located on the navigation bridge.

3 Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the annual, intermediate or renewal survey of the ship to be carried out after 1 July 2004, whichever comes first.

Regulation 13

Availability of pumping systems*

(This regulation applies to bulk carriers regardless of their date of construction)

1 On bulk carriers, the means for draining and pumping ballast tanks forward of the collision bulkhead and bilges of dry spaces any part of which extends forward of the foremost cargo hold shall be capable of being brought into operation from a readily
accessible enclosed space, the location of which is accessible from the navigation bridge or propulsion machinery control position without traversing exposed freeboard or superstructure decks. Where pipes serving such tanks or bilges pierce the collision bulkhead, valve operation by means of remotely operated actuators may be accepted, as an alternative to the valve control specified in regulation II-1/11.4, provided that the location of such valve controls complies with this regulation.

2 Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the first intermediate or renewal survey of the ship to be carried out after 1 July 2004, but in no case later than 1 July 2007.

Regulation 14

Restrictions from sailing with any hold empty

Bulk carriers of 150 m in length and upwards of single-side skin construction, carrying cargoes having a density of 1,780 kg/m$^3$ and above, if not meeting the requirements of regulation 5.1 and the Standards and criteria for side structures of bulk carriers of single-side skin construction, adopted by the Organization by resolution MSC.[..][..], as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I, shall not sail with any hold loaded to less than 10% of the hold’s maximum allowable cargo weight when in the full load condition, after reaching 10 years of age. The applicable full load condition for this regulation is a load equal to or greater than 90% of the ship’s deadweight at the relevant assigned freeboard.”

***
ANNEX 10

DRAFT AMENDMENT TO CHAPTER III OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER III

LIFE-SAVING APPLIANCES AND ARRANGEMENTS

Regulation 31 - Survival craft and rescue boats

1 The following new paragraph 1.8 is added after existing paragraph 1.7:

“1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after […] shall comply with the requirements of paragraph 1.2.”

***
ANNEX 11

DRAFT MSC RESOLUTION

STANDARDS AND CRITERIA FOR SIDE STRUCTURES OF
BULK CARRIERS OF SINGLE-SIDE SKIN CONSTRUCTION

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO SOLAS chapter XII on Additional safety measures for bulk carriers, which the 1997 SOLAS Conference adopted with the aim of enhancing the safety of ships carrying solid bulk cargoes,

RECALLING FURTHER that, having recognized the need to further improve the safety of bulk carriers in all aspects of their design, construction, equipment and operation, it examined the results of various formal safety assessment (FSA) studies on bulk carrier safety,

RECOGNIZING that banning of alternate hold loading of heavy cargoes in full load condition for bulk carriers of single-side skin construction not meeting appropriate side structural strength requirements would contribute to improving the safety of these ships by reduction of shear forces and bending moments,

NOTING resolution MSC.[..](..) by which it adopted, inter alia, the revised chapter XII of the Convention, in particular regulation XII/14 – Restrictions from sailing with any hold empty, where reference is made to mandatory standards and criteria which a bulk carrier has to comply with in order to avoid the above-mentioned restrictions,

ACKNOWLEGIND that the International Association of Classification Societies (IACS) has issued the following relevant Unified Requirements:

S12 Rev.2.1 - Side structure in Single Side Skin Bulk Carriers; and

S31 - Renewal criteria for side shell frames in single side skin bulk carriers not built in accordance with UR S12 Rev.1 or subsequent revisions,

CONSIDERING that the above IACS Unified Requirements embody respectively the standards and criteria necessary to ascertain whether regulation XII/14 of the Convention should apply to a particular bulk carrier, and, therefore, should form the basis of the said standards and criteria,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment at its forty-seventh session,
1. Adopts, for the purposes of the application of regulation XII/14 of the Convention:
   .1 the Standards for side structures in single-side skin bulk carriers, set out in Annex 1 to the present resolution; and
   .2 the Renewal criteria for side shell frames and brackets in single-side skin bulk carriers not built in accordance with the Standards for side structures in single-side skin bulk carriers, set out in Annex 2 to the present resolution;

2. Invites Contracting Governments to the Convention to note that the annexed Standards and Renewal criteria will take effect on […………] upon the entry into force of the revised chapter XII of the Convention;

3. Requests the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards and Renewal criteria to all Contracting Governments to the Convention;

4. Further Requests the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards and Renewal criteria to all Members of the Organization which are not Contracting Governments to the Convention.
ANNEX 1

STANDARDS FOR SIDE STRUCTURES IN SINGLE-SIDE SKIN BULK CARRIERS

1 Application

For the purpose of SOLAS regulation XII/14, these requirements define the minimum required standards for the side structures within the cargo area of single-side skin bulk carriers of 150 m in length and upwards carrying solid bulk cargoes having a density of 1,780 kg/m³ and above, for them not to be subject to restrictions from sailing with any hold empty.

2 Scantlings of side structures

2.1 The thickness of the side shell plating and the section modulus and shear area of side frames shall be determined according to the criteria of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

2.2 The scantlings of side hold frames immediately adjacent to the collision bulkhead shall be increased in order to prevent excessive imposed deformation on the shell plating. As an alternative, supporting structures shall be fitted which maintain the continuity of forepeak stringers within the foremost hold.

3 Minimum thickness of frame webs

The thickness of frame webs within the cargo area shall not be less than \( t_{w,\text{min}} \), in mm, given by:

\[
t_{w,\text{min}} = C(7.0 + 0.03L)
\]

where:

\[
C = \begin{cases} 
1.15 & \text{for the frame webs in way of the foremost hold;} \\
1.0 & \text{for the frame webs in way of other holds.}
\end{cases}
\]

\[
L = \text{the distance, in metres, on the summer load waterline from the fore side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. } L \text{ shall not be less than 96\%, and need not be greater than 97\%, of the extreme length on the summer load waterline but need not be taken greater than 200 m.}
\]

4 Lower and upper brackets

4.1 The thickness of the frame lower brackets shall not be less than the greater of \( t_w \) and \( t_{w,\text{min}} + 2 \) mm, where \( t_w \) is the fitted thickness of the side frame web. The thickness of the frame upper bracket shall not be less than the greater of \( t_w \) and \( t_{w,\text{min}} \).
4.2 The section modulus SM of the frame and bracket or integral bracket, and associated shell plating, at the locations shown in Figure 1, shall not be less than twice the section modulus SMF required for the frame midspan area.

4.3 The dimensions of the lower and upper brackets shall not be less than those shown in Figure 2.

4.4 Structural continuity with the upper and lower end connections of side frames shall be ensured within topside and hopper tanks by connecting brackets as shown in Figure 3. The brackets shall be stiffened against buckling according to the criteria of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety.

4.5 The section moduli of the side longitudinals and sloping bulkhead longitudinals which support the connecting brackets shall be determined with the span taken between transverses according to the requirements of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or with applicable national standards of the Administration which provide an equivalent level of safety. Where other arrangements are adopted at the discretion of the Administration or a recognized classification society, the section moduli of the side longitudinals and sloping bulkhead longitudinals shall be determined according to the applicable criteria for the purpose of effectively supporting the brackets.

5 Side frame sections

5.1 Frames shall be fabricated symmetrical sections with integral upper and lower brackets and shall be arranged with soft toes.

5.2 The side frame flange shall be curved (not knuckled) at the connection with the end brackets. The radius of curvature shall not be less than r, in mm, given by:

$$r = \frac{0.4b_f^2}{t_f}$$

where $b_f$ and $t_f$ are the flange width and thickness of the brackets, respectively, in mm. The end of the flange shall be snipped.

5.3 In ships less than 190 m in length, mild steel frames may be asymmetric and fitted with separate brackets. The face plate or flange of the bracket shall be sniped at both ends. Brackets shall be arranged with soft toes.
5.4 The frame web thickness ratio of frames shall not exceed the following values:

- $60 \times k^{0.5}$ for symmetrically flanged frames
- $50 \times k^{0.5}$ for asymmetrically flanged frames

where:

$k = 1.0$ for ordinary hull structural steel;
$k = 0.78$ for steel with yield stress of 315 N/mm²; and
$k = 0.72$ for steel with yield stress of 355 N/mm².

The outstanding flange shall not exceed $10 \times k^{0.5}$ times the net flange thickness.

6 Tripping brackets

In way of the foremost hold side frames of asymmetrical section shall be fitted with tripping brackets at every two frames, as shown in Figure 4.

7 Weld connections of frames and end brackets

7.1 Double continuous welding shall be adopted for the connections of frames and brackets to side shell and hopper and upper wing tank plating and web to face plates.

7.2 For this purpose, the weld throat shall be (see Figure 1):

- $0.44 \times t$ in zone “a”
- $0.4 \times t$ in zone “b”

where $t$ is the thinner of the two connected members.

7.3 Where the hull form is such to prohibit an effective fillet weld, edge preparation of the web of frame and bracket may be required, in order to ensure the same efficiency as the weld connection stated above.

8 Minimum net thickness of side shell plating

The thickness of side shell plating located between the hopper and top wing tank shall not be less than $t_{p, \text{min}}$ in mm, given by:

$$t_{p, \text{min}} = \sqrt{L}$$
Figure 4 - Tripping brackets to be fitted in way of foremost hold
ANNEX 2

RENEWAL CRITERIA FOR SIDE SHELL FRAMES AND BRACKETS IN SINGLE-SIDE SKIN BULK CARRIERS NOT BUILT IN ACCORDANCE WITH THE “STANDARDS FOR SIDE STRUCTURES IN SINGLE-SIDE SKIN BULK CARRIERS”

1 Application and definitions

For the purpose of SOLAS regulation XII/14, these requirements apply to the side shell frames and brackets of cargo holds in single-side skin bulk carriers, which were not built in accordance with annex 1, but shall achieve an equivalent level of safety for not being subject to restrictions when sailing with any hold empty.

These requirements define steel renewal criteria or other measures to be taken for the webs and flanges of side shell frames and brackets as per paragraph 2.

Reinforcing measures of side frames are also defined as per paragraph 2.3.

Finite element or other numerical analysis or direct calculation procedures cannot be used as an alternative to compliance with the requirements of this annex, except in cases of unusual side structure arrangements or framing to which the requirements of this annex cannot be directly applied.

Assessment of compliance with these requirements is to be carried out by the date on which the ship reaches 10 years of age and at each subsequent intermediate and renewal survey.

1.1 Ice strengthened ships

1.1.1 Where bulk carriers are reinforced to comply with an ice class notation, the intermediate frames shall not be included when considering compliance with this annex.

1.1.2 The renewal thicknesses for the additional structure required to meet the ice strengthening notation shall be based on the classification society’s requirements.

1.1.3 If the ice class notation is requested to be withdrawn, the additional ice strengthening structure, with the exception of tripping brackets (see 2.1.2.1.b and 2.3), shall not be considered to contribute to compliance with this annex.
2 Renewal or other measures

2.1 Criteria for renewal or other measures

2.1.1 Symbols used in 2.1

\[ \begin{align*}
    t_M &= \text{thickness as measured, in mm} \\
    t_{\text{REN}} &= \text{thickness at which renewal is required (2.1.2)} \\
    t_{\text{REN,d/t}} &= \text{thickness criteria based on d/t ratio (2.1.2.1)} \\
    t_{\text{REN,S}} &= \text{thickness criteria based on strength (2.1.2.2)} \\
    t_{\text{COAT}} &= 0.75 \ t_{S12} \\
    t_{S12} &= \text{thickness in mm as required by annex 1 in paragraph 3 for frame webs and in paragraph 4 for upper and lower brackets} \\
    t_{AB} &= \text{thickness as built, in mm} \\
    t_C &= \text{See Table 1 below}
\end{align*} \]

![Table 1 - \( t_C \) values, in mm](image)

<table>
<thead>
<tr>
<th>Ship’s length ( L ), in m</th>
<th>Holds other than No. 1</th>
<th>Hold No. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Span and upper brackets</td>
<td>Lower brackets</td>
</tr>
<tr>
<td>≤100</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>150</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>≥ 200</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: For intermediate ship lengths, \( t_C \) is obtained by linear interpolation between the above values.

2.1.2 Criteria for webs (Shear and other checks)

The webs of side shell frames and brackets shall be renewed when the measured thickness \( t_M \) is equal to or less than the thickness \( t_{\text{REN}} \) as defined below:

\[ t_{\text{REN}} \text{ is the greatest of:} \]

\[ \begin{align*}
    .1 &= t_{\text{COAT}} - t_C \\
    .2 &= 0.75 \ t_{AB} \\
    .3 &= t_{\text{REN,d/t}} \\
    .4 &= t_{\text{REN,S}} \text{ (where required by 2.1.2.2)}
\end{align*} \]
### 2.1.2.1 Thickness criteria based on d/t ratio

Subject to b) and c) below, $t_{REN,d/t}$ is given by the following equation:

$$t_{REN,d/t} = \frac{\text{web depth in mm}}{R}$$

where:

- $R$ = for frames
  - $65 \, k^{0.5}$ for symmetrically flanged frames
  - $55 \, k^{0.5}$ for asymmetrically flanged frames
  - $87 \, k^{0.5}$ for symmetrically flanged frames
  - $73 \, k^{0.5}$ for asymmetrically flanged frames

for lower brackets (see a) below):

- $87 \, k^{0.5}$ for symmetrically flanged frames
- $73 \, k^{0.5}$ for asymmetrically flanged frames

$k = 1$ for ordinary hull structural steel,
$k = 0.78$ for steel with yield stress of $315 \, \text{N/mm}^2$ and
$k = 0.72$ for steel with yield stress of $355 \, \text{N/mm}^2$.

In no instance shall $t_{REN,d/t}$ for lower integral brackets be taken as less than $t_{REN,d/t}$ for the frames they support.

a) Lower brackets

In calculating the web depth of the lower brackets, the following shall apply:

1. The web depth of lower bracket may be measured from the intersection of the sloped bulkhead of the hopper tank and the side shell plate, perpendicularly to the face plate of the lower bracket (see Figure 3).

2. Where stiffeners are fitted on the lower bracket plate, the web depth may be taken as the distance between the side shell and the stiffener, between the stiffeners or between the outermost stiffener and the face plate of the brackets, whichever is the greatest.

b) Tripping bracket alternative

When $t_d$ is less than $t_{REN,d/t}$ at section b) of the side frames (see figure 2), tripping brackets in accordance with 2.3 may be fitted as an alternative to the requirements for the web depth to thickness ratio of side frames, in which case $t_{REN,d/t}$ may be disregarded in the determination of $t_{REN}$ in accordance with 2.1.2.
c) Immediately abaft collision bulkhead

For the side frames located immediately abaft the collision bulkhead, whose scantlings are increased in order that their moment of inertia is such as to avoid undesirable flexibility of the side shell, when their web as built thickness $t_{AB}$ is greater than $1.65t_{REN,S}$, the thickness $t'_{REN,d/t}$ may be taken as the value $t'_{REN,d/t}$ obtained from the following equation:

$$t'_{REN,d/t} = \frac{1}{3} \sqrt{\frac{t_{REN,d/t} ^2}{t_{REN,S}}}$$

where $t_{REN,S}$ is obtained from 3.3.

2.1.2.2 Thickness criteria based on shear strength check

Where $t_M$ in the lower part of side frames, as defined in Figure 1, is equal to or less than $t_{COAT}$, $t_{REN,S}$ shall be determined in accordance with 3.3.

2.1.2.3 Thickness of renewed webs of frames and lower brackets

Where steel renewal is required, the renewed webs shall be of a thickness not less than $t_{AB}$, $1.2t_{COAT}$ or $1.2t_{REN}$, whichever is the greatest.

2.1.2.4 Criteria for other measures

When $t_{REN} < t_M \leq t_{COAT}$, measures shall be taken, consisting of all the following:

.1 sand blasting, or equivalent, and coating (see 2.2),

.2 fitting tripping brackets (see 2.3), when the above condition occurs for any of the side frame zones A, B, C and D, shown in figure 1, and

.3 maintaining the coating in "as new" condition (i.e. without breakdown or rusting) at renewal and intermediate surveys.

The above measures may be waived if the structural members show no thickness diminution with respect to the as built thicknesses and coating is in "as new" condition (i.e. without breakdown or rusting).

2.1.3 Criteria for frames and brackets (Bending check)

Where the length or depth of the lower bracket does not meet the requirements in annex 1, a bending strength check in accordance with 3.4 shall be carried out and renewals or reinforcements of frames and/or brackets effected as required therein.

2.2 Thickness measurements, steel renewal, sand blasting and coating

For the purpose of steel renewal, sand blasting and coating, four zones A, B, C and D are defined, as shown in figure 1.
Representative thickness measurements shall be taken for each zone and shall be assessed against the criteria in 2.1.

In case of integral brackets, when the criteria in 2.1 are not satisfied for zone A or B, steel renewal, sand blasting and coating, as applicable, shall be done for both zones A and B.

In case of separate brackets, when the criteria in 2.1 are not satisfied for zone A or B, steel renewal, sand blasting and coating shall be done for each one of these zones, as applicable.

When steel renewal is required for zone C according to 2.1, it shall be done for both zones B and C. When sand blasting and coating is required for zone C according to 2.1, it shall be done for zones B, C and D.

When steel renewal is required for zone D according to 2.1, it needs only to be done for this zone. When sand blasting and coating is required for zone D according to 2.1, it shall be done for both zones C and D.

Special consideration may be given to zones previously renewed or re-coated, if found in “as new” condition (i.e., without breakdown or rusting) by the Administration or a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1.

When adopted, on the basis of the renewal thickness criteria in 2.1, in general coating shall be applied in compliance with the requirements of the organization, as applicable.

Where, according to the requirements in 2.1, a limited number of side frames and brackets are shown to require coating over part of their length, the following criteria apply:

1. The part to be coated includes:
   - the web and the face plate of the side frames and brackets,
   - the hold surface of side shell, hopper tank and topside tank plating, as applicable, over a width not less than 100 mm from the web of the side frame.

2. Epoxy coating or equivalent shall be applied.

In all cases, all the surfaces to be coated shall be sand blasted prior to coating application.

2.3 Reinforcing measures

Reinforcing measures are constituted by tripping brackets, located at the lower part and at midspan of side frames (see figure 4). Tripping brackets may be located at every two frames, but lower and midspan brackets shall be fitted in line between alternate pairs of frames.

The thickness of the tripping brackets shall be not less than the as built thickness of the side frame webs to which they are connected.
Double continuous welding shall be adopted for the connections of tripping brackets to the side shell frames and shell plating.

2.4 **Weld throat thickness**

In case of steel renewal the welded connections shall comply with paragraph 7 of annex 1.

2.5 **Pitting and grooving**

If pitting intensity is higher than 15% in area (see figure 5), thickness measurement shall be taken to check pitting corrosion.

The minimum acceptable remaining thickness in pits or grooves is equal to:

1. 75% of the as built thickness, for pitting or grooving in the frame and brackets webs and flanges; and

2. 70% of the as built thickness, for pitting or grooving in the side shell, hopper tank and topside tank plating attached to the side frame, over a width up to 30 mm from each side of it.

3 **Strength check criteria**

In general, loads shall be calculated and strength checks shall be carried out for the aft, middle and forward frames of each hold. The scantlings required for frames in intermediate positions shall be obtained by linear interpolation between the results obtained for the above frames.

When scantlings of side frames vary within a hold, the required scantlings shall also be calculated for the mid frame of each group of frames having the same scantlings. The scantlings required for frames in intermediate positions shall be obtained by linear interpolation between the results obtained for the calculated frames.

3.1 **Load model**

3.1.1 **Forces**

The forces $P_{fr,a}$ and $P_{fr,b}$, in kN, to be considered for the strength checks at sections a) and b) of side frames (specified in figure 2; in the case of separate lower brackets, section b) is at the top of the lower bracket), are given by:

$$P_{fr,a} = P_S + \max(P_1, P_2)$$

$$P_{fr,b} = P_{fr,a} \frac{h - 2h_b}{h}$$
where:

\[ P_s = \text{still water pressure force, in kN} \]

\[ P_s = s \cdot h \left( \frac{p_{s,U} + p_{s,L}}{2} \right) \]

when the upper end of the side frame span \( h \) (see figure 1) is below the load water line

\[ P_s = s \cdot h' \left( \frac{p_{s,L}}{2} \right) \]

when the upper end of the side frame span \( h \) (see figure 1) is at or above the load water line

\[ P_1 = \text{wave pressure force, in kN, in head seas} \]

\[ P_1 = s \cdot h \left( \frac{p_{1,U} + p_{1,L}}{2} \right) \]

\[ P_2 = \text{wave pressure force, in kN, in beam seas} \]

\[ P_2 = s \cdot h \left( \frac{p_{2,U} + p_{2,L}}{2} \right) \]

\( h, h_b \) = side frame span and lower bracket length, in m, defined in figures 1 and 2, respectively

\( h' \) = distance, in m, between the lower end of side frame span \( h \) (see figure 1) and the load waterline

\( s \) = frame spacing, in m

\( p_{s,U}, p_{s,L} \) = still water pressure, in kN/m\(^2\), at the upper and lower end of the side frame span \( h \) (see figure 1), respectively

\( p_{1,U}, p_{1,L} \) = wave pressure, in kN/m\(^2\), as defined in 3.1.2.1 below for the upper and lower end of the side frame span \( h \), respectively

\( p_{2,U}, p_{2,L} \) = wave pressure, in kN/m\(^2\), as defined in 3.1.2.2 below for the upper and lower end of the side frame span \( h \), respectively
3.1.2 Wave pressure

3.1.2.1 Wave pressure \( p_1 \)

1. The wave pressure \( p_1 \), in kN/m\(^2\), at and below the waterline is given by:

\[
p_1 = 1.50 \left[ p_{11} + 135 \frac{B}{2 (B + 75)} - 1.2 (T - z) \right]
\]

\( p_{11} = 3 k_s C + k_f \)

2. The wave pressure \( p_1 \), in kN/m\(^2\), above the waterline is given by:

\[
p_1 = p_{1wl} - 7.50 (z - T)
\]

3.1.2.2 Wave pressure \( p_2 \)

1. The wave pressure \( p_2 \), in kN/m\(^2\), at and below the waterline is given by:

\[
p_2 = 13.0 \left[ 0.5 B \frac{50 C_f}{2 (B + 75)} + C_b \frac{0.5 B + k_f}{14} \left( 0.7 + 2 \frac{z}{T} \right) \right]
\]

2. The wave pressure \( p_2 \), in kN/m\(^2\), above the waterline is given by:

\[
p_2 = p_{2wl} - 5.0 (z - T)
\]

where:

\( p_{1wl} = \) \( p_1 \) wave sea pressure at the waterline

\( p_{2wl} = \) \( p_2 \) wave sea pressure at the waterline

\( L = \) the distance, in metres, on the summer load waterline from the fore side of stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. \( L \) shall not be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline.

\( B = \) greatest moulded breadth, in m
CB = moulded block coefficient at draught d corresponding to summer load waterline, based on length L and moulded breadth B, but not to be taken less than 0.6:

\[ C_B = \frac{\text{moulded displacement [m}^3\text{] at draught d}}{LBD} \]

T = maximum design draught, in m

C = coefficient

\[ C = 10.75 - \left( \frac{300 - L}{100} \right)^{1.5} \quad \text{for} \quad 90 \leq L \leq 300 \text{ m} \]

\[ C = 10.75 \quad \text{for} \quad 300 < L \]

CR = \((1.25 - 0.025 \frac{k_r}{GM}) \) k

k = 1.2 \quad \text{for ships without bilge keel}

= 1 \quad \text{for ships with bilge keel}

k_r = roll radius of gyration. If the actual value of k_r is not available

= 0.39 B \quad \text{for ships with even distribution of mass in transverse section (e.g. alternate heavy cargo loading or homogeneous light cargo loading)}

= 0.25 B \quad \text{for ships with uneven distribution of mass in transverse section (e.g. homogenous heavy cargo distribution)}

GM = 0.12 B \quad \text{if the actual value of GM is not available}

z = vertical distance, in m, from the baseline to the load point

ks = \( C_B + \frac{0.83}{\sqrt{C_B}} \) \quad \text{at aft end of L}

= \( C_B \) \quad \text{between 0.2 L and 0.6 L from aft end of L}

= \( C_B + \frac{1.33}{C_B} \) \quad \text{at forward end of L}

Between the above specified points, ks shall be varied linearly

kr = 0.8 C
3.2 Allowable stresses

The allowable normal and shear stresses \( \sigma_a \) and \( \tau_a \), in N/mm\(^2\), in the side shell frames are given by:

\[
\begin{align*}
\sigma_a &= 0.90 \sigma_F \\
\tau_a &= 0.40 \sigma_F
\end{align*}
\]

where \( \sigma_F \) is the minimum upper yield stress, in N/mm\(^2\), of the material.

3.3 Shear strength check

Where \( t_M \) in the lower part of side frames, as defined in figure 1, is equal to or less than \( t_{COAT} \), shear strength check shall be carried out in accordance with the following.

The thickness \( t_{REN,S} \), in mm, is the maximum between the thicknesses \( t_{REN,Sa} \) and \( t_{REN,Sb} \) obtained from the shear strength check at sections a) and b) (see figure 2 and 3.1) given by the following, but need not be taken in excess of 0.75\( t_{S12} \):

\[
\begin{align*}
.1 \text{ at section a): } t_{REN,Sa} &= \frac{1,000 \ k_s \ P_{fr,a}}{d_a \ \sin \phi \ \tau_a} \\
.2 \text{ at section b): } t_{REN,Sb} &= \frac{1,000 \ k_s \ P_{fr,b}}{d_b \ \sin \phi \ \tau_a}
\end{align*}
\]

where:

\[
\begin{align*}
k_s &= \text{shear force distribution factor, to be taken equal to 0.6} \\
P_{fr,a}, P_{fr,b} &= \text{pressure forces defined in 3.1.1} \\
d_a, d_b &= \text{bracket and frame web depth, in mm, at sections a) and b), respectively (see figure 2); in case of separate (non integral) brackets, } d_b \text{ shall be taken as the minimum web depth deducting possible scallops} \\
\phi &= \text{angle between frame web and shell plate} \\
\tau_a &= \text{allowable shear stress, in N/mm}^2, \text{defined in 3.2.}
\end{align*}
\]
3.4  Bending strength check

1 When the lower bracket length or depth do not comply with requirements in annex 1, the actual section modulus, in cm\(^3\), of the brackets and side frames at sections a) and b) shall be not less than:

\[ Z_a = \frac{1,000 \, P_{fr,a} \, h}{m_a \, \sigma_a} \]

\[ Z_b = \frac{1,000 \, P_{fr,a} \, h}{m_b \, \sigma_a} \]

where:

\[ P_{fr,a} = \text{pressure force defined in 3.1.1} \]

\[ h = \text{side frame span, in m, defined in figure 1} \]

\[ \sigma_a = \text{allowable normal stress, in N/mm}^2, \text{defined in 3.2} \]

\[ m_a, m_b = \text{bending moment coefficients defined in table 2} \]

2 The actual section modulus of the brackets and side frames shall be calculated about an axis parallel to the attached plate, based on the measured thicknesses. For pre-calculations, alternative thickness values may be used, provided they are not less than:

\[ t_{REN}, \text{for the web thickness;} \]

the minimum thicknesses allowed by the renewal criteria for flange and attached plating of a classification society which is recognized by the Administration in accordance with the provisions of SOLAS regulation XI-1/1, or by applicable national standards of the Administration which provide an equivalent level of safety.

3 The attached plate breadth is equal to the frame spacing, measured along the shell at midspan h.

4 If the actual section moduli at sections a) and b) are less than the values \( Z_a \) and \( Z_b \), the frames and brackets shall be renewed or reinforced in order to obtain actual section moduli not less than 1.2 \( Z_a \) and 1.2 \( Z_b \), respectively.

In such a case, renewal or reinforcements of the flange shall be extended over the lower part of side frames, as defined in figure 1.
Table 2 – Bending moment coefficients $m_a$ and $m_b$

<table>
<thead>
<tr>
<th></th>
<th>$m_a$</th>
<th>$m_b$</th>
<th>$h_B = 0.08 \ h$</th>
<th>$h_B = 0.1 \ h$</th>
<th>$h_B = 0.125 \ h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty holds of ships approved to operate in non homogeneous loading conditions</td>
<td>10</td>
<td>17</td>
<td>19</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Other cases</td>
<td>12</td>
<td>20</td>
<td>22</td>
<td>26</td>
<td>26</td>
</tr>
</tbody>
</table>

Note 1: Non homogeneous loading condition means a loading condition in which the ratio between the highest and the lowest filling ratio, evaluated for each hold, exceeds 1.20 corrected for different cargo densities.

Note 2: For intermediate values of the bracket length $h_B$, the coefficient $m_b$ is obtained by linear interpolation between the table values.

Figure 1 – Lower part of side frames
Figure 2 – Sections a) and b)

\[ d_a = \text{lower bracket web depth} \]
\[ d_b = \text{frame web depth} \]
\[ h_B = \text{lower bracket length} \]

Figure 3 – Definition of the lower bracket web depth
Figure 4 – Tripping brackets

Figure 5 - Pitting intensity diagrams (from 5% to 25% intensity)
ANNEX 12

DRAFT MSC RESOLUTION

STANDARDS FOR OWNERS’ INSPECTION AND MAINTENANCE OF BULK CARRIER HATCH COVERS

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO SOLAS chapter XII on Additional safety measures for bulk carriers, which the 1997 SOLAS Conference adopted with the aim of enhancing the safety of ships carrying solid bulk cargoes,

RECALLING FURTHER that, having recognized the need to further improve the safety of bulk carriers in all aspects of their design, construction, equipment and operation, it examined the results of various formal safety assessment (FSA) studies on bulk carrier safety,

RECOGNIZING that, on the basis of the outcome of the aforementioned FSA studies, replacing hatch covers in existing bulk carriers would not be cost-effective and that, instead, more attention should be paid to hatch cover securing mechanisms and the issue of horizontal loads, especially with regard to maintenance and frequency of inspection,

RECALLING that, at its seventy-seventh session, in approving MSC/Circ.1071 – Guidelines for bulk carrier hatch cover surveys and owners’ inspections and maintenance, it invited Member Governments to ensure that companies, as defined in the ISM Code, that operate bulk carriers flying their flag are made aware of the need to implement regular maintenance and inspection procedures for hatch cover closing mechanisms in existing bulk carriers in order to ensure proper operation and efficiency at all times,

HAVING APPROVED, with a view to adoption, draft amendments to regulation XII/7 of the Convention – Survey and maintenance of bulk carriers, where reference is made to mandatory Standards for owners’ inspection and maintenance of bulk carrier hatch covers,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment at its forty-seventh session,

1. ADOPTS, for the purposes of the application of regulation XII/7 of the Convention, the Standards for owners’ inspection and maintenance of bulk carrier hatch covers, set out in the Annex to the present resolution;

2. INVITES Contracting Governments to the Convention to note that the annexed Standards will take effect on […………] upon the entry into force of the revised chapter XII of the Convention;
3. REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards to all Contracting Governments to the Convention;

4. FURTHER REQUESTS the Secretary-General to transmit certified copies of this resolution and the text of the annexed Standards to all Members of the Organization which are not Contracting Governments to the Convention.
ANNEX

STANDARDS FOR OWNERS’ INSPECTION AND MAINTENANCE OF
BULK CARRIER HATCH COVERS

1 Application

These Standards define requirements for the owners’ inspection and maintenance of cargo hatch covers on board bulk carriers.

2 Maintenance of hatch covers and hatch opening, closing, securing and sealing systems

2.1 Lack of weather tightness may be attributed to:
   .1 normal wear and tear of the hatch cover system: deformation of the hatch coaming or cover due to impact; wear of the friction pads where fitted; wear and tear of the cleating arrangement; or
   .2 lack of maintenance: corrosion of plating and stiffeners due to breakdown of coatings; lack of lubrication of moving parts; cleats, joint gaskets and rubber pads in need of replacement, or replaced with incorrect specification parts.

2.2 Insecure hatch covers may be particularly attributed to damage or wear of securing devices, or incorrect adjustment, and incorrect pre-tension and load sharing, of cleating systems.

2.3 Ship owners and operators shall therefore institute a programme of maintenance. This maintenance shall be directed to:
   .1 protecting exposed surfaces of plating and stiffeners of hatch covers and coamings in order to preserve overall structural strength;
   .2 preserving the surface of trackways of rolling covers, and of compression bars and other steel work bearing on seals or friction pads, noting that surface smoothness and correct profile are important for reducing wear rates on these components;
   .3 maintaining hydraulic or mechanically powered opening, closing, securing or cleating systems in accordance with manufacturer’s recommendations;
   .4 maintaining manual cleats in adjustment, with replacement when significant wastage, wear or loss of adjustment capability is identified;
   .5 replacing seals and other wear components in accordance with manufacturers’ recommendations, noting the need to carry on board or obtain such spares of correct specification, and that seals are designed for a particular degree of compression, hardness, chemical and wear resistance; and
.6 keeping all hatch cover drains and their non-return valves, where fitted, in working order, noting that any drains fitted to the inboard side of seal lines will have non-return valves for prevention of water ingress to holds in the event of boarding seas.

2.4 The equalization of securing loads shall be maintained following the renewal of components such as seals, rubber washers, peripheral and cross joint cleats.

2.5 Ship owners and operators shall keep a Maintenance Plan and a record of maintenance and component replacement carried out, in order to facilitate maintenance planning and statutory surveys by the Administration. Hatch cover maintenance plans shall form part of a ship’s safety management system as referred to in the ISM Code.

2.6 Where the range of cargoes carried requires different gasket materials, a selection of gasket materials of the correct specifications shall be carried on board, in addition to other spares.

2.7 At each operation of a hatch cover, the cover, and in particular bearing surfaces and drainage channels, shall be free of debris and as clean as practicable.

2.8 Attention is drawn to the dangers of proceeding to sea without fully secured hatch covers. Securing of all covers shall always be completed before the commencement of a sea passage. During voyages, especially on loaded passages, cover securing devices and tightness of cleating and securing arrangements shall be checked, especially in anticipation of, and following periods of, severe weather. Hatch covers may only be opened on passage, when necessary, during favourable sea and weather conditions; imminent weather forecasts shall also be considered.

2.9 Operators shall consult the Cargo Securing Manual when planning the loading of containers or other cargo on hatch covers and confirm that they are designed and approved for such loads. Lashings shall not be secured to the covers or coamings unless these are suitable to withstand the lashing forces.

3 Inspection of hatch covers and hatch opening, closing, securing and sealing systems

3.1 Statutory surveys of hatch covers and their coamings are carried out by the Administration as part of the annual survey required by article 14 of the International Convention on Load Lines, 1966, as modified by the 1988 Protocol relating thereto and in accordance with the requirements for Enhanced Surveys contained in resolution A.744(18), as amended. However the continued safe operation is dependent on the shipowner or operator instituting a regular programme of inspections to confirm the state of the hatch covers in between surveys.

3.2 Routines shall be established to perform checks during the voyage, and inspections when the hatch covers are opened.

3.3 Voyage checks shall consist of an external examination of the closed hatch covers and securing arrangements in anticipation of, and after, heavy weather but in any event at least once a week, weather permitting. Particular attention shall be paid to the condition of hatch covers in the forward 25% of the ship’s length, where sea loads are normally greatest.
3.4 The following items, where provided, shall be inspected for each hatch cover set when the hatch covers are opened or are otherwise accessible on each voyage cycle, but need not be inspected more frequently than once per month:

.1 hatch cover panels, including side plates, and stiffener attachments of opened covers for visible corrosion, cracks or deformation;

.2 sealing arrangements of perimeter and cross joints (gaskets, flexible seals on combination carriers, gasket lips, compression bars, drainage channels and non-return valves) for condition and permanent deformation;

.3 clamping devices, retaining bars and cleating for wastage, adjustment, and condition of rubber components;

.4 closed cover locating devices for distortion and attachment;

.5 chain or wire rope pulleys;

.6 guides;

.7 guide rails and track wheels;

.8 stoppers;

.9 wires, chains, tensioners and gypsies;

.10 hydraulic system, electrical safety devices and interlocks; and

.11 end and inter-panel hinges, pins and stools where fitted.

As part of this inspection, the coamings with their plating, stiffeners and brackets shall be checked at each hatchway for visible corrosion, cracks and deformation, especially of the coaming tops and corners, adjacent deck plating and brackets.

***
ANNEX 13

RESOLUTION MSC.159(78)
(adopted on 21 May 2004)

INTERIM GUIDANCE ON
CONTROL AND COMPLIANCE MEASURES
TO ENHANCE MARITIME SECURITY

THE MARITIME SAFETY COMMITTEE,

RECALLING that regulation XI-2/9 of the International Convention for the Safety of Life at Sea, 1974 (hereinafter referred to as the “Convention”), entitled Control and Compliance Measures, provides for the control of ships already in a port and for the control of ships intending to enter a port of another Contracting Government to the Convention,

RECALLING ALSO that the Conference of Contracting Governments to the Convention which adopted Special Measures to enhance Maritime Security has also adopted, on 12 December 2002, Conference resolution 3 which in operative paragraph 1(c) invited the Organization to consider the need and, if necessary, develop further guidance on control and compliance measures on aspects other than those already addressed in part B of the International Ship and Port Facility Security (ISPS) Code (hereinafter referred to as the “ISPS Code”),

ACKNOWLEDGING the need to supplement the guidance, which is presently provided in paragraphs B/4.29 to B/4.46 of the ISPS Code in relation to the exercise of control and compliance measures envisaged in regulation XI-2/9 of the Convention,

RECOGNIZING that the consistent, uniform and harmonized implementation of the control and compliance measures will contribute towards the enhancement of maritime security,

HAVING CONSIDERED the recommendations of the Sub-Committee on Flag State Implementation at its twelfth session,

1. ADOPTS the Interim Guidance on Control and Compliance Measures to enhance Maritime Security (hereinafter referred to as “the Interim Guidance”) set out in the Annex to this resolution;

2. INVITES SOLAS Contracting Governments, when exercising control and compliance measures pursuant to the provisions of regulation XI-2/9 of the Convention to apply the aforementioned Interim Guidance;

3. URGES SOLAS Contracting Governments and the industry to submit to the Committee information, observations, comments and recommendations based on the practical experience to be gained through the application of the Interim Guidance;

4. AGREES to review and revise as necessary, at an appropriate time, the Interim Guidance in the light of the practical experience to be gained through its application.
ANNEX

INTERIM GUIDANCE ON
CONTROL AND COMPLIANCE MEASURES
TO ENHANCE MARITIME SECURITY

CHAPTER 1

INTRODUCTION

PURPOSE

1.1 This document is intended to provide basic guidance on the conduct of control and compliance measures, in accordance with the provisions of regulation XI-2/9 of the International Convention for the Safety of Life at Sea, 1974, as amended (hereinafter referred to as “SOLAS”), in order to afford consistency. It is also the goal of this document to assist in the recognition and rectification of perceived deficiencies in the ship’s security plan, its security equipment, its interface with the port facility, or the ship’s personnel. The impact of such perceived deficiencies on the ability of the ship to conform to its security plan and, where clear grounds exist for suspecting that such deficiencies exist, to provide guidance concerning the application of control and compliance measures for ships in port and for ships intending to enter ports.

1.2 Nothing in this Guidance prejudices Contracting Governments to SOLAS (hereinafter referred to as “Contracting Government”) from taking measures having a basis in, and consistent with, international law to ensure the safety or security of persons, ships, port facilities and other property in cases where the ship, although in compliance with SOLAS chapter XI-2 and part A of the International Ship and Port Facility Security Code (hereinafter referred to as the “ISPS Code”), is still considered to present an unacceptable security risk (ISPS Code paragraph B/4.34).

APPLICATION

1.3 This Guidance applies to the exercise of control and compliance measures in respect of ships that are required to comply with SOLAS chapter XI-2 and part A of the ISPS Code.

1.4 Contracting Governments should not give more favourable treatment to ships flying the flag of a State which is not a Contracting Government to SOLAS and not a Party to the 1988 SOLAS Protocol1. Accordingly, the requirements of SOLAS regulation XI-2/9, the guidance provided in part B of the ISPS Code and this Guidance should be applied to those ships, (paragraph B/4.45 of the ISPS Code).

INTRODUCTION TO SOLAS REGULATION XI-2/9

1.5 Under the provisions of SOLAS article I and chapter XI-2 and part A of the ISPS Code, Contracting Governments are responsible for promulgating laws and regulations and for taking

other steps which may be necessary to give SOLAS chapter XI-2 and part A of the ISPS Code full and complete effect so as to ensure that, from the point of view of security, a ship fully complies with the applicable requirements.

1.6 SOLAS regulation XI-2/9 describes the control and compliance measures applicable to ships to which SOLAS chapter XI-2 applies. It is divided into three distinct sections: control of ships already in port; control of ships intending to enter a port of another Contracting Government; and additional provisions applicable to both situations (ISPS Code paragraph B/4.29).

1.7 SOLAS regulation XI-2/9.1, on control of ships in port, implements a system for the control of ships while in the port of another Contracting Government where duly authorized officers of that Contracting Government, have the right to go on board the ship to verify that the required International Ship Security Certificate (ISSC) or an Interim International Ship Security Certificate (Interim ISSC) is in proper order. Then, if there are clear grounds to believe the ship does not comply with the relevant regulations, control measures such as additional inspections or detention may be taken. This system corresponds to the port State control inspections envisaged in SOLAS regulation I/19. SOLAS regulation XI-2/9.1 builds on these provisions and allows for additional measures (including expulsion of a ship from a port to be taken as a control measure) when duly authorized officers have clear grounds for believing that a ship is in non-compliance with the requirements of SOLAS chapter XI-2 or part A of the ISPS Code. SOLAS regulation XI-2/9.3 describes the safeguards that promote fair and proportionate implementation of these additional measures (ISPS Code paragraph B/4.30).

1.8 SOLAS regulation XI-2/9.2 applies control measures to ensure compliance for ships intending to enter a port of another Contracting Government and introduces an entirely different concept of control within SOLAS chapter XI-2, applying to security only, available to a port State. Under this regulation measures may be implemented prior to the ship entering port, to better ensure security. Just as in SOLAS regulation XI-2/9.1, this additional control system is based on the concept of clear grounds for believing the ship does not comply with SOLAS chapter XI-2 or part A of the ISPS Code, and includes safeguards in SOLAS regulation XI-2/9.2.2 and XI-2/9.2.5 as well as in SOLAS regulation XI-2/9.3 (ISPS Code paragraph B/4.31).

1.9 The international law implications of SOLAS regulation XI-2/9 are particularly relevant, and the regulation should be implemented with SOLAS regulation XI-2/2.4 in mind, as the potential exists for situations where either measures will be taken which fall outside the scope of SOLAS chapter XI-2, or where rights of affected ships, outside SOLAS chapter XI-2, should be considered. Thus, SOLAS regulation XI-2/9 does not prejudice the Contracting Government from taking measures having a basis in, and consistent with, international law to ensure the safety or security of persons, ships, port facilities and other property in cases where the ship, although in compliance with SOLAS chapter XI-2 and part A of the ISPS Code, is still considered to present a security risk (ISPS Code paragraph B/4.34).

1.10 The establishment of clear grounds for the application of control measures is based not only on the ship itself but also on interactions with port facilities or with other ships. A ship otherwise compliant with SOLAS chapter XI-2 and part A of the ISPS Code may be subject to appropriate control measures if that ship had interactions with a non-compliant port facility or ship. In deciding whether to impose control measures in such cases, consideration should be given to any special or additional security measures the ship implemented and maintained during
the interaction with the non-compliant port facility or ship to minimize the risk of a security incident (ISPS Code paragraph B/4.33.6).

1.11 It is also possible that, at any time, reliable information may be received concerning a ship in port which establishes clear grounds and results in control measures being immediately applied to the ship without undertaking an inspection of the ship.

1.12 It should be noted that many of the provisions of part A of the ISPS Code require that the guidance given in part B of the ISPS Code, albeit recommendatory, be taken into account. It should also be noted that part B of the ISPS Code is a process that all parties concerned need to go through in order to comply with part A of the ISPS Code. For example, section A/9.4 of the ISPS Code requires that in order for an ISSC to be issued, paragraphs B/8.1 to B/13.8 of the ISPS Code need to have been taken into account (MSC/Circ.1097).

1.13 When a Contracting Government imposes control measures on a ship, the Administration should, without delay, be contacted with sufficient information to enable the Administration to fully liaise with the Contracting Government (ISPS Code paragraph B/4.35).

1.14 This Guidance addresses the following aspects of the control and compliance measures:

1 training and qualification of duly authorized officers;
2 ships intending to enter a port of another Contracting Government;
3 control of ships in port;
4 more detailed inspection where clear grounds exist;
5 safeguards; and
6 reporting.

DEFINITIONS

1.15 For the purpose of this Guidance:

1 Chapter means a chapter of the Convention.

2 Clear grounds that the ship is not in compliance means evidence or reliable information that the security system and any associated security equipment of the ship does not correspond with the requirements of SOLAS chapter XI-2 or part A of the ISPS Code, taking into account the guidance given in part B of the ISPS Code. Such evidence or reliable information may arise from the duly authorized officer’s professional judgement or observations gained while verifying the ship’s International Ship Security Certificate or Interim International Ship Security Certificate issued in accordance with part A of the ISPS Code or from other sources. Even if a valid certificate is on board the ship, the duly authorized officers may still have clear grounds for believing that the ship is not in compliance based on their professional judgment (ISPS Code paragraph B/4.32).

3 Convention means the International Convention for the Safety of Life at Sea, 1974 as amended.
.4 *Duly authorized officer* means an official of the Contracting Government duly authorized by that Government to carry out control and compliance measures in accordance with the provisions of SOLAS regulation XI-2/9.

.5 *ISPS Code* means the International Ship and Port Facility Security (ISPS) Code as defined in regulation XI-2/1.1.12.

.6 *Organization* means the International Maritime Organization.

.7 *Regulation* means a regulation of the Convention.

1.16 Terms not otherwise defined in this part shall have the same meaning as the meaning attributed to them in chapters I and XI-2 and in part A of the ISPS Code.

**RELATED MATERIAL**

1.17 The Organization has adopted various performance standards, guidelines, directives and interpretations relating to chapter XI-2 and the ISPS Code which are listed in Appendix 1 and it is recommended that duly authorized officers familiarize themselves with their contents.
CHAPTER 2

QUALIFICATIONS AND TRAINING OF DULY AUTHORIZED OFFICERS

2.1 Duly authorized officers are appointed by a Contracting Government to exercise control and compliance measures under the provisions of regulation XI-2/9.

2.2 It is certain that the professional backgrounds of duly authorized officers will vary. However, duly authorized officers need to have appropriate knowledge of the provisions of chapter XI-2 and of the ISPS Code, of shipboard operations and need to be appropriately qualified and trained to the level required by the functions that they are authorized to carry out.

2.3 Duly authorized officers should also be able to communicate with the master, the ship security officer and other officers on the ship in English.

2.4 Duly authorized officers should receive appropriate training to ensure proficiency in safety procedures when boarding or on board a ship, particularly if at sea, including emergency evacuation procedures and procedures for entering enclosed spaces.

2.5 Duly authorized officers when on board a ship should comply with the security measures and procedures in place on the ship unless such measures are incompatible with the specific control measures or steps.

2.6 Duly authorized officers should refrain from attempting to breach the security of a ship.

2.7 Duly authorized officers should carry, and present when boarding a ship, a photographic identification document indicating their authorization. Procedures should be in place to allow verification of the identity of those who have been appointed as duly authorized officers.

2.8 Duly authorized officers should periodically undergo training in order to update their knowledge. Training seminars or courses should be held with such frequency so as to ensure the update of their knowledge with respect to legal instruments related to control and compliance measures to enhance maritime security.

2.9 Duly authorized officers may be assisted, when appropriate, by persons with specialized expertise appointed by the Contracting Governments. Such persons should receive appropriate training, as outlined above.
CHAPTER 3

SHIPS INTENDING TO ENTER A PORT
OF ANOTHER CONTRACTING GOVERNMENT

INFORMATION TO BE PROVIDED BY SHIPS PRIOR TO ENTRY INTO PORT

3.1 The Contracting Government may, in ensuring compliance with chapter XI-2, require that ships intending to enter its ports provide the following information (regulation XI-2/9.2.1):

1. confirmation that the ship possesses a valid ISSC or a valid Interim ISSC and the name of its issuing authority\(^2\) (regulation XI-2/9.2.1.1);

2. the security level at which the ship is currently operating (regulation XI-2/9.2.1.2.);

3. the security level at which the ship operated in the previous ten\(^3\) calls at port facilities (regulation XI-2/9.2.1.3);

4. any special or additional security measures that were taken by the ship in any previous port where it has conducted a ship/port interface within the timeframe specified paragraph 3.1.3 above (regulation XI-2/9.2.1.4). For example, a ship may provide, or be requested to provide, information that might be recorded in the ship’s log book or in another document such as the ship’s security log book\(^4\), related to:

1. measures taken while visiting a port facility located in the territory of a State which is not a Contracting Government, especially those measures that would normally have been provided by port facilities located in the territories of Contracting Governments (ISPS Code paragraph B/4.37.1); and

2. any Declarations of Security that were entered into with port facilities or other ships (ISPS Code paragraph B/4.37.2);

5. confirmation that appropriate ship security procedures were maintained during any ship-to-ship activity during the period covered by its previous ten calls at port facilities (regulation XI-2/9.2.1.5). For example, a ship may provide, or be requested to provide, information related to:

\(^{2}\) Issuing authority means the Administration, the recognized security organization who acting on behalf of the Administration, or the Contracting Government who at the request of the Administration, has issued the certificate.

\(^{3}\) The Maritime Safety Committee, at its seventy-eighth session, agreed that the requirements under regulations XI-2/9.2.1.3 to .5 to keep records of past calls at port facilities and ship-to-ship activities should commence on 1 July 2004 and only apply to calls made, or activities undertaken, on or after that date (MSC/Circ.1111).

\(^{4}\) Industry practices recommend that Ship Security Officers maintain a ship’s security log book wherein, inter alia, security incidents, ship-to-ship activities and other pertinent security related information is recorded.
.1 measures taken while engaged in a ship-to-ship activity with a ship flying the flag of a State which is not a Contracting Government, especially those measures that would normally have been provided by ships flying the flag of Contracting Governments (ISPS Code paragraph B/4.38.1);

.2 measures taken while engaged in a ship-to-ship activity with a ship flying the flag of a Contracting Government but not required to comply with the provisions of chapter XI-2 and part A of the ISPS Code, such as a copy of any security certificate issued to that ship under other provisions (ISPS Code paragraph B/4.38.2.); and

.3 in the event that persons or goods rescued at sea are on board, all known information about such persons or goods, including their identities when known and the results of any checks run on behalf of the ship to establish the security status of those rescued. It is not the intention of chapter XI-2 or part A of the ISPS Code to delay or prevent the delivery of those in distress at sea to a place of safety. It is the sole intention of chapter XI-2 and part A of the ISPS Code to provide States with enough appropriate information to maintain their security integrity (ISPS Code paragraph B/4.38.3);

.6 other practical security related information (but not details of the ship security plan) (regulation XI-2/9.2.1.6). For example, a ship may provide, or be requested to provide, information related to:

.1 information contained in the Continuous Synopsis Record (CSR) (ISPS Code paragraph B/4.39.1);

.2 location of the ship at the time the report is made (ISPS Code paragraph B/4.39.2);

.3 expected time of arrival of the ship in port (ISPS Code paragraph B/4.39.3);

.4 crew list⁵ (ISPS Code paragraph B/4.39.4);

.5 general description of cargo aboard the ship⁶; (ISPS Code paragraph B/4.39.5);

.6 passenger list⁷ (ISPS Code paragraph B/4.39.6);

.7 information regarding who is responsible for appointing the members of the crew or other persons currently employed or engaged on board the ship in any capacity on the business of that ship (ISPS Code paragraph B/4.39.7 and regulation XI-2/5);

⁵ IMO Crew List – IMO FAL Form 5
⁶ IMO Cargo Declaration – IMO FAL Form 2
⁷ IMO Passenger List – IMO FAL Form 6
.8 information regarding who is responsible for deciding the employment of the ship (ISPS Code paragraph B/4.39.7 and regulation XI-2/5); and

.9 in cases where the ship is employed under the terms of charter party(ies), who are the parties to such charter party(ies). (ISPS Code paragraph B/4.39.7 and regulation XI-2/5).

ASSESSMENT OF INFORMATION RELATED TO SHIPS PRIOR TO ENTRY INTO PORT

3.2 Every ship to which chapter XI-2 applies intending to enter the port of another Contracting Government shall provide the information described in regulation XI-2/9.2.1 on the request of a duly authorized officer of that Government. The master may decline to provide such information on the understanding that failure to do so may result in denial of entry into port (regulation XI-2/9.2.2). In the event that the entry of a ship into port is denied, the Contracting Government shall forthwith inform in writing the Administration specifying that the entry of the ship into port has been denied and the reasons thereof. The Contracting Government shall also notify the recognized security organization, which issued the certificate relating to the ship concerned and the Organization (regulation XI-2/9.3.1).

3.3 If the assessment of the available information related to the ship does not establish clear grounds for believing that the ship is in non-compliance with the requirements of chapter XI-2 or part A of the ISPS Code, the Contracting Government may allow the ship to enter port.

CLEAR GROUNDS ESTABLISHED FROM THAT ASSESSMENT

3.4 If the assessment of the available information relating to the ship establishes clear grounds for believing that the ship is in non-compliance with the requirements of chapter XI-2 or part A of the ISPS Code, the Contracting Government shall attempt to establish communication with and between the ship and the Administration and/or the recognized security organization in order to rectify the non-compliance (regulation XI-2/9.2.4).

3.5 If communication under paragraph 3.4 above does not result in rectification, or if the Contracting Government has clear grounds otherwise for believing that the ship is in non-compliance with the requirements of chapter XI-2 or part A of the ISPS Code, the Contracting Government may:

.1 allow the ship entry into port knowing that clear grounds exist;

.2 require the ship to proceed to a location specified in the territorial sea or internal waters of that Contracting Government (regulation XI-2/9.2.5.2);

.3 inspect the ship in its territorial waters (regulation XI-2/9.2.5.3), prior to entry into port;

.4 deny the ship entry into port (regulation XI-2/9.2.5.4).

3.5.1 Paragraphs 3.8 to 3.8.4.1 below outline the action which may be taken when clear grounds exist.
3.6 Prior to initiating any such steps, the ship shall be informed by the Contracting Government of its intentions. Upon this information the master may withdraw the intention to enter that port. In such cases, this regulation XI-2/9 shall not apply (regulation XI-2/9.2.5).

**EXAMPLES OF CLEAR GROUNDS**

3.7 Examples of possible clear grounds which may be determined prior to a ship entering port include:

1. evidence or reliable information that serious deficiencies exist in the security equipment, documentation or arrangements required by chapter XI-2 and part A of the ISPS Code (ISPS Code paragraph B/4.33.2);

2. a report or complaint which, in the professional judgment of the duly authorized officer, contains reliable information clearly indicating that the ship does not comply with the requirements of chapter XI-2 or part A of the ISPS Code (ISPS Code paragraph B/4.33.3);

3. evidence or reliable information that the ship has embarked persons, or loaded stores or goods at a port facility or from another ship where either the port facility or the other ship is in violation of chapter XI-2 or part A of the ISPS Code, and the ship in question has not completed a Declaration of Security, nor taken appropriate, special or additional security measures or has not maintained appropriate ship security procedures (ISPS Code paragraph B/4.33.6);

4. evidence or reliable information that the ship has embarked persons, or loaded stores or goods at a port facility or from another source (e.g., another ship or helicopter transfer) where either the port facility or the other source is not required to comply with chapter XI-2 or part A of the ISPS Code, and the ship has not taken appropriate, special or additional security measures or has not maintained appropriate security procedures (ISPS Code paragraph B/4.33.7);

5. if the ship holds a subsequent, consecutively issued Interim International Ship Security Certificate as described in section A/19.4 of the ISPS Code, and if, in the professional judgment of a duly authorized officer, one of the purposes of the ship or a Company in requesting such a certificate is to avoid full compliance with chapter XI-2 and part A of the ISPS Code beyond the period of the initial interim certificate as described in section A/19.4.4 of the ISPS Code (ISPS Code paragraph B/4.33.8);

6. a ship’s failure to provide the information requested.

**ACTIONS TO BE TAKEN WHEN CLEAR GROUNDS EXIST**

3.8 When clear grounds exist, a Contracting Government may take action as described in paragraphs 3.8.1 to 3.8.4.1 below.
3.8.1 Allow ship into port knowing clear grounds exist  
(paragraph 3.5.1 of this Guidance)

3.8.1.1 The Contracting Government may allow the ship to enter port. In such cases, regulation XI-2/9.1.3 requires the Contracting Government to impose one or more control measures. These include:

.1 inspection of the ship;
.2 delaying the ship;
.3 detention of the ship;
.4 restrictions of operations including movement within the port; and/or
.5 additional or alternative lesser administrative or corrective measures.

3.8.1.2 Inspection of a ship may be conducted in accordance with the procedures for a more detailed inspection, as described in chapter 5 of this Guidance.

3.8.1.3 Ultimately the ship could be expelled from port. Expulsion from port shall only be imposed where the duly authorized officer(s) have clear grounds that the ship poses an immediate threat to the security or safety of persons, or of ships or other property and there are no other appropriate means for removing that threat (regulation XI-2/9.3.3).

3.8.2 Require that the ship proceed to specified location  
(paragraph 3.5.2 of this Guidance)

3.8.2.1 The Contracting Government may also require that the ship proceed to a location specified in the territorial sea or internal waters of the Contracting Government in order to enable the inspection of the ship.

3.8.2.2 Inspection of a ship may be conducted in accordance with the procedures for a more detailed inspection, as described in chapter 5 of this Guidance.

3.8.2.3 Ultimately the ship could be denied entry into port.

3.8.3 Inspect vessel prior to entry into port  
(paragraph 3.5.3 of this Guidance)

3.8.3.1 The decision to inspect a ship outside port may depend on assessment of the security threat posed by that ship.

3.8.3.2 Inspection of a ship prior to entry into port on the basis of the assessed security threat, may be conducted in accordance with the procedures for a more detailed inspection, as described in chapter 5 of this Guidance.

3.8.3.3 Ultimately the ship could be denied entry into port.
3.8.4 Deny the entry of the ship into port  
(paragraph 3.5.4 of this Guidance)

3.8.4.1 Denial of entry into port shall only be imposed when the duly authorized officer(s) have clear grounds to believe that the ship poses an immediate threat to the security or safety of persons, ships or other property and there are no other appropriate means for removing that threat.
CHAPTER 4
CONTROL OF SHIPS IN PORT

GENERAL

4.1 Regulation XI-2/9.1.1 provides that every ship to which chapter XI-2 applies is subject to control when in a port of another Contracting Government by duly authorised officers, who may be the same as those carrying out the functions of regulation I/19. Such control shall be limited to verifying that there is onboard a valid International Ship Security Certificate (ISSC) or a valid Interim International Ships Security Certificate (Interim ISSC) issued under the provisions of part A of the ISPS Code, which if valid shall be accepted, unless there are clear grounds for believing that the ship is not in compliance with the requirements of chapter XI-2 or part A of the ISPS Code.

4.2 Therefore, in cases where no clear grounds are established before the ship enters port, the ship may still be subject to control under the provisions of regulation XI-2/9.1.1. This may be carried out in conjunction with the port State control inspections conducted under the provisions of regulation I/19 and of resolution A.787(19) entitled Procedures for Port State Control, as amended by resolution A.881(21) entitled Amendments to the Procedures for Port State Control.

GENERAL SECURITY ASPECTS

4.3 When visiting a ship for the purposes of regulation XI-2/9.1.1, the duly authorized officer may, in order to observe and gain a general impression of the overall security arrangements of the ship, consider the following aspects:

.1 while approaching and boarding the ship and moving around the ship take note of the specific security aspects described in paragraphs 4.4.1 to 4.4.12 below, taking into account the security level, or levels, the ship and the port facility are operating at. Duly authorized officers should only consider those aspects which arise during the course of their normal business on board;

.2 check that the ISSC or the Interim ISSC is on board, valid and has been issued by the Administration, a recognized security organization authorized by it or by another Contracting Government at the request of the Administration;

.3 check that the security level at which the ship is operating is at least that set by the Contracting Government for the port facility (regulation XI-2/4.3);

.4 identifying the ship security officer;

.5 when checking other documentation, ask for evidence that security drills have been carried out at appropriate intervals and seek information on any exercise involving the ship;
.6 check the records of the last ten\(^8\) calls at port facilities (SOLAS regulation XI-2/9.2.1), including the records of any ship-to-ship activities that took place during this period, which should include for each case:

.1 the security level at which the ship operated (regulation XI-2/9.2.1.3);

.2 any special or additional security measures that were taken (regulation XI-2/9.2.1.4); and

.3 that appropriate ship security measures were maintained (regulation XI-2/9.2.1.5), including the Declaration of Security, where issued;

.7 assess whether key members of the ship’s security personnel are able to communicate effectively with each other on security-related matters.

**SPECIFIC SECURITY ASPECTS**

4.4 The specific security aspects listed in paragraphs 4.4.1 to 4.4.12 below are not intended to be used as a checklist. Consideration of any of these aspects is intended to enable the duly authorized officer to decide whether clear grounds exist. However, duly authorized officers are expected to exercise their professional judgment, taking into account the security level, or levels, the ship and the port facility are operating at and is not limited by the specific security aspects listed below. Non-compliance with one or more particular aspect may not necessarily constitute a failure to comply with the mandatory requirements of chapter XI-2 or part A of the ISPS Code.

**Access to the ship when in port**

4.4.1 For ships at security level 1, considerations may include:

.1 Is there some form of control exercised by the ship on its access points? (ISPS Code section A/7.2.2).

.2 Is it noticeable that the identity of all persons seeking to board the ship is checked? (ISPS Code paragraph B/9.14.1).

4.4.2 Additionally for passenger ships at security level 1, if these aspects are observable when boarding the ship, considerations may include:

.1 In liaison with the port facility, have designated secure areas been established for searching? (ISPS Code paragraph B/9.14.2).

.2 Are checked persons and their personal effects segregated from unchecked persons and their effects? (ISPS Code paragraph B/9.14.4).

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\(^8\) The Maritime Safety Committee, at its seventy-eighth session, agreed that the requirements under regulations XI-2/9.2.1.3 to .5 to keep records of past calls at port facilities and ship-to-ship activities should commence on 1 July 2004 and only apply to calls made, or activities undertaken, on or after that date (MSC/Circ.1111).
.3 Are embarking passengers segregated from disembarking passengers? (ISPS Code paragraph B/9.14.5).

.4 Has access been secured to unattended spaces adjoining areas to which passengers and visitors have access? (ISPS Code paragraph B/9.14.7).

4.4.3 For ships at security level 2, if the following aspects are observable while on board, considerations may include:

.1 Has the number of access points been limited? (ISPS Code paragraph B/9.16.2).

.2 Have steps been taken to deter waterside access to the ship, which may be implemented in conjunction with the port facility? (ISPS Code paragraph B/9.16.3).

.3 Has a restricted area on the shore-side of the ship been established, which may be implemented in conjunction with the port facility? (ISPS Code paragraph B/9.16.4).

.4 Are visitors escorted on the ship? (ISPS Code paragraph B/9.16.6).

.5 Have full or partial searches of the ship been carried out? (ISPS Code paragraph B/9.16.8).

.6 Have any additional security briefings been carried out? (ISPS Code paragraph B/9.16.7).

Access to restricted areas

4.4.4 For ships at security level 1, if the following aspects are observable while on board, considerations may include:

.1 Are restricted areas marked? (ISPS Code paragraph B/9.20).

.2 Are the bridge and engine room capable of being locked or secured? (ISPS Code paragraph B/9.21.1).

.3 Are the bridge and engine room locked or is access otherwise controlled (e.g. by being manned or using surveillance equipment to monitor the areas)? (ISPS Code paragraph B/9.22.2).

.4 Are doors to restricted areas locked (e.g. steering gear, machinery spaces, air conditioning plants, etc.)? (ISPS Code paragraphs B/9.21.1 to B/9.21.9).

4.4.5 Additionally for passenger ships at security level 2, have restricted areas been established adjacent to access points in order to avoid a large number of persons congregating in those areas? (ISPS Code paragraph B/9.23.1).
Monitoring the security of the ship

4.4.6 For ships at security level 1, if the following aspects\(^9\) are observable while on board, considerations may include:

.1 Are deck watches in place during your visit or is surveillance equipment being used to monitor the ship? (ISPS Code paragraph B/9.42.2).

.2 Can the ship monitor both landward and seaward approaches? (ISPS Code paragraphs B/9.42.2, B/9.46.1 and B/9.46.2).

4.4.7 For ships at security level 2, if the following aspects\(^10\) are observable while on board, considerations may include:

.1 If surveillance equipment is being used is it being monitored at frequent intervals? (ISPS Code paragraph B/9.47.2).

.2 Have additional personnel been dedicated to guard and patrol restricted areas in place? (ISPS Code paragraph B/9.47.3).

Delivery of ship’s stores

4.4.8 For ships at security level 1, if the following aspects\(^11\) are observable while on board, considerations may include:

.1 Are ship’s stores being checked before being loaded for signs that they have been tampered or interfered with? (ISPS Code paragraph B/9.33.3).

.2 Are checks made to ensure stores match the order prior to being loaded? (ISPS Code paragraph B/9.35.1).

.3 Are stores securely stored once loaded? (ISPS Code paragraph B/9.35.2).

Handling of cargo

4.4.9 Checking of cargo by the ship may be undertaken by:

.1 visual and physical examination; and

.2 using scanning/detection equipment, mechanical devices, or dogs;

bearing in mind that arrangements may have been made for checking and sealing of cargo ashore.

4.4.10 For cargo ships, including car carriers, ro-ro and passenger ships at security level 1, if the following aspects\(^12\) are observable while on board, considerations may include:

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\(^9\) Having regard to the security measures in place at the port facility.

\(^10\) Having regard to the security measures in place at the port facility.

\(^11\) Having regard to the security measures in place at the port facility.

\(^12\) Having regard to the security responsibilities of the port facility.
.1 Is cargo and are cargo transport units and cargo spaces being checked prior to, and during, cargo handling operations? (ISPS Code paragraph B/9.27.1).

.2 Is cargo being checked against its documentation? (ISPS Code paragraph B/9.27.2).

.3 Are vehicles subject to search prior to loading? (ISPS Code paragraph B/9.27.3).

.4 Are seals, and other anti-tampering methods, being checked? (ISPS Code paragraph B/9.27.4).

4.4.11 For cargo ships, including car carriers, ro-ro and passenger ships at security level 2, if the following aspects\(^\text{13}\) are observable while on board, considerations may include:

.1 Is detailed checking of cargo, cargo transport units and cargo spaces being undertaken? (ISPS Code paragraph B/9.30.1).

.2 Are detailed checks taking place to ensure only intended cargo is being loaded? (ISPS Code paragraph B/9.30.2).

.3 Are vehicles being searched more intensively prior to loading? (ISPS Code paragraph B/9.30.3).

.4 Are there frequent and detailed checks of seals and other anti-tampering methods? (ISPS Code paragraph B/9.30.4).

**Handling of unaccompanied baggage**

4.4.12 Unaccompanied baggage may be screened and/or searched by either the ship or the port facility. The following considerations apply if the screening/searching is being undertaken by the ship:

.1 At security level 1, if observable while on board, is unaccompanied baggage being screened and/or searched? (ISPS Code paragraph B/9.39).

.2 At security level 2, if observable while on board, is all unaccompanied baggage being screened and/or searched? (ISPS Code paragraph B/9.40).

**Establishment of clear grounds**

4.5 Examples of possible clear grounds under regulations XI-2/9.1 and XI-2/9.2 may include, when relevant:

.1 evidence from a review of the ISSC or the Interim ISSC that it is not valid or it has expired (ISPS Code paragraph B/4.33.1);

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\(^{13}\) Having regard to the security responsibilities of the port facility.
.2 evidence or reliable information that serious deficiencies exist in the security equipment, documentation or arrangements required by chapter XI-2 and part A of the ISPS Code (ISPS Code paragraph B/4.33.2);

.3 a report or complaint which, in the professional judgment of the duly authorized officer, contains reliable information clearly indicating that the ship does not comply with the requirements of chapter XI-2 or part A of the ISPS Code (ISPS Code paragraph B/4.33.3);

.4 evidence or observation gained by a duly authorized officer using professional judgment that the master or ship’s personnel are not familiar with essential shipboard security procedures or cannot carry out drills related to the security of the ship or that such procedures or drills have not been carried out (ISPS Code paragraph B/4.33.4);

.5 evidence or observation gained by the duly authorized officer using professional judgment that key members of the ship’s personnel are not able to establish proper communication with any other key members of ship’s personnel with security responsibilities on board the ship (ISPS Code paragraph B/4.33.5);

.6 evidence or reliable information that the ship has embarked persons, or loaded stores or goods at a port facility or from another ship where either the port facility or the other ship is in violation of chapter XI-2 or part A of the ISPS Code, and the ship in question has not completed a Declaration of Security, nor taken appropriate, special or additional security measures or has not maintained appropriate ship security procedures (ISPS Code paragraph B/4.33.6);

.7 evidence or reliable information that the ship has embarked persons, or loaded stores or goods at a port facility or from another source (e.g., another ship or helicopter transfer) where either the port facility or the other source is not required to comply with chapter XI-2 or part A of the ISPS Code, and the ship has not taken appropriate, special or additional security measures or has not maintained appropriate security procedures (ISPS Code paragraph B/4.33.7); and

.8 if the ship holds a subsequent, consecutively issued Interim ISSC as described in section A/19.4 of the ISPS Code, and if, in the professional judgment of an officer duly authorized, one of the purposes of the ship or a Company in requesting such a certificate is to avoid full compliance with chapter XI-2 and part A of the ISPS Code beyond the period of the initial Interim ISSC as described in section A/19.4.4 of the ISPS Code (ISPS Code paragraph B/4.33.8).

**ACTION TO BE TAKEN WHEN CLEAR GROUNDS EXIST**

4.6 When clear grounds exist, a more detailed inspection may be conducted in accordance with the procedures for a more detailed inspection, as described in chapter 5 of this Guidance.

4.7 When deciding on proportionate control measures following an inspection the duly authorized officer should consider the degree to which the ship is able to:
.1 maintain communication with the port facility;

.2 prevent unauthorized access to the ship and its restricted areas; and

.3 prevent the introduction of unauthorized weapons, incendiary devices or explosives to the ship.

4.8 The duly authorized officer shall discuss the items indicating non-compliance with the master and/or ship security officer, and endeavour to ensure the rectification of all non-compliant items. If the master or ship security officer are unable to rectify the non-compliance to the satisfaction of the duly authorized officer, that officer may:

.1 delay the ship’s departure until the non-compliance is rectified (regulation XI-2/9.1.3);

.2 restrict ship operations until the non-compliance is rectified when the ship would present an especially serious security hazard if it were to remain in its present location or if it were to continue cargo operations, and the non-compliant items can be rectified in another less hazardous condition or location. Restriction of ship operations may include directing the ship to an alternate location within the port, modification or discontinuing of cargo operations, or expulsion of the ship from port (regulation XI-2/9.1.3); or

.3 detain the ship until non-compliant items are rectified when the ship presents an especially serious threat to the security or safety of persons, to the ship, or to other property, and restriction of operations is insufficient to rectify the non-compliant items (regulation XI-2/9.1.3).

4.9 Such control measures may additionally or alternatively, include other lesser administrative or corrective measures (regulation XI-2/9.1.3).

4.10 Expulsion from port shall only be imposed when there are clear grounds that the ship poses an immediate threat to the security or safety of persons, or of ships or other property, and there are no other appropriate means for removing that threat (regulation XI-2/9.3.3).
CHAPTER 5

MORE DETAILED INSPECTION
WHERE CLEAR GROUNDS EXIST

GENERAL

5.1 When the duly authorized officer has clear grounds that the ship does not comply with the provisions of chapter XI-2 and of part A of the ISPS Code, or that the master or the ship’s personnel is not familiar with essential shipboard security measures and procedures, a more detailed inspection as described in paragraphs 5.2 to 5.6 below, may be carried out. When carrying out a more detailed inspection, the duly authorized officer should notify the master. However, it should be noted that non-compliance with any topic referenced to part B of the ISPS Code may not necessarily constitute a failure to comply with chapter XI-2 or part A of the ISPS Code.

MORE DETAILED INSPECTION

5.2 The more detailed inspection may include:

.1 Can the master provide documented evidence of his/her responsibilities and authority, which must include his/her overriding authority? (ISPS Code section A/6.1).

.2 Has a ship security officer been designated and does that individual understand his/her responsibilities under the ship security plan? (ISPS Code section A/12.1).

.3 Is the ship security plan in the working languages of the ship? If the plan is not in English, French or Spanish, is the version translated into one of those languages? (ISPS Code section A/9.4).

.4 Does the ship’s personnel have the capability to monitor the ship (including cargo areas), restricted areas on board, and areas surrounding the ship? (ISPS Code paragraph B/9.42).

.5 Are members of the ship’s personnel satisfactorily performing all ship security duties, and are they aware of security communication procedures? (ISPS Code sections A/7.2.1 and A/7.2.7).

.6 Is access to the ship controlled, including the embarkation of persons and their effects? (ISPS sections A/7.2.2 and A/7.2.3). Are there means to identify those persons allowed access to the ship? (ISPS Code paragraph B/9.11).

.7 Does the ship’s personnel have the capability to supervise the handling of cargo and ship’s stores? (ISPS Code section A/7.2.6).

.8 Can the ship’s officers identify the ship security officer? (ISPS Code section A/9.4.13).
.9 Can the ship’s officers identify the company security officer? (ISPS Code section A/9.4.14).

.10 Has the ship maintained records of training, drills and exercises? (ISPS Code section A/10.1.1).

.11 Has the ship maintained records of security level changes? (ISPS Code section A/10.1.4).

.12 If a security drill has been witnessed, are members of the ship’s personnel familiar with their duties and the proper use of ship’s security equipment? The duly authorized officer should consult with the master and ship security officer as to the proper type and location of drills, taking into account the ship type, ship personnel changes, and port facilities to be visited. Such drills should, as far as practicable, be conducted as if there was an actual security threat and may include (ISPS Code section A/13.4 and paragraphs B/13.5 and B/13.6):

.1 the response to a security threat or security incident;
.2 the response to a change to ship security level;
.3 detection of unauthorized access, including stowaways; and
.4 other incidents appropriate to the nature of identified clear grounds of non-compliance.

.13 Are key members of the ship’s personnel able to communicate with each other, port facilities and the company security officer? (ISPS Code paragraph B/9.2.3).

.14 Is the ship capable of receiving notices from Contracting Governments on changes in security levels? (regulation XI-2/3 and XI-2/7).

.15 Have assurances been received that the ship is capable of initiating and transmitting a ship-to-shore security alert? (regulation XI-2/6).

.16 Has the ship security officer been appropriately trained, and does he/she have adequate knowledge of the ship security plan and procedures, the ship’s layout, and the operation of ship security equipment and systems? (ISPS Code section A/13.2 and paragraphs B/13.1 and B/13.2).

.17 Have those members of the shipboard personnel with specific security duties and responsibilities sufficient knowledge and ability to perform their assigned duties? Do they understand their responsibilities for ship security as described in the ship security plan? (ISPS Code section A/13.3 and paragraph B/13.3).

.18 Through direct observation, is any security equipment installed aboard the ship, such as motion detectors, surveillance systems, scanning equipment, lighting and alarms, functioning properly?
INSPECTION OF SHIP SECURITY PLAN

5.3 Where the only means to verify or rectify the non-compliance is to review the relevant requirements of the ship security plan, limited access to specific sections of the plan relating to the non-compliance is exceptionally allowed. Requests for access to specific sections of the plan should include details of the non-compliance to be verified or rectified (ISPS Code sections A/9.8 and A/9.8.1).

5.4 The following sections of the ship security plan can only be inspected by a duly authorized officer with the consent of the Contracting Government whose flag the ship is entitled to fly or of the master of the ship (ISPS Code section A/9.8.1):

<table>
<thead>
<tr>
<th>Provisions of Plan which may be inspected with consent of the Contracting Government whose flag the ship is entitled to fly or of the master of the ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisions of Plan</td>
</tr>
<tr>
<td>Prevention of introduction of non-authorized articles</td>
</tr>
<tr>
<td>Prevention of unauthorized access to the ship</td>
</tr>
<tr>
<td>Evacuation of the ship</td>
</tr>
<tr>
<td>Auditing security activities</td>
</tr>
<tr>
<td>Training, drills and exercises</td>
</tr>
<tr>
<td>Interfacing with port facility security activities</td>
</tr>
<tr>
<td>Review of ship security plan</td>
</tr>
<tr>
<td>Reporting security incidents</td>
</tr>
<tr>
<td>Identification of the ship security officer</td>
</tr>
<tr>
<td>Identification of the company security officer</td>
</tr>
<tr>
<td>Frequency of testing or calibration of security equipment</td>
</tr>
<tr>
<td>Security of Ship Security Plan</td>
</tr>
<tr>
<td>Security activities not covered by ISPS code</td>
</tr>
</tbody>
</table>

5.5 The following provisions of the ship security plan are considered as confidential information and cannot be subject to inspection by a duly authorized officer unless otherwise agreed with the Contracting Government whose flag the ship is entitled to fly (ISPS Code section A/9.8.1):

<table>
<thead>
<tr>
<th>Provisions of Plan which may be inspected ONLY with the consent of Contracting Government whose flag the ship is entitled to fly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisions of Plan</td>
</tr>
<tr>
<td>Restricted areas</td>
</tr>
<tr>
<td>Responding to security threats or breaches of security, including frequency of inspection data</td>
</tr>
<tr>
<td>Responding to any security instructions at security level 3</td>
</tr>
<tr>
<td>Duties of those assigned security responsibilities</td>
</tr>
<tr>
<td>Procedures for maintenance of security equipment</td>
</tr>
<tr>
<td>Ship security alert system</td>
</tr>
</tbody>
</table>
5.6 The duly authorized officer shall continue discussions on those items indicating non-compliance with the master and/or ship security officer, and endeavour to ensure the rectification of all non-compliant items.

CONTROL MEASURES

5.7 When there are clear grounds, as reflected in paragraph 4.5, the duly authorized officer may impose further control measures as outlined in paragraphs 4.6 to 4.10.

5.8 Such control measures may additionally or alternatively include other lesser administrative or corrective measures (regulation XI-2/9.1.3).
CHAPTER 6

SAFEGUARDS

GENERAL

6.1 In exercising control and compliance measures, the duly authorized officer should ensure that any control measures or steps imposed are proportionate. Such measures or steps should be reasonable and of the minimum severity and duration necessary to rectify or mitigate the non-compliance (ISPS Code paragraph B/4.43).

6.2 When duly authorized officers exercise control and compliance measures:
   .1 all possible efforts shall be made to avoid a ship being unduly detained or delayed. If a ship is thereby unduly detained, or delayed, it shall be entitled to compensation for any loss or damage suffered (regulation XI-2/9.3.5); and
   .2 necessary access to or disembarkation from the ship shall not be prevented for emergency or humanitarian reasons and for security purposes (regulation XI-2/9.3.5).

6.3 The control measures and the steps referred to in regulation XI-2/9 and in this Guidance shall only be imposed until the non-compliance giving rise to the control measures or steps has been corrected to the satisfaction of the duly authorized officer, taking into account actions proposed by the ship or the Administration, if any (regulation XI-2/9.3.4).

UNRELIABLE SOURCES OF INFORMATION

6.4 Should control measures or steps initiated on the basis of evidence or information received from other sources fail to establish non-compliance, the Contracting Government should evaluate the use of such sources, the motives these sources may have for providing misleading information, and determine whether or not information received from these sources should continue to be considered as ‘reliable’. In cases of clear abuse the Contracting Government should consider further action aimed at curtailing similar instances, possibly co-ordinated with the Administration or the ship, if appropriate.
CHAPTER 7

REPORTING

REPORTS IN RESPECT OF CONTROL OF SHIPS IN PORT

7.1 Duly authorized officers should ensure that, on the conclusion of an inspection of a ship in port, the ship’s master or ship security officer is provided with a report giving the results of the inspection, details of any action taken by the duly authorized officer, and a list of any non-compliances to be rectified by the master, ship security officer or the company. Such reports should be made in accordance with the format set out in Appendix 1 (regulation XI-2/9.3.1).

7.2 When, in the exercise of control and compliance measures, a duly authorized officer inspects, delays, restricts operations, detains or expels a ship from port after clear grounds for non-compliance have been identified, the Contracting Government shall report forthwith by the most expeditious means in writing to the Administration specifying which control measures have been imposed or steps taken and reasons thereof. The Contracting Government shall also provide copies of such report to the recognized security organization, which issues the ship’s ISSC (or the Interim ISSC), and the Organization (regulation XI-2/9.3.1).

7.3 When the ship is denied entry to, or expelled from port, the Contracting Government should notify the relevant authorities of the ship’s next port of call, if known, and any other appropriate coastal States. This notification shall be sent with the appropriate security and confidentiality safeguards (regulation XI-2/9.3.2).

REPORTS IN RESPECT OF SHIPS INTENDING TO ENTER PORT

7.4 When, in the exercise of control and compliance measures, a duly authorized officer has clear grounds that a ship that intends to enter port is non-compliant with chapters XI-2 or part A of the ISPS Code after receiving the information specified in paragraph 3.1 of this Guidance, the duly authorized officer shall attempt to establish communication with and between the ship and the Administration to rectify the identified non-compliant items (regulation XI-2/9.2.4).

7.5 When non-compliance is not rectified through this communication, the duly authorized officer shall notify the ship of the intention to take proportionate steps to rectify those items. After receiving this information, the master may withdraw his/her intention to enter the port (regulation XI-2/9.2.5).

7.6 When, in the exercise of control and compliance measures, a duly authorized officer takes any of the proportionate steps in this Guidance, to rectify non-compliance on a ship intending to enter port, including denial of entry, the Contracting Government shall forthwith inform in writing the Administration specifying which control measures have been imposed or steps taken and reasons thereof. The Contracting Government shall provide copies of such a report to the recognized security organization, which issued the ship’s ISSC (or the Interim ISSC), and the Organization. (regulation XI-2/9.3.1).

14 Specific contact information is available on the ISPS Code database which has been established pursuant to regulation XI-2/13 and is available on the IMO web-site.
APPENDIX 1

RELATED MATERIAL

Resolution MSC.136(76)  Performance standards for a ship security alert system
Resolution MSC.147(77)  Adoption of the Revised performance standards for a ship security alert system
MSC/Circ.1067        Early implementation of the special measures to enhance maritime security
MSC/Circ.1072        Guidance on provision of ship security alert systems
MSC/Circ.1073        Directives for Maritime Rescue Co-ordination Centres (MRCCs) on acts of violence against ships
MSC/Circ.1074        Interim Guidelines for the authorization of RSOs acting on behalf of the Administration and/or Designated Authority of a Contracting Government
MSC/Circ.1097        Guidelines for the implementation of SOLAS chapter XI-2 and the ISPS Code
MSC/Circ.1104        Implementation of SOLAS chapter XI-2 and the ISPS Code
MSC/Circ.1106        Implementation of SOLAS chapter XI-2 and the ISPS Code to port facilities
MSC/Circ.1109        False security alerts and distress/security double alerts
MSC/Circ.1110        Matters related to SOLAS regulations XI-2/6 and XI-2/7
MSC/Circ.1111        Guidance relating to the implementation of SOLAS chapter XI-2 and the ISPS Code
MSC/Circ.1112        Shore leave and access to ships under the ISPS Code
MSC/Circ.1113        Guidance to port State control officers on the non-security related elements of the 2002 SOLAS amendments
Resolution A.955(23)  Amendments to the Principles on safe manning (Resolution A.890(21))
Resolution A.956(23)  Amendments to the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS) (Resolution A.917(22))
Resolution A.959(23)  Format and guidelines for the maintenance of the Continuous Synopsis Record (CSR)

Circular Letter No.2514  Information required from SOLAS Contracting Governments under the provisions of SOLAS regulation XI-2/13

Circular Letter No.2529  Information required from SOLAS Contracting Governments under the provisions of SOLAS regulation XI-2/13.1.1 on communication of a single national contact point

—  IMO/ILO Code of Practice on Security in Ports
APPENDIX 2

REPORT OF THE IMPOSITION OF A CONTROL AND COMPLIANCE MEASURE IN ACCORDANCE WITH INTERIM GUIDANCE ON CONTROL AND COMPLIANCE MEASURES TO ENHANCE MARITIME SECURITY  
(RESOLUTION MSC.159(78))

(Remote authority)        Copy to: Master  
(Address)                  Duly Authorized Officer administrative office  
(Telephone & Fax)          If control measures, other than lesser administrative measures are taken, additional copies of this report shall be provided to:  
                                          Administration   
                                          Recognized security organization   
                                          IMO   
                                          Port State of ship next port call   
                                          (if denied entry or expelled)

1. Name of reporting authority: ___________  2. Date of inspection: ___________________________ 
3. Place of inspection: __________________ 
4. Name of ship: ______________________  5. Flag of ship: ____________________________ 
6. Type of ship: ______________________  7. Call sign: ____________________________ 
8. IMO Number: ______________________  9. Gross tonnage: __________________________ 
10. Year build: _______________________
11. Recognized security organization: _________________________________________________________ 
12. Registered owner (from Continuous Synopsis Record (CSR)): _________________________________ 
13. Registered bareboat charterer, if applicable (from CSR): __________________________________ 
14. Company (from CSR): ___________________________________________________________________
15. ISSC issuing Authority: _______________  16. Dates of issue/expiry: _________________________
17. Ship security level: ___________________  
18. Reason(s) for non-compliance: ____________________________________________________________ 
                                            ___________________________________________________________________
                                            ___________________________________________________________________
                                            ___________________________________________________________________
                                            ___________________________________________________________________
19. Action taken by Duly Authorized Officer:  
                                            ___________________________________________________________________
                                            ___________________________________________________________________

20. Specific control measures taken (marks as follow: “x” actions taken, “-” no actions taken)  
None   
Lesser administrative measures   
More detailed inspection   
Ship departure delayed   
Restricted Ship Operation   
                                        Cargo operation modified or stopped   
                                        Ship directed to other location in port   
Ship detained   
Ship denied entry into port   
Ship expelled from port

21. Corrective action taken by ship or Company: ________________________________________________ 

Issuing office: _______________________________   Duly authorized officer
Name: _______________________________ 
Telephone/Fax: _______________________________   Signature: _______________________________

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ANNEX 14

DRAFT AMENDMENTS TO REGULATION II-1/45 OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER II-1
CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Regulation 45 - Precautions against shock, fire and other hazards of electrical origin

1 The existing test of paragraph 10 is replaced by the following:

“10 No electrical equipment shall be installed in any space where flammable mixtures are liable to collect, e.g. in compartments assigned principally to accumulator batteries, in paint lockers, acetylene stores or similar spaces, unless the Administration is satisfied that such equipment is:

.1 essential for operational purposes;
.2 of a type which will not ignite the mixture concerned;
.3 appropriate to the space concerned; and
.4 appropriately certified for safe usage in the dusts, vapours or gases likely to be encountered.”

2 The following new paragraph 11 is added after existing paragraph 10:

“11 In tankers, electrical equipment, cables and wiring shall not be installed in hazardous locations unless it conforms with standards not inferior to those acceptable to the Organization*. However, for locations not covered by such standards, electrical equipment, cables and wiring which do not conform to the standards may be installed in hazardous locations based on a risk assessment to the satisfaction of the Administration, to ensure that an equivalent level of safety is assured.”

3 Existing paragraph 11 is renumbered as paragraph 12.