

MARITIME SAFETY COMMITTEE
100th session
Agenda item 20

MSC 100/20/Add.1
12 December 2018
Original: ENGLISH

**REPORT OF THE MARITIME SAFETY COMMITTEE ON
ITS ONE HUNDREDTH SESSION**

Attached are annexes 1 to 16 to the report of the Maritime Safety Committee on its one hundredth session (MSC 100/20).

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ANNEX 1

RESOLUTION MSC.453(100)
(adopted on 7 December 2018)

AMENDMENTS TO THE CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS (SPS CODE)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.534(13), by which the Assembly, at its thirteenth session, adopted the Code of Safety for Special Purpose Ships ("the SPS Code"),

RECALLING FURTHER that the Assembly authorized it to amend the SPS Code as may be necessary,

RECALLING amendments to the SPS Code adopted by:

- .1 circular MSC/Circ.446, which became effective on 13 October 1986;
- .2 circular MSC/Circ.478, which became effective on 28 July 1987;
- .3 circular MSC/Circ.739, which became effective on 28 June 1996; and
- .4 resolution MSC.183(79), which became effective on 1 July 2006,

NOTING that it adopted, at its ninety-ninth session, amendments to SOLAS chapter IV and the appendix (Certificates) by resolution MSC.436(99),

HAVING CONSIDERED, at its 100th session, consequential amendments to the Record of Equipment of the SPS Code,

1 ADOPTS amendments to the SPS Code, the text of which is set out in the annex to the present resolution, also incorporating the amendments previously adopted by circular MSC/Circ.739 (which includes the amendments adopted by MSC/Circ.446 and MSC/Circ.478) and resolution MSC.183(79), and the consequential amendments to the Record of Equipment;

2 DETERMINES that the said consequential amendments to the Record of Equipment should become effective on 1 January 2020, in conjunction with the entry into force of amendments to SOLAS chapter IV and the appendix (Certificates) adopted by resolution MSC.436(99).

ANNEX

**AMENDMENTS TO THE CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS (SPS CODE)
(RESOLUTION A.534(13))**

1 The existing text of section 1.2 is amended to read as follows:

"Except as provided in 8.3, the Code applies to every new special purpose ship of not less than 500 gross tonnage. The Administration may also apply these provisions as far as reasonable and practicable to special purpose ships of less than 500 gross tonnage."

2 The existing paragraph 1.3.4 is amended to read as follows:

"1.3.4 Except as provided in 8.3, "special purpose ship" means a mechanically self-propelled ship which, by reason of its function, carries on board more than 12 special personnel including passengers. Special purpose ships to which this Code applies include the following types:

- .1 ships engaged in research, expeditions and survey;
- .2 ships for training of marine personnel;
- .3 whale and fish factory ships not engaged in catching;
- .4 ships processing other living resources of the sea, not engaged in catching; and
- .5 other ships with design features and modes of operation similar to ships referred to in .1 to .4 which in the opinion of the Administration may be referred to this group."

3 The existing chapter 8 is replaced with the following:

"CHAPTER 8 – LIFE-SAVING APPLIANCES"

8.1 The requirements of chapter III of the 1974 SOLAS Convention, as amended, should be applied with the specifications given hereunder.

8.2 A special purpose ship carrying more than 50 special personnel should comply with the requirements contained in chapter III of the 1974 SOLAS Convention for passenger ships engaged in international voyages which are not short international voyages.

8.3 Notwithstanding the provisions of 8.2, sail training ships, whether mechanically self-propelled or not and irrespective of their gross tonnage, carrying more than 50 special personnel (trainees), may in lieu of meeting the requirements of regulations 20.1.1, 20.1.2 or 20.1.3 of chapter III of the 1974 SOLAS Convention:

* All references in this chapter are references to regulations of the 1974 SOLAS Convention, as amended in 1983.

- .1 comply with the requirements of regulation 20.1.5 of chapter III of the 1974 SOLAS Convention including the provision of at least one rescue boat in accordance with regulation 20.2.2 of chapter III; and
- .2 in addition, carry one immersion suit complying with regulation 33 of chapter III of the 1974 SOLAS Convention for each person on board, unless:
 - .1 davits are provided for launching the liferafts; or
 - .2 the ship is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits are unnecessary.

8.4 A special purpose ship carrying not more than 50 special personnel should comply with the requirements contained in chapter III of the 1974 SOLAS Convention for cargo ships other than tankers. Such ships may however carry life-saving appliances in accordance with 8.2, if they comply with the subdivision requirements for ships carrying more than 50 special personnel.

8.5 Regulations 2, 18.3.3, 20.1.2, 20.1.3, 26.1.6, 26.1.7, 45 and 46 of chapter III of the 1974 SOLAS Convention are not applicable to special purpose ships.

8.6 Where in chapter III of the 1974 SOLAS Convention the term "passenger" is used, it should be read to mean "special personnel" for the purpose of this Code."

- 4 The existing chapter 9 is replaced with the following:

"CHAPTER 9 – RADIOCOMMUNICATIONS

Special purpose ships should comply with the provisions of chapter IV of the 1974 SOLAS Convention, as amended."

- 5 The existing "Form of Safety Certificate for Special Purpose Ships" is replaced with the revised form given in the attached appendix which has been supplemented by a "Record of Equipment for Special Purpose Ship Safety Certificate (Form SPS)".

APPENDIX

FORM OF SAFETY CERTIFICATE FOR SPECIAL PURPOSE SHIPS

SPECIAL PURPOSE SHIP SAFETY CERTIFICATE

This Certificate should be supplemented by a Record of Equipment (Form SPS)

(Official seal)

(State)

Issued in compliance with the provisions of the
CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS
under the authority of the Government of

(name of the State)

by

(person or organization authorized)

Particulars of ship*

Name of ship

Distinctive number or letters

Port of registry

Gross tonnage

Sea areas in which ship is certificated
to operate (SOLAS regulation IV/2)

IMO number**

Ship's special purpose

Date on which keel was laid or ship was of a similar
stage of construction or, where applicable, date on
which work for a conversion or an alteration or
modification of a major character was commenced

* Alternatively, the particulars of the ship may be placed horizontally in boxes.

** Refer to the IMO Ship Identification Number Scheme, adopted by the Organization by resolution A.1117(30).

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the requirements of regulation 1.6 of the Code.
- 2 That the survey showed that:
 - 2.1 the ship complied with the provisions of the Code as regards:
 - .1 the structure, main and auxiliary machinery, boilers and other pressure vessels; and
 - .2 the watertight subdivision arrangements and details;
 - 2.2 the ship complied with the provisions of the Code as regards structural fire protection, fire safety systems and appliances, and fire control plans;
 - 2.3 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the provisions of the Code;
 - 2.4 the ship was provided with a line-throwing appliance and radio installations used in life-saving appliances in accordance with the provisions of the Code;
 - 2.5 the ship complied with the provisions of the Code as regards radio installations;
 - 2.6 the functioning of the radio installations used in life-saving appliances complied with the provisions of the Code;
 - 2.7 the ship complied with the provisions of the Code as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications;
 - 2.8 the ship was provided with lights, shapes and means of making sound signals and distress signals, in accordance with the provisions of the Code and the International Regulations for Preventing Collisions of Sea in force; and
 - 2.9 in all other respects the ship complied with the relevant provisions of the Code.
- 3 That an Exemption Certificate has/has not* been issued.
- 4 That the ship has/has not* been provided with Certificates issued under the 1974 SOLAS Convention, as amended.

* Delete as appropriate.

This certificate is valid until

Completion date of the survey on which this certificate is based:
(dd/mm/yyyy)

Issued at
(Place of issue of certificate)

.....
(Date of issue)

.....
(Signature of authorized official
issuing the certificate)

(Seal or stamp of the issuing authority, as appropriate)

ENDORSEMENT FOR ANNUAL SURVEYS RELATING TO HULL, MACHINERY AND
EQUIPMENT REFERRED TO IN SECTION 2.1 OF THIS CERTIFICATE

THIS IS TO CERTIFY that, at a survey required by 1.6 of the Code, the ship was found to comply with the relevant provisions of the Code.

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

ENDORSEMENT FOR ANNUAL AND PERIODICAL SURVEYS RELATING TO
LIFE-SAVING APPLIANCES AND OTHER EQUIPMENT REFERRED TO
IN SECTIONS 2.2, 2.3, 2.4, 2.6, 2.7, 2.8 AND 2.9
OF THIS CERTIFICATE

THIS IS TO CERTIFY that, at a survey required by 1.6 of the Code, the ship was found to comply with the relevant provisions of the Code.

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual/periodical* survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual/periodical* survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

* Delete as appropriate.

ENDORSEMENT FOR PERIODICAL SURVEYS RELATING TO RADIO INSTALLATIONS
REFERRED TO IN SECTION 2.5 OF THIS CERTIFICATE

THIS IS TO CERTIFY that, at a survey required by 1.6 of the Code, the ship was found to comply with the relevant provisions of the Code:

Periodical survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Periodical survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Periodical survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

ENDORSEMENT FOR THE EXTENSION OF THE CERTIFICATE

The ship complies with the relevant provisions of the Code and this Certificate should, in accordance with 1.7.3, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the Authority, as appropriate)

ANNEX

**RECORD OF EQUIPMENT FOR THE SPECIAL PURPOSE SHIP SAFETY CERTIFICATE
(FORM SPS)**

This Record should be permanently attached to the
Special Purpose Ship Safety Certificate.

**RECORD OF EQUIPMENT FOR COMPLIANCE WITH THE
CODE OF SAFETY FOR SPECIAL PURPOSE SHIPS**

1 Particulars of ship

Name of ship

Distinctive number or letters

Number of persons on board (including passengers)
for which certified

Minimum number of persons on board with required qualifications to operate
the radio installations

2 Details of life-saving appliances

1	Total number of persons for which life-saving appliances are provided	.....
		Port side	Starboard side
2	Total number of lifeboats	.....	.....
2.1	Total number of persons accommodated by them	.....	.....
2.2	Number of partially enclosed lifeboats (SOLAS regulation III/42)	.....	.....
2.3	Number of self-righting partially enclosed lifeboats (SOLAS regulation III/43)	.....	.....
2.4	Number of totally enclosed lifeboats (SOLAS regulation III/44)	.....	.....
2.5	Other lifeboats	.....	.....
2.5.1	Number	.....	.....
2.5.2	Type	.....	.....

3	Number of motor lifeboats (included in the total lifeboats shown above)	.....
3.1	Number of lifeboats fitted with searchlights	.....
4	Number of rescue boats	.....
4.1	Number of boats which are included in the total lifeboats shown above	.....
5	Liferafts	.....
5.1	Those for which approved launching appliances are required	.....
5.1.1	Number of liferafts	.....
5.1.2	Number of persons accommodated by them	.....
5.2	Those for which approved launching appliances are not required	.....
5.2.1	Number of liferafts	.....
5.2.2	Number of persons accommodated by them	.....
6	Buoyant apparatus	.....
6.1	Number of apparatus	.....
6.2	Number of persons capable of being supported	.....
7	Number of lifebuoys	.....
8	Number of lifejackets	.....
9	Immersion suits	.....
9.1	Total number	.....
9.2	Number of suits complying with the requirements for lifejackets	.....
10	Number of thermal protective aids*	.....
11	Radio installations used in life-saving appliances	.....
11.1	Number of radar transponders	.....
11.2	Number of two-way VHF radiotelephone apparatus	.....

* Excluding those required by SOLAS regulations III/38.5.1.24, III/41.8.31 and III/47.2.2.13.

3 Details of radio facilities

Item	Actual provision
1 Primary systems
1.1 VHF radio installation
1.1.1 DSC encoder
1.1.2 DSC watch receiver
1.1.3 Radiotelephony
1.2 MF radio installation
1.2.1 DSC encoder
1.2.2 DSC watch receiver
1.2.3 Radiotelephony
1.3 MF/HF radio installation
1.3.1 DSC encoder
1.3.2 DSC watch receiver
1.3.3 Radiotelephony
1.3.4 Direct-printing radiotelegraphy
1.4 Ship earth station providing a recognized mobile satellite service
2 Secondary means of alerting
3 Facilities for reception of maritime safety information
3.1 NAVTEX receiver
3.2 EGC receiver
3.3 HF direct-printing radiotelegraph receiver
4 Satellite EPIRB
4.1 COSPAS-SARSAT
5 VHF EPIRB
6 Ship's radar transponder

- 4 **Methods used to ensure availability of radio facilities (SOLAS regulations IV/15.6 and 15.7)**
- 4.1 Duplication of equipment
- 4.2 Shore-based maintenance
- 4.3 At-sea maintenance capability
- 5 **Special Purpose Ships constructed before 1 February 1995 which do not comply with all the applicable requirements of chapter IV of the SOLAS Convention, as amended***

	Requirements of regulations	Actual provision
Hours of listening by operator
Number of operators
Whether auto alarm fitted
Whether main installation fitted
Whether reserve installation fitted
Whether main and reserve transmitters electrically separated or combined

- 6 **Special Purpose Ships constructed before 1 February 1992 which do not comply with the applicable requirements of chapter III of the SOLAS Convention, as amended****

	Actual provision
Radiotelegraph installation for lifeboat
Portable radio apparatus for survival craft
Survival craft EPIRB (121.5 MHz and 243.0 MHz)
Two-way radiotelephone apparatus

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at
(Place of issue of the Record)

.....
(Date of issue)

.....
(Signature of authorized official
issuing the Record)

(Seal or stamp of the issuing authority, as appropriate)

* This section need not be reproduced on the record attached to certificates issued after 1 February 1999.

** This section need not be reproduced on the record attached to certificates issued after 1 February 1995.

ANNEX 2

FRAMEWORK FOR THE REGULATORY SCOPING EXERCISE FOR THE USE OF MARITIME AUTONOMOUS SURFACE SHIPS (MASS)

Aim

1 The aim of the regulatory scoping exercise is to determine how safe, secure and environmentally sound Maritime Autonomous Surface Ships (MASS) operations might be addressed in IMO instruments.

Objective

2 The objective of the regulatory scoping exercise on MASS conducted by the Maritime Safety Committee is to assess the degree to which the existing regulatory framework under its purview may be affected in order to address MASS operations.

Glossary

3 For the purpose of the regulatory scoping exercise, "Maritime Autonomous Surface Ship (MASS)" is defined as a ship which, to a varying degree, can operate independent of human interaction.

4 To facilitate the process of the regulatory scoping exercise, the degrees of autonomy are organized as follows:

Degree one: *Ship with automated processes and decision support:* Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with seafarers on board ready to take control.

Degree two: *Remotely controlled ship with seafarers on board:* The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.

Degree three: *Remotely controlled ship without seafarers on board:* The ship is controlled and operated from another location. There are no seafarers on board.

Degree four: *Fully autonomous ship:* The operating system of the ship is able to make decisions and determine actions by itself.

5 The above list does not represent a hierarchic order. It should be noted that MASS could be operating at one or more degrees of autonomy for the duration of a single voyage.

Instruments

6 The list of mandatory instruments related to maritime safety and security to be considered as part of the regulatory scoping exercise is set out in appendix 1. These instruments should be reviewed on a regulation or rule level. Subsidiary mandatory instruments established under each parent instrument should also be considered to the level necessary to establish how they will be affected.

7 The review of mandatory instruments should be prioritized. In instruments containing both mandatory and non-mandatory parts, non-mandatory parts may be considered as part of the regulatory scoping exercise, when deemed necessary, to obtain a complete understanding of how the mandatory provisions are affected in order to address MASS operations (e.g. STCW Convention and Code).

Type and size of ships

8 The application of the regulatory scoping exercise should be restricted to the applicability of the instruments under consideration.

Methodology

9 As a first step, the regulatory scoping exercise will identify provisions in IMO instruments which, as currently drafted:

- .1 apply to MASS and prevent MASS operations; or
- .2 apply to MASS and do not prevent MASS operations and require no actions; or
- .3 apply to MASS and do not prevent MASS operations but may need to be amended or clarified, and/or may contain gaps; or
- .4 have no application to MASS operations.

10 Once the first step is completed, a second step will be conducted to analyse and determine the most appropriate way of addressing MASS operations, taking into account, inter alia, human element,* technology and operational factors by:

- .1 equivalences as provided for by the instruments or developing interpretations; and/or
- .2 amending existing instruments; and/or
- .3 developing new instruments; or
- .4 none of the above as a result of the analysis.

11 Appendix 2 provides the template to be used to guide the documentation of results and, if necessary, present the results of the first step of the regulatory scoping exercise.

Plan of work and procedures

12 A plan of work and procedures for the regulatory scoping exercise is provided in appendix 3.

* Refer to resolution A.947(23), *Human element vision, principles and goals for the Organization*.

APPENDIX 1

LIST OF INSTRUMENTS RELATED TO MARITIME SAFETY AND SECURITY

- COLREG 1972 – International Regulations for Preventing Collisions at Sea, 1972
- CSC 1972 – International Convention for Safe Containers (CSC), 1972, as amended
- LL 1966 – International Convention on Load Lines, 1966
- LL PROT 1988 – Protocol of 1988 relating to the International Convention on Load Lines, 1966
- SAR 1979 – International Convention on Maritime Search and Rescue, 1979
- SOLAS 1974 – International Convention for the Safety of Life at Sea, 1974, as amended
- SOLAS AGR 1996 – Agreement concerning specific stability requirements for ro-ro passenger ships
- SOLAS PROT 1978 – Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974
- SOLAS PROT 1988 – Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974
- SPACE STP 1973 – Protocol on Space Requirements for Special Trade Passenger Ships, 1973
- STCW 1978 – International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended
- STCW-F 1995 – International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995
- STP 1971 – Special Trade Passenger Ships Agreement, 1971
- TONNAGE 1969 – International Convention on Tonnage Measurement of Ships, 1969

APPENDIX 2

TEMPLATE FOR THE REGULATORY SCOPING EXERCISE

Instrument: [Name of instrument]

Rule/Regulation	First step		
	Degree of autonomy	MASS application	Comments/Remarks (explain analysis conducted in determining "MASS application and potential gaps)
	Degree one		
	Degree two		
	Degree three		
	Degree four		
	Degree one		
	Degree two		
	Degree three		
	Degree four		

References:

Degrees of autonomy:

- Degree one: Ship with automated processes and decision support
- Degree two: Remotely controlled ship with seafarers on board
- Degree three: Remotely controlled ship without seafarers on board
- Degree four: Fully autonomous ship

MASS application:

- .A apply to MASS and prevent MASS operations; or
- .B apply to MASS and do not prevent MASS operations and require no actions; or
- .C apply to MASS and do not prevent MASS operations but may need to be amended or clarified, and/or may contain gaps; or
- .D have no application to MASS operations.

APPENDIX 3

PLAN OF WORK AND PROCEDURES FOR THE REGULATORY SCOPING EXERCISE

1 General

1.1 This note provides draft procedures for the regulatory scoping exercise on Maritime Autonomous Surface Ships (MASS).

1.2 The regulatory scoping exercise should be conducted taking into account the agreed framework and methodology and any relevant decisions of the Committee.

2 Web platform for the conduct of the regulatory scoping exercise

2.1 A web platform will be developed by the Secretariat as part of GISIS to facilitate the regulatory scoping exercise.

2.2 The platform will be developed in two stages, as follows:

- .1 a form for uploading the initial review of IMO instruments (to be completed by 15 February 2019); and
- .2 additional forms to allow submission of comments and other functionalities (e.g. printing, exporting, filtering, etc. (to be completed by the end of March 2019)).

2.3 The web platform will be connected to the IMO Web accounts, providing access only to registered IMO Members.¹ All IMO Members will have read-only access to the web platform.

2.4 The web platform should make a clear distinction between the first and the second step of the agreed methodology.

2.5 The information contained in the web platform should be retained for future references until the Committee decides otherwise.

3 First step

3.1 Initial review of IMO instruments

3.1.1 The initial review should be conducted by volunteering Member States, either individually or as a group. In case of a group, only one Member State will be provided with access to upload and edit the information.

3.1.2 The initial review involves only the first step of the agreed methodology.

3.1.3 Member States can volunteer to conduct the initial review of either a whole or part of an instrument (e.g. specific chapters) for all degrees of autonomy or for specific ones. Priority should be given to the consideration of degrees two and three.

¹ Whenever the term "IMO Member" is used in this document, it includes Member Governments, associated Member Governments, intergovernmental organizations with observer status and non-governmental organizations in consultative status.

3.1.4 Only users authorized by the Member State conducting the initial review of a specific instrument will be allowed to upload and edit the information.

3.1.5 If necessary, the Secretariat will assist with the pre-population of the number and titles of rules and regulations on the web platform.

3.1.6 Upon completion of the initial review, the web platform will be locked for editing.

3.2 Commenting stage

3.2.1 Once the initial review is completed, IMO Members will be authorized to submit comments through the web platform.

3.2.2 Comments could be submitted either on specific rules/regulations or as general comments on the instrument under review (e.g. in case of gaps in regulations).

3.2.3 As part of the commenting stage, the web platform should provide an option to indicate whether the IMO Member agrees or disagrees with the initial review. If the option "disagree" is chosen, then an explanatory comment should be provided specifying the alternative MASS application.

3.2.4 Each IMO Member will only be able to submit one comment per rule/regulation and degree of autonomy under consideration and one general comment on the instrument under consideration. In order to facilitate the subsequent consideration, comments on specific rules/regulations and general comments on the instrument under consideration will be limited to specific number of characters (to be determined according to IT functionalities).

3.2.5 After an agreed period, the web platform will be locked for comments.

3.3 Consideration of comments and presentation of results

3.3.1 The volunteering Member State(s) that conducted the initial review should consider all comments received and modify the initial review, as appropriate.

3.3.2 In order to facilitate the consideration of comments, the web platform should provide statistics of the number of IMO Members that had agreed or disagreed with the initial review.

3.3.3 The volunteering Member State(s) should also prepare a summary of results addressing in particular the main issues identified during step one in respect to specific degrees of autonomy and the specific gaps identified, if any.

3.3.4 The above summary of results should be submitted by the volunteering Member State(s) for consideration by the Committee or by a group authorized to that effect.

3.4 Consideration of the results of the first step

3.4.1 The Committee or a group authorized by the Committee should consider the results of the first step submitted by the volunteering Member State(s), taking into account the information in the web platform, and making any necessary final modifications, as appropriate.

3.4.2 When the consideration is completed, the Committee or a group authorized by the Committee should authorize the commencement of the second step.

3.4.3 Upon completion of the first step, the information related to step one will be closed for editing or modification.

4 Second step

4.1 Analysis of the most appropriate way of addressing MASS operations

4.1.1 The initial analysis should be conducted, preferably, by the volunteering Member State(s) that conducted the initial review.

4.1.2 The initial analysis involves the second step of the agreed methodology.

4.1.3 Only users authorized by the Member State conducting the initial analysis of a specific instrument will be allowed to upload and edit the information related to the second step.

4.1.4 Upon completion of the initial analysis, the web platform will be locked for editing.

4.1.5 The initial analysis should be high level and should not be conducted regulation by regulation.

4.2 Commenting stage

4.2.1 Once the initial analysis is completed, IMO Members will be authorized to submit comments through the web platform.

4.2.2 As part of the commenting stage, the web platform should provide an option to indicate whether the IMO Member agrees or disagrees with the initial analysis. If the option "disagree" is chosen, then an explanatory comment should be provided, specifying the most appropriate way of addressing MASS operations.

4.2.3 Each IMO Member will only be able to submit one comment per analysis.

4.2.4 After an agreed period, the web platform will be locked for comments.

4.3 Consideration of comments and presentation of results

4.3.1 The volunteering Member State(s) that conducted the initial analysis should consider all comments received and modify the initial analysis, as appropriate.

4.3.2 In order to facilitate the consideration of comments, the web platform should provide statistics of the number of IMO Members that had agreed or disagreed with the initial analysis.

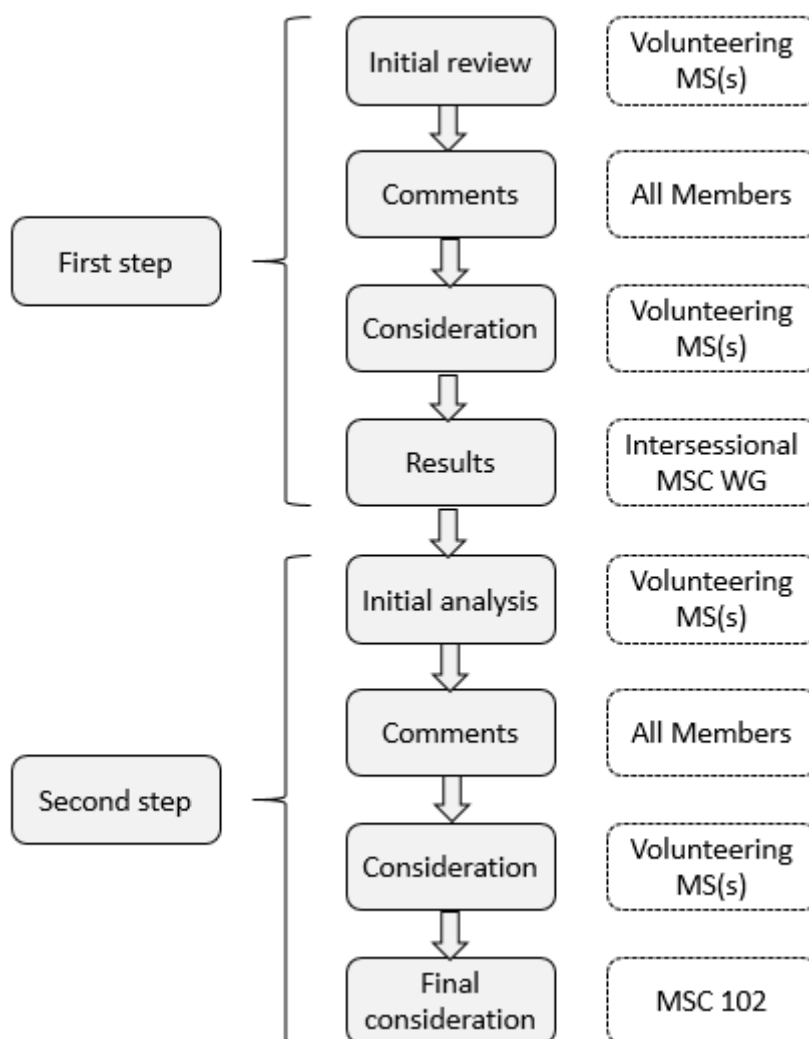
4.3.3 The volunteering Member State(s) should also prepare a summary determining the most appropriate way of addressing MASS operations specific to degrees of autonomy.

4.3.4 The above summary should be submitted by the volunteering Member State(s) for the Committee's consideration.

4.4 Final consideration

4.4.1 The Committee should consider the results of the first and second steps taking into account any relevant information, as appropriate.

Process for the regulatory scoping exercise



Timeline for the regulatory scoping exercise

Action	Deadline	Who?
Upload of the initial review of IMO instruments	April 2019	Volunteering Member State(s)
Commenting stage related to the initial review	May/June 2019 (two months)	All IMO Members
Consideration of comments and presentation of results	July 2019 (one month)	Volunteering Member State(s)
Consideration of the results of the first step	[2 to 6 September 2019]	[Intersessional MSC Working Group]
Analysis of the most appropriate way of addressing MASS operations (second step)	September/October 2019 (two months)	Volunteering Member State(s)
Commenting stage related to the initial analysis	November 2019 (one month)	All IMO Members

Action	Deadline	Who?
Consideration of comments and presentation of results	December 2019/January 2020 (two months) – deadline for submissions to MSC 102	Volunteering Member State(s)
Final consideration	May 2020	MSC 102

List of instruments and volunteering Members undertaking or supporting the review of instruments

Instrument	Chapter/Section	Degree of autonomy	Member State preparing the initial review	Supporting/assisting
SOLAS 1974				
	Chapter II-1	All	France	Sweden, Iran (Islamic Republic of)
	Chapter II-2	All	Japan	
	Chapter III	All	Netherlands	Belgium
	Chapter IV	All	Turkey	China, Japan
	Chapter V	All	China	Denmark, Japan, Singapore
	Chapter VI	All	Japan	
	Chapter VII	All	Japan	
	Chapter IX	All	Norway	China, Republic of Korea, Russian Federation
	Chapter XI-1	All	Finland	
	Chapter XI-2	All	Finland	
SOLAS AGR 1996				
SOLAS PROT 1978				
SOLAS PROT 1988				
STCW 1978 and STCW Code		All	United States	Japan, New Zealand, Republic of Korea, Russian Federation
STCW-F 1995		All	Japan	New Zealand
COLREG 1972		All	Marshall Islands	China, Japan, Singapore, United States
CSC 1972		All	Japan	Finland
LL 1966		All	India	
LL PROT 1988		All	India	
SAR 1979		All	Spain, France	Turkey

Instrument	Chapter/ Section	Degree of autonomy	Member preparing initial review	State the	Supporting/assisting
SPACE STP 1973					
STP 1971					
TONNAGE 1969					

ANNEX 3

RESOLUTION MSC.454(100)
(adopted on 7 December 2018)

**REVISED GUIDELINES FOR VERIFICATION OF CONFORMITY WITH GOAL-BASED
SHIP CONSTRUCTION STANDARDS FOR BULK CARRIERS AND OIL TANKERS**

THE MARITIME SAFETY COMMITTEE,

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

HAVING ADOPTED, by resolution MSC.287(87), the International Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers (hereinafter referred to as "the Standards") and, by resolution MSC.290(87), SOLAS regulations II-1/2.28 and II-1/3-10 to make the Standards mandatory,

NOTING that section 6 of the Standards requires that the rules for the design and construction of bulk carriers and oil tankers of an organization which is recognized by an Administration in accordance with the provisions of SOLAS regulation XI-1/1, or national rules of an Administration used as an equivalent to the rules of a recognized organization according to SOLAS regulation II-1/3-1, shall be verified as conforming to the goals and functional requirements of the Standards, based on the guidelines developed by the Organization,

RECOGNIZING the need for revision of the *Guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers*, adopted by resolution MSC.296(87), in light of the experience gained with their application and the recommendations made by the GBS Audit teams and to support their implementation,

HAVING CONSIDERED, at its 100th session, the proposed Revised guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers,

1. ADOPTS the Revised guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers, the text of which is set out in the annex to the present resolution;
2. REQUESTS Administrations and organizations recognized by Administrations in accordance with the provisions of SOLAS regulation XI-1/1 to utilize the Revised guidelines when applying for verification that their design and construction rules for bulk carriers and oil tankers conform to the Standards;
3. INVITES Contracting Governments to note that these Revised guidelines should take effect on documentation submitted for initial verification and on rule and/or documentation changes undergoing the maintenance of verification process on or after 1 January 2020;
4. RESOLVES to review these Revised guidelines, as necessary, in view of experience gained with their application;
5. REVOKES resolution MSC.296(87) on 1 January 2020.

ANNEX

REVISED GUIDELINES FOR VERIFICATION OF CONFORMITY WITH THE INTERNATIONAL GOAL-BASED SHIP CONSTRUCTION STANDARDS FOR BULK CARRIERS AND OIL TANKERS

INTRODUCTION

1 The Organization adopted, by resolution MSC.287(87), the *International goal-based ship construction standards for bulk carriers and oil tankers* (hereinafter referred to as "the Standards"), specifying goals, functional requirements and verification of conformity to ensure that ships are constructed in such a manner that, when properly operated and maintained, they can remain safe for their design life, and that all parts of a ship can be easily accessed to permit proper inspection and ease of maintenance.

2 These Revised guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers (hereinafter referred to as "the Guidelines") provide the procedures necessary for demonstrating and verifying that the ship design and construction rules for bulk carriers and oil tankers of an Administration or its recognized organization conform to the Standards, including both the method and criteria to be applied during the verification process.

3 The Guidelines are composed of two parts:

- .1 Part A establishes the procedures to be followed in order to verify that ship design and construction rules conform to the Standards. It includes sections on initial verification and maintenance of verification of the rules.
- .2 Part B provides detailed documentation requirements and evaluation criteria that should be used to verify that the rules conform to the Standards.

4 Those rules having been verified as conforming to the Standards, according to previous version of the Guidelines (resolution MSC.296(87)), should not be re-verified based on an updated version of the Guidelines.

Definitions

5 For the purpose of the Guidelines, the following definitions apply:

- .1 *Conformity* means fulfilment of Tier I goal(s) and Tier II functional requirement(s) of the Standards.
- .2 *Corrective action*: action intended to eliminate the cause(s) of a non-conformity.
- .3 *Improvement action*: action intended to address an observation.
- .4 *Finding* means an observation or a non-conformity.
- .5 *Non-conformity* means non-fulfilment of a Tier I goal(s) and Tier II functional requirement(s) of the Standards or lack of information or documentation requirements that prevent the evaluation criteria from being applied when conducting the audit.

- .6 *Objective evidence* means quantitative or qualitative information, records or statement of fact which are based on observation, measurement or historical service data and which can be verified.
- .7 *Observation* means statements of facts or proposals made during an audit which are based on objective evidence but are not a non-conformity, and that may provide the basis for improvement.
- .8 *Organization* means the International Maritime Organization.
- .9 *Rules or rule set* means requirements for hull design and construction of bulk carriers and/or oil tankers operating in unrestricted worldwide service. Within the verification audit process, any information and/or documentation, either supporting or included in the rule development process, which may include guidelines, interpretations and internal procedures considered necessary to assess the conformity of the rules may be interpreted as a part of the rule set.
- .10 *Secretary-General* means the Secretary-General of the International Maritime Organization.
- .11 *Self-assessment* means the Submitter assesses its rules for the design and construction of bulk carriers and/or oil tankers for conformity with the goals and functional requirements as set out in the Standards.
- .12 *SOLAS* means the International Convention for the Safety of Life at Sea, 1974, as amended.
- .13 *Standards* means the *International goal-based ship construction standards for bulk carriers and oil tankers*, adopted by the Organization by resolution MSC.287(87).
- .14 *Submitter* means any Administration or recognized organization that requests the Organization to verify that its ship design and construction rules for bulk carriers and/or oil tankers conform to the Standards.
- .15 *Third party* means a party that is neither the Organization nor the Submitter.
- .16 *Verification* (and any variation of the word *verify*) means the rules for the design and construction of bulk carriers and oil tankers have been compared to the Standards and have been found to be in conformity or are consistent with the goals and functional requirements as set out in the Standards.
- .17 *Verification audit* or *audit* means the process of evaluating the Submitter's rules, self-assessment and supporting documentation to ascertain the validity and reliability of information. The purpose of the audit is to assess the conformity of the submitted rules with the Standards based on work done on a sampling basis.
- .18 *Validation* means the act of examining methodologies, assessments, procedures, hypothesis or criteria used in requirements or calculations in order to make them acceptable.

- .19 *Benchmarking* means the act of measuring the performance of methodologies, assessments, criteria and requirements by using indicators that can be compared with an accepted standard or with experimental and/or service history data, performance levels or outcomes known to be reliable.
- .20 *Rule change* means any text change to an existing rule or rule set already verified as conforming to the Standards.
- .21 *Categorization of rule changes* means assigning a new rule or rule change to one of the following categories for the purpose of maintenance of verification:

Category	Designation	Explanation
1	Corrigenda and follow-up change	Editorial corrigenda; or rule changes reflecting amendments to IMO mandatory instruments
2	Minor change	Change or deletion of a rule requirement or addition of new requirements not belonging to categories 1 or 3
3	Major change	Change of basic methodology or technology or basic assumptions, e.g. changing the basis for load determination; introduction of new technologies which will require change of permissible values (acceptance criteria), etc.

PART A VERIFICATION PROCESS

Scope of verification

6 This part establishes the procedures to be followed in order to verify that rules for the design and construction of bulk carriers and/or oil tankers conform to the Standards. The verification process consists of two main elements: self-assessment of the rules by the Submitter and an audit of the rules, the self-assessment and the supporting documentation by the Organization.

Initial verification

Initiation

7 Any Administration or recognized organization wishing to have its rules verified as conforming to the Standards should initiate the process with a letter to the Secretary-General, requesting a verification audit of their rules. The letter should be accompanied by a complete technical documentation package (see paragraph 10) and a supporting letter from an Administration that has recognized the Submitter, if applicable.

8 The Secretary-General notifies the Submitter of his decision to accept or reject the request and, if accepted, advises the expected date for establishment of the GBS audit team

(the Team) to audit the submission. If the request is rejected, the Secretary-General will include the reason for doing so.

9 The Submitter may withdraw the application at any time prior to consideration by the Maritime Safety Committee.

Submission

10 The Submitter should provide a technical documentation package for review in electronic form in English (to each member of the Team and the Secretariat), including:

- .1 the rule set to be verified as conforming to the Standards;
- .2 all items listed under information and documentation requirements in part B of these Guidelines which are not included in .1 above and are included in the internal quality management system or the rule development process as applicable;
- .3 a self-assessment, addressing all items listed under information and documentation requirements and evaluation criteria in part B of these Guidelines;
- .4 a clear indication of any instance where a functional requirement, or portions of it, are satisfied by IMO mandatory instruments that are not part of the submitted rules (e.g. SOLAS or MARPOL requirements);
- .5 any other documentation which, in the Submitter's opinion, supports their assessment that the rules conform to the Standards;
- .6 a completed Submission Template (see appendix 1);
- .7 a clear indication of any confidential and/or proprietary information submitted with the documentation package; and
- .8 in case a Submitter uses third-party rules, procedures and technical documentation, the following should be submitted in addition to sub-paragraphs .1 to .7 above:
 - .1 a clear statement that the use of such rules, procedures and technical documentation does not infringe any copyright material;
 - .2 clear procedures, as part of the internal quality management system, for the regular review and continuous improvement of the submitted rules, procedures and technical documentation; and
 - .3 details of processes, procedures and associated documentation that ensure proper monitoring and implementation of the third-party rules.

Audit process

- 11 The initial verification audit (audit) is an iterative process based on the following steps:
- .1 the Secretary-General verifies that the submitted technical documentation package includes all of the elements specified in paragraph 10;
 - .2 the Secretary-General establishes the GBS audit team and forwards the request for audit and technical documentation package to the Team with the instructions given in paragraph 12;
 - .3 the Team reviews the information, confirms completeness of the documentation submitted, exchanges views and establishes an audit plan;
 - .4 the Team conducts the audit;
 - .5 the Team prepares an interim audit report for the Submitter that contains the preliminary findings of the audit, requests for additional information as needed, and possible non-conformities, using the report format specified in appendix 2. Where the Team has identified a possible non-conformity, they should explain the reasons for reaching that conclusion;
 - .6 upon receipt of the interim report, the Submitter may respond by submitting additional documentation through the IMO Secretariat to the Team to address the reported non-conformities and/or requests for additional information;
 - .7 the Team prepares a final audit report with a recommendation, using the report format specified in appendix 2, and provides it to the Secretary-General with a copy to the Submitter. Where the Team has identified an unresolved non-conformity, they should explain the reasons for reaching that conclusion;
 - .8 the Submitter should prepare corrective action plans to address any non-conformities reported by the Team and submit them to the Secretary-General;
 - .9 the Team reviews the corrective action plans and sends its recommendation to the Secretary-General; and
 - .10 the Team's comments and suggestions related to the audit process should be submitted in a separate report to the Secretary-General.

12 The Team is expected to conduct an audit to determine whether the submitted rules conform to the Tier I goals and each of the Tier II functional requirements, based on the criteria in part B of the Guidelines. In undertaking this task, the Team should exercise their professional judgement in determining the depth of the audit.

13 Where the Submitter can clearly indicate that a functional requirement, or portions of it, are covered by IMO mandatory instruments (e.g. SOLAS or MARPOL requirements), but are not part of the submitted rules, the Team should accept this as part of the verification, provided that it does not affect other covered functional requirements. Mandatory IMO instruments used to satisfy functional requirements should be applied in a manner consistent with IMO interpretations.

14 Timescales for the initial verification audit process should be agreed between the Secretary-General, the Team and the Submitter at an early stage. Deviations to agreed timescales can be considered by the Secretary-General upon timely request.

Appeal

15 The Submitter, through their supporting Administration, can appeal a finding of the GBS audit team to the Secretary-General. Notification of intent to appeal must be made within 30 days after receiving the Team's final audit report. The appeal request should follow within six months of the notification with the documentation to support the appeal request. After the supporting documentation is received, the Secretary-General should establish an appeal board, independent of the original Team, to adjudicate the request. This appeal board should be comprised of three or five members and be selected by the Secretary-General from the same list of experts described in paragraph 37. These members should not have participated in the Team that conducted the audit that is being appealed.

Approval

16 The Secretary-General forwards the final audit report of the Team, any corrective action plans, supplemented by any appeal report and any auditors' recommendations on the corrective action plans, if applicable, to the Committee for consideration and final decision.

17 Ships contracted for construction to any new rules or rule changes to rules already verified as conforming to the Standards may be deemed to meet the Standards until a final decision is made by the Committee.

18 The Committee considers the submission from the Secretary-General, with a view to confirming that the information provided by the Submitter demonstrates that the rules conform to the Standards.

19 Where non-conformities have been found and corrective action plans have been submitted, the rules and/or the documentation should be revised as necessary and the documentation to demonstrate rectification of non-conformities according to the agreed corrective action plans should be submitted for audit (see paragraphs 26.1, 27.1 and 27.3). During this process, ships contracted for construction to any new rules or rule changes to rules already verified as conforming to the Standards may be deemed to meet the Standards until a final decision is made by the Committee unless the Committee agrees that there is a non-conformity that compromises safety.

20 Upon final decision by the Committee, the Secretary-General notifies the relevant Administration and recognized organization as to whether the submitted rules conform to the Tier I goals and Tier II functional requirements of the Standards. In the case of non-conformity, the notification letter should include specific details to support the determination of non-conformity.

21 The Secretary-General circulates the results of successful verifications to Member Governments by appropriate means and maintains a list of all rule sets that have been verified for conformity as well as the original copy of the documentation package submitted.

Common submissions by groups of Submitters

22 Where documentation is common to more than one recognized organization or Administration, Submitters may make a request to the Secretary-General to submit a single package containing all the common documents.

23 Individual recognized organizations and Administrations should also submit their own documentation demonstrating how the common documents have been incorporated into their own requirements. The individual package should also include any additional information which is relevant to the audit. For an initial audit, the individual submission should be supported by an Administration which has recognized the Submitter, as required by paragraph 7.

24 Supporting Administrations should receive from the individual Submitter a copy of any common submission made on behalf of the recognized organization they are supporting.

25 The Secretary-General may establish a separate Team to evaluate the common submission. If such a team is established, it should liaise with the Team that is considering the individual submissions to ensure that findings identified in the individual package that are related to the common package are addressed.

Maintenance of verification

26 The addition of new rules or changes to rules already verified as conforming to the Standards may be introduced as a result of:

- .1 the application of corrective actions emanating from previous verification audits; or
- .2 a continuous improvement process, which may take into account the experience gained and the due consideration by the Administration or the recognized organization the rules of which have been verified as conforming to the Standards, which also includes the addressing of observations stemming from previous verification audits.

27 Addition of new rules or changes to rules already verified as conforming to the Standards should be processed as follows:

- .1 if they are as a result of paragraph 26.1 above, each Submitter should notify and make available any new rules or rule changes, including the necessary documentation regarding the completion of corrective actions for the non-conformities reported, to the Secretary-General and to all Administrations that have recognized them. The notification should include, at least (see also appendix 3):
 - .1 an extract from the original rule linkage summary table related to the non-conformity;
 - .2 a copy of the text of the original non-conformity;
 - .3 an explanation of the investigation related to the non-conformity;
 - .4 a copy of the detailed action plan applied, including how the non-conformity has been rectified and any impact of the corrective actions;
 - .5 a self-assessment (rule linkage) addressing all non-conformities; and
 - .6 any supporting documentation, e.g. rule change proposals, updated technical background documents, changed procedures, etc.

- .2 If they are as a result of paragraph 26.2 above, at least annually, each recognized organization whose rules have been verified as conforming to the Standards should make available any new rules or rule changes, including any errata, corrigenda or clarifications, to the Secretary-General and to all Administrations that have recognized them. The Secretary-General should also be provided with a rule commentary. All changes should be listed in the rule commentary including their categorization as per paragraph 5.21 and, for categories 2 and 3 changes, the rule commentary must clearly indicate the impact of the changes on conformity with the Standards of those rules already verified. The commentary should include, but not be limited to:
- .1 an explanation of why the changes were considered necessary, including a description of the issues under consideration;
 - .2 the extent to which the changes address the issues under consideration;
 - .3 an explanation of the way the rules were formulated/drafted;
 - .4 an indication of any impact on and/or contribution to safety, security or environmental protection; and
 - .5 an indication of any impact on net and gross scantlings.
- .3 The Organization should audit all new rules and rule changes received per sub-paragraph .1 above. To such an extent, the new rules, rule changes and the necessary documentation should be submitted in a timely manner. The Secretary-General should establish a Team accordingly and forward the compilation of new rules and changes received per sub-paragraph .1 to it for consideration. The Team should conduct a preliminary review of the new rules and changes, exchange views and establish an audit plan. The Team conducts the audit and prepares a verification audit report with a recommendation and provides it to the Secretary-General with a copy to the Submitter. Where the Team has identified a non-conformity or an unresolved non-conformity, it should explain the reasons for reaching that conclusion. The findings of the Team should be forwarded by the Secretary-General to the Committee for further consideration and final disposition at the earliest opportunity after the Committee session that had considered the final audit report and had decided upon conformity. The Secretary-General should notify the relevant Submitter(s) as to whether the non-conformity has been rectified.
- .4 The Organization should review and audit the rule changes received per sub-paragraph .2 every three years. The Secretary-General should establish a Team and forward the compilation of annual changes received per sub-paragraph .2 to it for consideration. Using their professional judgement, the team should conduct a review of all the changes taking into account the information submitted, particularly the Submitters' categorization of the rule changes and the impact assessment, exchange views and establish an audit plan. Category 3 changes should be subject to audit; category 2 changes may require an audit depending on the impact of the change; category 1 changes need not be audited unless the team deems it necessary. The Team should provide the audit plan to the Secretary-General for submission to the Committee, and to the Submitters for information.

The Team conducts the audit and prepares a maintenance of verification audit report with a recommendation and provides it to the Secretary-General. Where the Team has identified a non-conformity, it should explain the reasons for reaching that conclusion. The findings of the Team should be forwarded by the Secretary-General to the Committee for further consideration and final disposition.

- .5 When an Administration considers a new rule or rule change described in sub-paragraph .2 above to result in non-conformity with the Standards, it may request the Secretary-General to conduct a review of the rule or the change, respectively. The request should include supporting justification why such a review is necessary. The Secretary-General should establish a Team to assess the request of the Administration and the impact of the change(s) on conformity with the Standards, and then assess the necessity of conducting an audit, regardless of the three-year cycle. The recommendations of the Team should be forwarded to the Committee by the Secretary-General, along with the request from the Administration and supporting documentation, for further consideration and final disposition.
- .6 The Submitter may request the Secretary-General to conduct a review of the rule or the change, respectively. The request should include supporting justification why such a review is necessary. The Secretary-General should establish a Team to assess the request of the Submitter and the impact of the change(s) on conformity with the Standards, and then assess the necessity of conducting an audit, regardless of the three-year cycle. The recommendations of the Team should be forwarded to the Committee by the Secretary-General, along with the request from the Submitter and supporting documentation, for further consideration and final disposition.
- .7 Any Administration the rules of which have been verified against the Standards should be subject to the process described in sub-paragraphs .1 to .5 above, as applicable.
- .8 Rules should be considered to be in conformity unless sub-paragraphs .3, .4 or .5 above result in non-conformities. During the subsequent process ships contracted for construction to the revised rules may be deemed to meet the Standards.

Rectification of non-conformities after initial or maintenance audits

28 Where non-conformities are identified and corrective action plans submitted, the Submitter should prepare a further submission to demonstrate that the non-conformity has been rectified.

29 The submission should contain the following information (see also appendix 3):

- .1 an extract from the original rule linkage summary table related to the non-conformity;
- .2 a copy of the text of the original non-conformity;
- .3 a copy of the submitted corrective action plan;
- .4 details of how the non-conformity has been rectified; and

- .5 any supporting documentation, e.g. rule change proposals, updated technical background documents, changed procedures, etc.

30 The Secretary-General will establish an audit team to review the submission and forwards the documentation package to the Team for the following course of action:

- .1 The Team should conduct a preliminary review of the new rules and the changes, exchange views and establish an audit plan. The Team conducts the audit. The Team may interact with the Submitters for clarification or requests for additional material.
- .2 The Team prepares an audit report with a recommendation and provides it to the Secretary-General with a copy to the Submitter. Where the Team has identified a non-conformity or an unresolved non-conformity, they should explain the reasons for reaching that conclusion.
- .3 The Secretary-General forwards the audit report to the Committee for consideration and final decision.
- .4 The Committee considers the report prepared by the Team with a view to confirming that the information provided by the Submitter demonstrates that the non-conformity has been rectified.

31 Upon final decision by the Committee, the Secretary-General notifies the relevant Submitter as to whether the non-conformity has been rectified.

Follow up of observations

32 Notwithstanding the provisions in paragraphs 26 and 27 above, where observations are identified, the Submitter should prepare a further submission to demonstrate that an observation has been recognized and will be addressed.

33 The submission should contain the following information:

- .1 the original documentation related to the observation(s);
- .2 a copy of the text of the observation(s);
- .3 a copy of the improvement action(s); and
- .4 any supporting documentation.

34 During the maintenance of verification audit, any improvement action plans should be made available to the auditor(s).

35 The Committee may request re-verification of rules if significant changes are made to the Standards or other IMO mandatory instruments or if there is a compelling need.

GBS audit team

36 A GBS audit team, established under the auspices of the Committee, will conduct an audit of the Submitter's documentation package to verify whether the rules conform to the Standards.

The Team will serve as an independent panel of technical experts which are not considered to be representing any Member State of the Organization or any organization in consultative status. The Team should consist of three (3) or five (5) members, depending on the complexity of the submission(s) and/or the necessary time to review the documentation package(s), e.g. in case of common submissions. A simple majority will be required to recommend a finding of non-conformity for a functional requirement. The voting of individual members will be kept confidential, with the resulting outcome considered as a decision of the Team. In any case, the view of the minority should be fully documented in the final audit report of the Team.

37 Administrations and non-governmental organizations in consultative status with the Organization may nominate individuals for inclusion in a list of experts, maintained by the Secretary-General, from which the members of the Team will be selected. Nominations should be provided to the Secretary-General and should be accompanied by a curriculum vitae.

38 Nominees should have adequate knowledge of, and experience in, ship structural design and construction, the Standards and classification society rules and rule development and be able to correctly interpret the rules for correlation with relevant regulatory requirements. Additionally, nominees should satisfy at least some of the following requirements:

- .1 engineering degree in naval architecture and/or structural engineering;
- .2 scientific or engineering knowledge of technical subjects addressed in ship structural standards including strength of materials, structural analysis, fatigue analysis, hydrodynamics and load calculations, and structural reliability;
- .3 design, construction or operating experience with the type of ship addressed by the ship rules being verified;
- .4 knowledge of ship safety construction requirements, including SOLAS requirements and industry standards, guidelines and practices;
- .5 knowledge of environmental protection requirements related to ship structures;
- .6 knowledge and experience in survey, inspection and maintenance of ship structures;
- .7 knowledge and experience in shipbuilding and ship construction practices;
- .8 knowledge and experience in auditing; and
- .9 research experience in any of the areas referred to in subparagraphs .1 to .7 above.

39 The members of the Team will be selected by the Secretary-General as needed from the list of experts, giving due consideration to the qualifications listed in paragraph 38 and ensuring appropriate and balanced representation and expertise for the specific rules being considered. Additionally, the Secretary-General will select one of the members of the Team to be responsible for overall coordination of the audit. The Team should exercise their professional judgement in concluding compliance with the Standards. Until reports are issued to the Committee, this audit process is understood to be between the auditors and the Submitters and information related to the process should be maintained in confidence between these parties. Team members should not have any conflict of interest relating to the rules being verified. In addition, Team members should act in a neutral manner.

40 Each member of the GBS audit team or of the appeal board should sign a confidentiality agreement with the Secretary-General, stating that they will not disclose any proprietary information that is provided to them for the purpose of verifying rules, with the exception of the documentation required for the interim or final reports.

41 The Team should consider the need for transparency throughout their deliberations. The Team should meet in person with the Submitter at least once during the audit process at a mutually agreed location and date to address any questions and issues that may arise during the audit process, review any additional documentation needed to complete the audit, and to share their preliminary findings.

42 The Secretary-General will provide the GBS audit team with adequate administrative assistance to support the verification process, including a permanent secretary.

PART B INFORMATION/DOCUMENTATION REQUIREMENTS AND EVALUATION CRITERIA

INTRODUCTION

43 This part provides detailed information and documentation requirements and evaluation criteria to assist the Submitter to conduct a self-assessment that the rules conform to the Tier I goal(s) and Tier II functional requirement(s) of the Standards, as outlined in part A. It includes a statement of intent, information and documentation requirements, and evaluation criteria for each Tier II functional requirement. Additionally, the information and documentation requirements and evaluation criteria serve as the auditing standard for the GBS audit team.

44 The statement of intent links Tier II functional requirement(s) to Tier III verification of conformity by providing an overview of what the verification of the particular functional requirement should achieve.

45 The information and documentation requirements establish specific items that should be included and addressed in the submission supporting the verification.

46 The evaluation criteria should be considered as the basis for conducting the self-assessment and audit.

47 One or more information and documentation requirements may be applicable to one or more evaluation criteria. This relationship will depend upon the nature and extent of the information and documentation required, as well as the scope and extent of the evaluation criteria.

48 Justification means providing the supporting data, analysis or other study that demonstrates the adequacy of the methodology, process or requirement. It should include:

- .1 basis for the assumptions made;
- .2 description of the uncertainties associated with them; and
- .3 any sensitivity analyses carried out.

It includes documented rationale on which the validity of the hypothesis or criteria used in the requirements or calculations are based. These may be the results of research work, historical data, statistics, etc. For example, justification of safety factors should describe how the many related assumptions and uncertainties, such as environmental conditions, loads, structural analysis methodology and strength criteria, are accounted for.

49 Where commentary or data are requested, it is sufficient for such information to be contained in a rule commentary or other supporting documentation.

50 Where the rules establish a process to evaluate and accept alternatives, the submission should clearly identify the process for determining that an equivalent level of safety is achieved.

INFORMATION AND DOCUMENTATION REQUIREMENTS AND EVALUATION CRITERIA

DESIGN

1 Design life

1.1 *Statement of intent*

Confirm that the specified design life is at least 25 years and incorporated in the rules.

1.2 *Information and documentation requirements*

1.2.1 Statement of the design life in years used in developing the rules.

1.2.2 Description of the assumptions and methods used to incorporate design life into the rules. This should include, but not be limited to, consideration of extreme loads, design loads, fatigue and corrosion.

1.3 *Evaluation criteria*

1.3.1 Are structural strength, fatigue and corrosion additions, and any other design parameters used in the rules based upon the specified design life?

1.3.2 Has the design life been applied in sections of the rules where specified?

2 Environmental conditions

2.1 *Statement of intent*

Confirm that the wave data and associated ship motions and loads are developed on the basis of North Atlantic environmental conditions and the relevant long-term sea state scatter diagrams for the specified design life.

2.2 *Information and documentation requirements*

2.2.1 Source of sea state data (scatter diagrams, etc.) including method and date of data collection and geographical location represented by the data.

2.2.2 Justification that sea state data and predictions used to develop motions and loads are representative of North Atlantic environmental conditions.

2.2.3 Justification of the methodology used to develop ship motions and loads, including assumptions related to speed, distribution of headings, number of cycles of wave encounters, probability of exceedance of design values, sea states, wave spectral shapes, hull form and other relevant parameters. Clearly define limits of applicability and provide guidance for assessment when outside this range.

2.2.4 Description of how the methodology used to develop ship motions and loads has been validated against experimental or service history data.

2.3 Evaluation criteria

2.3.1 Does the wave data properly represent North Atlantic conditions and include the regions where the most severe conditions are expected?

2.3.2 Do the rules specify the wave spectrum and statistical analysis methods used to obtain the design extreme value, including its probability of exceedance?

2.3.3 Are the design extreme motions and loads based on appropriate number of cycles of wave encounters corresponding to at least a 25-year design life?

2.3.4 Are the ship speeds and headings used for assessment of ship motions and loads based upon speeds and headings that can be expected in the sea states under consideration?

2.3.5 Do the rules properly specify the range of applicability of ship motions and loads, and when further analysis, such as direct seakeeping analysis or model testing, is required? Do the rules clearly state the assumptions used in the methodologies to develop ship motions and loads?

2.3.6 Are the methodologies used to develop ship motions and loads validated by experimental or service history data?

3 Structural strength

3.1 Statement of intent

Confirm that the rules require a ship to be designed to withstand at net scantlings the operational and environmental loads for its specified design life. Confirm that the rules include the appropriate safety margins which reflect the degree of uncertainty.

3.2 Information and documentation requirements

3.2.1 Description of how the rules provide net scantlings that are sufficient to avoid excessive deformation (either elastic or plastic, as appropriate) and prevent failure modes including, but not limited to, those involving yielding and buckling of hull girder and structural members. Include the following:

- .1 Description of the strength assessment methodology.
- .2 Explanation of how the net scantlings concept is applied in the rules for structural design.
- .3 Justification of the methodologies used to obtain the global and local, static and dynamic design loads.

- .4 Justification of the acceptable limits of yielding and buckling.
- .5 Explanation of how the rules prevent deformation from compromising the integrity of the ship's structure. The term "deformation" means translational and/or rotational displacement.
- .6 Explanation of the requirements for finite element structural modelling, including load application, boundary conditions, element selection and mesh size. Explanation of how primary, secondary and tertiary stresses are considered.
- .7 List of the loading conditions considered in the rules that are to be included in the structural evaluation. Justification of the loading conditions especially in terms of what parts of the structure may be critically loaded and stressed.
- .8 Description of how construction tolerances and procedures, and material imperfections are accounted for in the rules.
- .9 Justification of the rationale of the rules for weld design and procedures.
- .10 Justification of how structural continuity is taken into account in the rules, including termination of primary structures at the fore and aft ends of the cargo block.
- .11 Explanation of how the rules consider deformations or vibration levels that may damage or impair the ship structure, equipment or machinery.
- .12 Description of the safety factors in conjunction with assumed design load(s) and justification as to why they are appropriate.
- .13 Description of how the strength assessment methodology has been validated against experimental and service history data.
- .14 Example(s) of the rules applied to representative design(s). The example(s) should include an illustration of the midships section and of the cargo region showing net and gross scantlings, as well as a summary of the background calculations used to develop the scantlings.

3.2.2 Explanation of how the rules consider structural integrity at net scantlings for typical loading/discharging and ballast exchange scenarios, including criteria to determine acceptability and provide reasonably attainable sequences of loading, discharging and ballasting.

3.2.3 Justification of the methodology used for the calculation of local stresses, including stress concentration factors, if utilized.

3.2.4 Justification of how the rules account for sloshing effects.

3.2.5 Description of how the rules determine that the net scantlings are sufficient to provide adequate ultimate strength. Include the following:

- .1 description of the ultimate strength assessment methodology;
- .2 justification of how the net scantlings concept is applied in the rules for ultimate strength;

- .3 justification of the loads considered for the ultimate strength analysis;
- .4 explanation of the methodology used for calculating hull girder capacity and ultimate strength of plates and stiffeners, individually and in combination;
- .5 description of acceptable limits of ultimate strength, including safety factors, with justification why they are appropriate; and
- .6 description of how the ultimate strength assessment methodology has been validated against experimental and service history data.

3.2.6 Description of any protective arrangements and/or reinforcements required to avoid damage caused by loading/unloading equipment that would compromise the ship's structural integrity.

3.3 Evaluation criteria

3.3.1 Do the rules specify the probability of exceedance for which global and local dynamic loads are calculated?

3.3.2 Are the limits of yielding, buckling and ultimate strength set at levels that will maintain the structural integrity?

3.3.3 Do the rules satisfactorily consider deformations that may compromise the integrity of the ship's structure?

3.3.4 Do the rules adequately specify the required extent of finite element models and how ship structures should be modelled, including how boundary conditions and loads are to be applied, and elements and mesh size selected? Are primary, secondary and tertiary stresses properly accounted for?

3.3.5 Are the following loading conditions included: homogeneous, partial, alternate loads, multi-port, ballast conditions including ballast management, and loading and offloading sequences and intermediate conditions? Are these, and any other conditions identified in the loading or stability manuals, considered without exceeding allowable bending moments, shear forces and stresses?

3.3.6 Is the methodology for developing the lightship and deadweight load distributions clearly defined, in a way that it will be consistently applied?

3.3.7 Do the rules satisfactorily consider workmanship standards and construction tolerances?

3.3.8 Do weld designs and procedures provide a level of strength of welds in their net condition to withstand the expected loads on the joints?

3.3.9 Are the requirements for tapering primary structures, including transitions fore and aft of the cargo block, defined in sufficient detail in the rules?

- .1 Where prescriptive measures are specified, do these measures provide for adequate continuity and termination of primary structure and primary supporting members?

- .2 Where analytical methods are allowed for evaluating structural continuity, is the methodology sufficiently defined to enable adequate assessment of the proposed arrangements for the termination of primary structure and primary supporting members? Do these analytical methods include both the local stress evaluation and the effect of the relative stiffness of the members at the termination?

3.3.10 Do the rules satisfactorily consider deformations or vibration levels that may damage or impair the ship structure, equipment or machinery?

3.3.11 Do the rules include adequate safety factors?

3.3.12 Do the rules include methodology for the development of local loads, including specifying the characteristics of intended cargoes relevant to loading (cargo arrangement, minimum density, angle of repose for bulk cargo) and minimum density of ballast to be applied?

3.3.13 Do the rules specify procedures for direct calculation of local stresses in structural details. If direct calculation is not required, do the rules include definition and application of stress concentration factors? If stress concentration factors are utilized, a justification of the definition and application of these factors should be included.

3.3.14 With regard to local strength:

- .1 Do the rules require the structure in way of cargo and ballast spaces to be suitable for any level of filling, from empty to maximum capacity (where maximum capacity is either full or the clearly defined operational limit on filling height or cargo mass)?
- .2 Do the rules define loading conditions for evaluation, including the loaded/empty condition of adjacent cargo and/or ballast spaces, and the draughts to be considered for each loading condition?
- .3 For oil tankers, do the rules consider any reasonable combination of cargo or ballast space loading, including asymmetric loading and loading in any one athwartships row across to be empty at or near the scantling draught?
- .4 Do the assumed draught limits and assumed densities and other cargo characteristics cover the expected operational range?
- .5 Do the local strength evaluations consider the effects of maximum allowable still water and wave bending and shear loads on the structure?
- .6 Are sloshing effects adequately covered by the rules?

3.3.15 Do the rules require adequate protective arrangements and/or reinforcements to avoid damage caused by loading/unloading equipment that would compromise the ship's structural integrity?

3.3.16 Have the results from the strength and ultimate strength assessments been benchmarked? Do they compare favourably with service history and other standards?

3.3.17 Do the illustrations of the representative designs show net and gross scantlings? Do the background calculations show how the structure at net scantlings withstands the operational and environmental loads for the specified design life?

4 Fatigue life

4.1 Statement of intent

Confirm that the fatigue life is not less than the specified design life.

4.2 Information and documentation requirements

4.2.1 Description of how the rules provide that structural arrangement and net scantlings are sufficient to meet a calculated fatigue life not less than the specified design life. Include the following:

- .1 Description of the fatigue assessment methodology used in the rules including sea state data, long-term statistics of wave data applied in fatigue calculations, derivation of cyclic loads, calculation of stress ranges, modelling of their distribution functions, S-N curves used and factors of safety or margins taken.
- .2 Explanation of where and how the net scantlings concept is applied in the rules for fatigue. Justification of the values of the scantlings used in the calculations.
- .3 List of the loading conditions required by the rules to be considered as part of the fatigue evaluation. Justification of the selection of loading conditions.
- .4 Justification of how the rules take into account dynamic loads and their combinations, including the probability level for which dynamic loads are calculated.
- .5 Justification of the process for the selection of the structural members and typical critical design details required to be included in evaluation of ship's fatigue life.
- .6 Justification of procedures for the calculation of cyclic stresses and stress ranges in structural details. Explanation of the method used to take into account stress concentrations, as may be applicable to the detail analysed.
- .7 Explanation of the requirements for finite element structural modelling, including load application, boundary conditions, element selection and mesh size. Explanation of how primary, secondary and tertiary stresses are considered.
- .8 Description of how construction tolerances and procedures are accounted for in the rules. Description of how surface treatment, such as grinding and peening, is addressed in the rules.
- .9 Description of how the rules consider the effect on fatigue life of unprotected structural details in seawater (e.g. when the breakdown of coating leads to exposure to seawater).
- .10 Description of how the rules take into consideration slamming (e.g. whipping) and vibratory-induced fatigue effects (e.g. springing or propeller induced vibrations). Justification should be provided if not explicitly considered in fatigue assessment.

- .11 Explanation of the effect of uncertainties/assumptions on fatigue life, highlighting any margins used in fatigue calculations, taking into consideration the consequence of failure of the particular structural member.
- .12 Description of how the fatigue assessment methodology has been validated against experimental and/or service history data.

4.3 Evaluation criteria

4.3.1 Is the methodology used in fatigue life assessment properly justified? Are the explanations provided to cover the sea state data used, long-term statistics of wave data applied, derivation of cyclic loads, method of calculation of the stress ranges and their distribution functions, S-N curves used and the factors of safety or margins taken, satisfactory?

4.3.2 Are the values of the scantlings required to be used in the calculations properly justified according to the net scantlings concept?

4.3.3 Are the assumed operating conditions (e.g. loaded and ballast) specified by the rules in the long-term fatigue response analysis adequate for a representative ship's operating profile? Are the stress ranges so obtained appropriate to represent the long-term fatigue response?

4.3.4 Are the internal/external dynamic loads and their combinations based on the North Atlantic environment? Is the probability level for which these loads are calculated properly justified?

4.3.5 Do the rules require the systematic identification of areas prone to fatigue throughout the entire ship that are required to be included in the evaluation of the ship's fatigue life?

4.3.6 Are the procedures for the calculation of cyclic stresses and stress ranges in structural details properly justified?

4.3.7 Do the rules properly take into account stress concentrations, as may be applicable to the detail analysed?

4.3.8 Do the rules specify the required extent of finite element models and how ship structures should be modelled, including how boundary conditions and loads are to be applied, and elements and mesh size selected? Are primary, secondary and tertiary stresses properly accounted for?

4.3.9 Do the rules satisfactorily consider construction tolerances and procedures? Is surface treatment, such as grinding and peening, adequately considered?

4.3.10 Do the fatigue life calculations consider degradation of coating performance under seawater environment?

4.3.11 Do the rules take slamming (e.g. whipping) and vibratory-induced fatigue effects (e.g. springing or propeller induced vibrations) into consideration? If not explicitly considered in fatigue assessment, is adequate justification provided?

4.3.12 Do the rules satisfactorily account for uncertainties or assumptions on fatigue life assessment?

4.3.13 Have the results from the fatigue life assessment methodology been benchmarked? Do the results compare favourably with service history and other standards?

5 Residual strength

5.1 Statement of intent

Confirm that the rules provide a reasonable level of residual strength after damage (e.g. collision, grounding and flooding).

5.2 Information and documentation requirements

5.2.1 Description of how ships designed to the rules with intact structure at net scantlings have sufficient ultimate strength to sustain flooding as defined in relevant IMO instruments.

5.2.2 Justification that ships designed to the rules have adequate residual strength to survive a casualty event. Include the following:

- .1 Description of the methodology used to assess residual strength.
- .2 Description of the flooding scenarios and the corresponding structural damage. Explanation of the relationship of the flooding scenarios with IMO instruments.
- .3 Description of the environmental conditions and period of exposure representative of the sea states expected for collision and grounding scenarios, and justification why they are appropriate.
- .4 Description of the acceptance criteria for residual strength of the ship in damaged condition, and justification if different from ultimate strength.
- .5 Where it is determined that the rules inherently provide adequate residual strength, justification should be provided that demonstrates through analysis of a range of representative ship designs and loading conditions.

5.2.3 Description of how the residual strength assessment procedure has been validated with experimental and/or casualty history data.

5.3 Evaluation criteria

5.3.1 Can a ship designed to the rules sustain flooding as defined in relevant IMO instruments and survive with intact structure at net scantlings?

5.3.2 Does a ship designed to the rules have sufficient residual strength to survive a more significant casualty event (e.g. flooding with structural damage due to collision or grounding) under environmental conditions consistent with the likelihood of occurrence? Are the assumed damage scenarios representative of the intent of damage in relevant IMO instruments?

5.3.3 Has the residual strength assessment procedure been validated with experimental and/or casualty data?

6 Protection against corrosion

6.1 Coating life

6.1.1 *Statement of intent*

Confirm that the coatings are properly selected and applied to protect the structure throughout the target useful life of the coating.

6.1.2 *Information and documentation requirements*

6.1.2.1 Provision of information on coating life and mandatory use of coatings, including:

- .1 mandatory locations and/or spaces where coatings are required to be used;
- .2 types of coating to be used for the various spaces;
- .3 required target useful life of the coating and explanation for selection; and
- .4 the coating performance standard to be followed (e.g. IMO PSPC¹ where mandated).

6.1.2.2 Description of the requirements to be followed in spaces where other corrosion prevention systems are used.

6.1.2.3 Description of the procedures used to verify that the selected coating system with associated surface preparation and application methods is compatible with the shipyard production processes.

6.1.2.4 Description of the procedures used to verify that the specified coating procedures have been followed.

6.1.2.5 If an alternative is proposed to that prescribed by IMO instruments, justification to support the selection of coating standards and target useful life of the coating or areas of application.

6.1.3 *Evaluation criteria*

6.1.3.1 Do the rules include appropriate requirements to achieve stated target useful life of the coating and fulfil SOLAS requirements as a minimum?

6.1.3.2 Do alternative or additional requirements allowed by the rules provide protection levels at least equivalent to those required by SOLAS?

6.1.3.3 Are the procedures indicated in 6.1.2.3 and 6.1.2.4 adequately documented in the rules?

6.1.3.4 Is adequate justification provided to support the use of alternatives to SOLAS or other IMO instruments?

¹ Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers, adopted by the Organization by resolution MSC.215(82), as amended.

6.2 Corrosion addition

6.2.1 *Statement of intent*

Confirm that the rules for corrosion addition values are rationally based and adequate for the specified design life.

6.2.2 *Information and documentation requirements*

6.2.2.1 Description of the methodology used to determine values for the design corrosion additions so that the scantlings remain above net scantlings over the specified design life.

6.2.2.2 Description of how assumed corrosion rates and rule design corrosion additions are determined based on ship type and location within the hull. Description should address how stress corrosion and any other modes of accelerated corrosion have been taken into consideration.

6.2.2.3 Description of any additional rule requirements that provide special consideration for other parameters such as unusual cargoes, loadings, trading patterns, material properties, etc.

6.2.2.4 Description of how corrosion of welds and heat-affected zones are considered.

6.2.2.5 Description of the steel/structure renewal criteria.

6.2.2.6 Description of how the methodology to determine corrosion addition and establish steel/structure renewal criteria has been validated against experimental and service history data.

6.2.3 *Evaluation criteria*

6.2.3.1 Does the methodology and supporting statistical data justify the corrosion additions?

6.2.3.2 Confirm that reductions in the rule design corrosion additions are prohibited.

6.2.3.3 Is consideration given to the corrosion of welds and heat-affected zones?

6.2.3.4 Do the rules clearly establish the steel/structure renewal criteria? For ships in service, do the renewal criteria provide for scantlings that are not less than the required net scantlings and that produce a hull girder section modulus within SOLAS requirements?

6.2.3.5 Has the methodology used to determine corrosion addition and establish steel/structure renewal criteria been benchmarked? Does it compare favourably with experimental and service history data?

7 Structural redundancy

7.1 *Statement of intent*

Confirm that the rules require sufficient redundancy to withstand localized damage in any one stiffening structural member.

7.2 *Information and documentation requirements*

7.2.1 Demonstration that the rules have adequate requirements to provide ship structural redundancy.

7.2.2 Description of the requirements for localized damage assessments, including where applicable, modelling in finite element structural analysis.

7.2.3 Description of how the methodology used to assess structural redundancy has been validated against experimental and/or service history data.

7.3 Evaluation criteria

7.3.1 Does a ship designed to the rules have sufficient structural redundancy to survive localized damage to a stiffening member?

7.3.2 Are the methods for assessing the consequences of localized damage satisfactorily described?

7.3.3 Has the methodology used to assess structural redundancy been validated? Does it compare favourably with experimental or casualty history data?

8 Watertight and weathertight integrity

8.1 Statement of intent

Confirm that the rules require adequate watertight and weathertight integrity for North Atlantic environmental conditions, including adequate strength for the closing arrangements and adequate redundancy for the securing devices.

8.2 Information and documentation requirements

8.2.1 Description of the rule requirements for watertight and weathertight integrity.

8.2.2 Description of how the rules consider criteria from IMO instruments for determining which openings in the hull envelope are required to be watertight or weathertight.

8.2.3 Explanation of the criteria used in the development of the rules to determine that the strength and redundancy for closing arrangements, if appropriate, of the watertight and weathertight openings is adequate for the environmental conditions and specified design life.

8.3 Evaluation criteria

8.3.1 Do the rules satisfy all relevant IMO watertight and weathertight integrity requirements?

8.3.2 Do the rules require sufficient strength for closing arrangements and securing devices to meet environmental conditions, design loads and specified design life? Do the rules require securing devices to have adequate redundancy?

9 Human element considerations

9.1 Statement of intent

Confirm that the rules incorporate human element and ergonomic considerations into the structural design and arrangement to facilitate operations, inspection and maintenance activity.

9.2 Information and documentation requirements

9.2.1 Description of how the rules consider human element and ergonomics during the structural design and arrangement of the ship, including:

- .1 stairs, vertical ladders, ramps, walkways and work platforms used for permanent means of access and/or for inspection and maintenance operations;
- .2 structural arrangements to facilitate the provision of adequate lighting and ventilation, and to minimize noise and vibration in spaces normally occupied or manned by shipboard personnel;
- .3 structural arrangements to facilitate the provision of adequate lighting and ventilation in tanks or closed spaces (e.g. duct keels, pipe tunnels, etc.) for periodic inspections, survey and maintenance; and
- .4 structural arrangements to facilitate emergency egress of inspection personnel or ships' crew from tanks, holds, voids, etc.

9.2.2 Description of how ergonomic design principles are factored into the design rules, including any guidance information provided to designers.

9.3 Evaluation criteria

9.3.1 Are human element and ergonomic considerations accounted for in the design of stairs, vertical ladders, ramps, walkways and work platforms?

9.3.2 Do the rules address structural or other arrangements to facilitate adequate lighting and ventilation in spaces normally manned or occupied by the crew?

9.3.3 Do the rules address structural or other measures to reduce the generation and transmission of vibration to a level at or below the acceptable ergonomic standards for spaces normally manned or occupied by the crew?

9.3.4 Do the rules address structural or other arrangements to facilitate adequate lighting and ventilation for the purposes of inspection, survey and maintenance?

9.3.5 Do the rules require structural arrangements to facilitate emergency egress from tanks or closed spaces?

10 Design transparency

10.1 Statement of intent

Confirm that the design and construction process is transparent, and that design information is clearly stated and made available to the classification society, the owner and the flag State, with due consideration to intellectual property rights.

10.2 Information and documentation requirements

10.2.1 Description of how the rules require design specific information as required by SOLAS regulation II-1/3-10 to be included in the Ship Construction File (SCF), including:

- .1 areas requiring special attention throughout the ship's life;
- .2 all design parameters limiting the operation of a ship;
- .3 any alternatives to the rules, including structural details and equivalency calculations;
- .4 "as built" drawings and information which are verified to incorporate all alterations approved by the recognized organization or flag State during the construction process;
- .5 procedures for updating the SCF throughout the ship's life;
- .6 net (renewal) scantlings for all the structural constituent parts; and
- .7 minimum hull girder section modulus along the length of the ship which has to be maintained throughout the ship's life.

10.2.2 Description of the process, requirements and criteria to be followed when assessing, documenting and communicating alternative methods as being equivalent to specific rule requirements.

10.2.3 Description of procedures for ensuring that all relevant design and construction information, including correspondence exchanged between shipyard and recognized organization, is available to the owner and flag State during the construction process.

10.3 Evaluation criteria

10.3.1 Do the rules establish requirements for including and updating design specific and critical information, including limitations, in the SCF?

10.3.2 Do the rules establish clear criteria and techniques for assessing alternative methods used in the design? Do the rules require that all equivalencies are documented in the SCF and are made available to the owner and/or flag State?

10.3.3 Do the rules establish procedures to provide all relevant design and construction information, including correspondence exchanged between shipyard and recognized organization, e.g. on net scantlings, corrosion margins used, etc., to be made available to the owner and flag State during the construction process?

CONSTRUCTION

11 Construction quality procedures

11.1 Statement of intent

Confirm that the rules contain provisions for ensuring that construction tolerances and procedures assumed during rule formulation are implemented during construction.

11.2 Information and documentation requirements

11.2.1 Demonstration that the rules require the shipyard's construction procedures and standards to meet a minimum level of quality. Include the following:

- .1 procedures for specifying the materials and their tracking;
- .2 assembly requirements, including alignment, joining, welding, surface preparation, coating, castings, heat treatment, etc.;
- .3 approval scheme of welding procedures;
- .4 qualification scheme of welders; and
- .5 requirements for yard fit-up and other quality control inspections.

11.2.2 Description of actions taken when a shipyard is determined as not meeting the minimum level of quality construction.

11.2.3 Description of the procedures followed when the "as built" is different than "design". Include the following:

- .1 Criteria for determining when review of the "as built" drawings is required.
- .2 Criteria for determining when re-evaluation for strength and/or fatigue life is required. This should include consideration of net scantlings where appropriate.

11.2.4 Description of the procedures for ensuring that construction tolerances are verified and maintained.

11.2.5 Description of the procedures used to continuously update the rules based on construction and in-service experience.

11.2.6 Description of how the quality construction requirements have been benchmarked with recognized international shipbuilding and repair quality standards.

11.3 Evaluation criteria

11.3.1 Are the construction tolerances used in rule formulations and calculations incorporated in the construction plan and verified during construction?

11.3.2 Do the quality requirements include continuous design improvement based on experience?

11.3.3 Have the rules' quality construction requirements been benchmarked? Do they compare favourably with recognized international shipbuilding and repair quality standards?

12 Survey during construction

12.1 Statement of intent

Confirm that the rules include provisions to ensure that the construction of ships is carried out to an acceptable quality level.

12.2 Information and documentation requirements

12.2.1 Description of the construction survey procedure requirements, including:

- .1 types of surveys (visual, non-destructive examination, etc.) depending on location, materials, welding, casting, coatings, etc.;
- .2 establishment of a construction survey schedule for all assembly stages from the kick-off meeting, through all major construction phases, up to delivery;
- .3 inspection/survey plan, including provisions for critical areas identified during design approval;
- .4 survey criteria for acceptance;
- .5 interaction with shipyard, including notification and documentation of survey results;
- .6 correction procedures to remedy construction defects;
- .7 list of items that would require scheduling or formal surveys;
- .8 qualification of surveyors;
- .9 determination and documentation of areas that need special attention throughout ship's life, including criteria used in making the determination; and
- .10 procedures for determining the number and qualifications of surveyors for a project.

12.2.2 Description of procedures for providing shipowner and/or flag Administration representatives results of construction surveys.

12.2.3 Description of the requirements for testing during survey, including test criteria.

12.2.4 Description of how the construction survey requirements have been benchmarked with recognized international shipbuilding and repair quality standards.

12.3 Evaluation criteria

12.3.1 Do the rules require the development of a Survey Plan that is reviewed during the initial kick-off meeting? Does the survey plan address activities during ship construction sufficient to verify the ship is built in accordance with the appropriate rules or standards and address all elements in 12.2.1?

12.3.2 Do the rules contain provisions that areas of high stress or fatigue risk identified during design approval are surveyed with adequate detail and extent during construction?

12.3.3 Do the rules have procedures to provide for an adequate number of qualified surveyors to carry out proposed surveys in accordance with the size of the project?

12.3.4 Is survey related correspondence between shipyard and recognized organization relating to ship design and construction made available to the owner and flag Administration?

12.3.5 Do the rules include acceptance criteria for all tests required? Are the test criteria based on rule formulation parameters?

12.3.6 Have the rules' construction survey requirements been benchmarked? Do they compare favourably with recognized international shipbuilding and repair quality standards?

IN-SERVICE CONSIDERATIONS

13 Survey and maintenance

13.1 Statement of intent

Verify that the rules provide for spaces of adequate size to facilitate survey and maintenance. Confirm that the rules provide for the identification of areas requiring special attention over the life of the ship based on design parameter selection.

13.2 Information and documentation requirements

13.2.1 Description of the rule requirements to provide for spaces of adequate size to facilitate ship survey and maintenance.

13.2.2 Description of rule requirements to identify items for inclusion in an in-service Survey Plan, including:

- .1 areas of high stress and with special fatigue considerations;
- .2 any other areas that need special attention throughout the ship's life, including criteria used in making the determination (e.g. wave impact loading, mechanical impact areas, special materials, etc.); and
- .3 structural design features that were selected on the basis of special in-service requirements.

13.3 Evaluation criteria

13.3.1 Do the rules include design requirements to provide for spaces of adequate size for ship survey and maintenance?

13.3.2 Do the rules contain provisions for the identification of areas of high stress or fatigue risk that require monitoring while in service?

13.3.3 Do the rules include provisions for the identification of structural design features selected on the basis of special in-service requirements?

13.3.4 Do the rules include provisions for the identification of any other areas needing special attention during the ship's life?

14 Structural accessibility

14.1 Statement of intent

Confirm that the rules include provisions to facilitate access for internal structural inspection and thickness measurements.

14.2 Information and documentation requirements

Description of rule requirements to facilitate overall and close-up inspections and thickness measurements of the internal structure. Include the following:

- .1 standards for access; and
- .2 requirements for development of an Access Plan.

14.3 Evaluation criteria

14.3.1 Are there provisions to provide for safe access to critical areas referred to in 13.2.2?

RECYCLING CONSIDERATIONS

15 Recycling

15.1 Statement of intent

Confirm that the rules require the listing of materials used for the construction of the hull structure with a view toward identification of environmentally acceptable or recyclable materials and the development of an inventory list.

15.2 Information and documentation requirements

15.2.1 Description of the rule requirements for listing of materials, including:

- .1 list of materials used for the construction of the hull structure;
- .2 provisions for listing of materials in the Ship Construction File; and
- .3 provisions for documenting changes to any of the above during the ship's service life.

15.3 Evaluation criteria

15.3.1 Do the rules include provisions for the listing of materials used for the construction of the hull structure within the scope of the Standard, including:

- .1 list of materials used for the construction of the hull structure; and
- .2 provisions for listing of materials in the Ship Construction File?

15.3.2 Do the rules include provisions for documenting changes to any of the above during the ship's service life?

APPENDIX 1
SUBMISSION TEMPLATE

1 <i>FLAG STATE INFORMATION</i>	
1 Name of flag State:	
2 Full contact details for the designated single point of contact:	
Name and title:	
Address:	
Telephone No.:	
Fax No.:	
Email address:	
3 Organization recognized by flag State:	

2 <i>RECOGNIZED ORGANIZATION INFORMATION</i>		
1 Name of recognized organization:		
2 Full contact details for the designated single point of contact:		
Name and title:		
Address:		
Telephone No.:		
Fax No.:		
Email address:		
3 Rules coverage:	Oil tanker	Bulk carrier

3 SELF-ASSESSMENT SUMMARY			
Functional requirement	Fully covered in rules	Not covered in rules	Comments
<i>Design</i>			
1 Design life			
2 Environmental conditions			
3 Structural strength			
4 Fatigue life			
5 Residual strength			
6 Protection against corrosion			
6.1 Coating life			
6.2 Corrosion addition			
7 Structural redundancy			
8 Watertight and weathertight integrity			
9 Human element considerations			
10 Design transparency			
<i>Construction</i>			
11 Construction quality procedures			
12 Survey during construction			
<i>In-service considerations</i>			
13 Survey and maintenance			
14 Structural accessibility			
<i>Recycling considerations</i>			
15 Recycling			

Note: The Submitter declares that the above Self-Assessment Summary Table has been compiled without infringing any confidential and/or proprietary information and represents a true self-assessment of the rules submitted for verification with the GBS functional requirements.

4 RULE LINKAGE SUMMARY TABLE

1 (Title and text of the relevant functional requirement)

1.1 (Text of the Statement of intent)

Information and documentation requirement	Regulation submitted (2)	Rule type (3)	Reference (4)
1.2.1 (Text) (1)			

Justification (If applicable) (5):

Evaluation criterion	Summarized comment (7)	Satisfied by rules (8)	Rule linkage (9)
1.3.1 (Text) (6)		(YES/NO)	

Detailed technical explanation (10):

Information and documentation requirement	Regulation submitted (2)	Rule type (3)	Reference (4)
1.2(n) (Text) (1)			

Justification (If applicable) (5):

Evaluation criterion	Summarized comment (7)	Satisfied by rules (8)	Rule linkage (9)
1.3(n) (Text) (6)		(YES/NO)	

Detailed technical explanation (10):

Note: The Submitter declares that the above Rule Linkage Summary Table has been compiled without infringing any confidential and/or proprietary information and represents a true reflection of its rules in relation to the GBS functional requirements.

Notes:

Section 4 of the submission template should be filled for each information and documentation element and its associated evaluation criterion, for each functional requirement.

- (1) Copy text of the relevant information and documentation requirement established in the Guidelines.
- (2) Indicate the file name or internet link or title of the hard copy where the information/documentation provided is found in the documentation package.
- (3) Specify type of information/documentation provided (public rule, internal procedure, unified requirement, guidelines, etc.).
- (4) Indicate the reference in the rules where the information is found.
- (5) Develop the justification required. If a justification is not required, detailed technical explanation should be submitted in any case.
- (6) Copy text of the evaluation criterion established in the Guidelines for the relevant information and documentation requirement.
- (7) Include a short comment explaining why the relevant evaluation criterion is satisfied.
- (8) Indicate if the relevant evaluation criterion is satisfied by rules according to self-assessment.
- (9) Specify all the rules locations where the relevant criterion is applied.
- (10) Provide a technical explanation showing why the evaluation criterion is said to be satisfied or why it is not satisfied.

APPENDIX 2

FORMAT FOR GBS AUDIT TEAM REPORTS

1 EXECUTIVE SUMMARY

- 1.1 Subject of audit
- 1.2 Scope of verification audit (e.g. audit plan)
- 1.3 Findings of audit
- 1.4 Recommendation of the GBS audit team

2 SUBMISSION OF PARTICULARS

- 2.1 Submitting Administration(s)
- 2.2 Recognized organization name (if applicable)
- 2.3 Title and revision date of rules submitted
- 2.4 Submission date
- 2.5 Report type: [Interim] [Final]
- 2.6 GBS audit team members

3 AUDIT SUMMARY

Functional requirement	Conforming	Not conforming	Summary comment
Design			
1 Design life			
2 Environmental conditions			
3 Structural strength			
4 Fatigue life			
5 Residual strength			
6 Protection against corrosion			
6.1 Coating life			
6.2 Corrosion addition			
7 Structural redundancy			
8 Watertight and weathertight integrity			
9 Human element considerations			
10 Design transparency			
Construction			
11 Construction quality procedures			
12 Survey during construction			
In-service considerations			
13 Survey and maintenance			
14 Structural accessibility			
Recycling considerations			
15 Recycling			

4 MODEL FORM FOR AUDIT FINDINGS

FINDINGS	
Recognized organization:	Functional requirement:
Audit date:	
Non-conformity No.:	Observation No.:
FINDINGS:	
APPLICABLE PROVISION OF THE AUDIT STANDARD:	
Auditor:	Date:
Team leader:	Date:
Recognized organization:	Date received:

APPENDIX 3

FORMAT FOR SUBMISSION ON RECTIFICATION OF NON-CONFORMITY

Non-conformity No.: XXXX/YYYY/NCxx (as given in audit report)

Extract from rule linkage summary table (as applicable to show original submission information)

Information and documentation	Regulation submitted	Information/Documentation type	Reference

Justification
(if applicable):

Evaluation criteria	Summarized comment	Satisfied by information/documentation	Rule linkage

Detailed technical explanation:

AUDIT FINDINGS (extract from audit report with details of non-conformity):

Statement of facts

Non-conformity

INVESTIGATION AND ACTION TAKEN:

(list what has been done to address the non-conformity)

ANNEXES:

(list and attach the detailed action plan, rule changes/other evidence, rule linkage addressing all non-conformities)

ANNEX 4

DRAFT AMENDMENTS TO THE IBC CODE

Chapter 15

Special requirements

- 1 Section 15.15 is replaced by the following:

"15.15 Hydrogen sulphide (H₂S) detection equipment for bulk liquids

Hydrogen sulphide (H₂S) detection equipment shall be provided on board ships carrying bulk liquids prone to H₂S formation. It should be noted that scavengers and biocides, when used, may not be a 100% effective in controlling the formation of H₂S."

Chapter 16

Operational requirements

- 2 Paragraph 16.2.7 is replaced by the following:

"16.2.7 Where *column o* in the table of chapter 17 refers to this paragraph, the cargo is subject to the prewash requirements in regulation 13.7.1.4 of Annex II of MARPOL"

- 3 The complete text of chapters 17, 18 and 19 is replaced by the following:

"Chapter 17

Summary of minimum requirements

17.1 Mixtures of noxious liquid substances presenting pollution hazards only, and which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II, may be carried under the requirements of the Code applicable to the appropriate position of the entry in this chapter for Noxious Liquid Substances, not otherwise specified (n.o.s.).

17.2 EXPLANATORY NOTES

Product name (<i>column a</i>)	The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.
UN Number (<i>column b</i>)	Deleted
Pollution Category (<i>column c</i>)	The letter X, Y, Z means the Pollution Category assigned to each product under MARPOL Annex II.

Hazards (column d)	"S" means that the product is included in the Code because of its safety hazards; "P" means that the product is included in the Code because of its pollution hazards; and "S/P" means that the product is included in the Code because of both its safety and pollution hazards.
Ship type (column e)	1: ship type 1 (2.1.2.1) 2: ship type 2 (2.1.2.2) 3: ship type 3 (2.1.2.3)
Tank type (column f)	1: independent tank (4.1.1) 2: integral tank (4.1.2) G: gravity tank (4.1.3) P: pressure tank (4.1.4)
Tank vents (column g)	Cont.: controlled venting Open: open venting
Tank environmental control (column h)	Inert: inerting (9.1.2.1) Pad: liquid or gas padding (9.1.2.2) Dry: drying (9.1.2.3) Vent: natural or forced ventilation (9.1.2.4) No: no special requirements under this Code (inerting may be required under SOLAS)
Electrical equipment (column i)	Temperature classes (i ') T1 to T6 - indicates no requirements blank no information Apparatus group (i ' ') IIA, IIB or IIC: - indicates no requirements blank no information Flash point (i ' ' ') Yes: flashpoint exceeding 60°C (10.1.6) No: flashpoint not exceeding 60°C (10.1.6) NF: nonflammable product (10.1.6)
Gauging (column j)	O: open gauging (13.1.1.1) R: restricted gauging (13.1.1.2) C: closed gauging (13.1.1.3)
Vapour detection (column k)	F: flammable vapours T: toxic vapours No: indicates no special requirements under this Code
Fire protection (column l)	A: alcohol-resistant foam or multi-purpose foam B: regular foam; encompasses all foams that are not of an alcohol-resistant type, including fluoro-protein and aqueous-film-forming foam (AFFF) C: water-spray D: dry chemical No: no special requirements under this Code
Materials of construction (column m)	Deleted
Emergency equipment (column n)	Yes: see 14.3.1 No: no special requirements under this Code
Specific and operational requirements (column o)	When specific reference is made to chapters 15 and/or 16, these requirements shall be additional to the requirements in any other column.

a	c	d	e	f	g	h	i'	ii''	iii'''	j	k	l	n	o
Acetic acid	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	F	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.17, 15.19, 16.2.9
Acetic anhydride	Z	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6
Acetochlor	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Acetone cyanohydrin	Y	S/P	1	1G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Acetonitrile	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Acetonitrile (Low purity grade)	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Acid oil mixture from soyabean, corn (maize) and sunflower oil refining	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Acrylamide solution (50% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12, 15.13, 15.17, 15.19, 16.2.9, 16.6.1
Acrylic acid	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.13, 15.17, 15.19, 16.2.9, 16.6.1
Acrylic acid/ethenesulphonic acid copolymer with phosphonate groups, sodium salt solution copolymer with phosphonate groups, sodium salt solution	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Acrylonitrile	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	AC	Yes	15.12, 15.13, 15.17, 15.19
Acrylonitrile-Styrene copolymer dispersion in polyether polyol	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Adiponitrile	Z	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alachlor technical (90% or more)	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Alcohol (C9-C11) poly (2.5-9) ethoxylate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C6-C17) (secondary) poly(3-6)ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alcohol (C6-C17) (secondary) poly(7-12)ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alcohol (C10-C18) poly(7) ethoxylate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alcohol (C12-C16) poly(1-6)ethoxylates	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C12-C16) poly(20+)ethoxylates	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Alcohol (C12-C16) poly(7-19)ethoxylates	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alcohols (C13+)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Alcohols (C12+), primary, linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alcohols (C8-C11), primary, linear and essentially linear	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alcohols (C12-C13), primary, linear and essentially linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alcohols (C14-C18), primary, linear and essentially linear	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkanes (C5-C7), linear and branched	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Alkanes (C6-C9)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Alkanes (C10-C17), linear and branched	Y	S/P	2	2G	Cont	Inert	T3	IIB	No	R	F	ABC	No	15.19
Alkanes (C10-C26), linear and branched (flashpoint ≤60°C)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Iso- and cyclo-alkanes (C10-C11)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Iso- and cyclo-alkanes (C12+)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Alkanes (C10-C26), linear and branched, (flashpoint >60°C)	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
n-Alkanes (C9-C11)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
n-Alkanes (C10 – C20)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkaryl polyethers (C9-C20)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6
Alkenoic acid, polyhydroxy ester borated	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkenyl (C11+) amide	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkenyl (C16-C20) succinic anhydride	Z	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Alkyl acrylate/vinylpyridine copolymer in toluene	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers)	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Alkylated (C4-C9) hindered phenols	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alkylbenzene, alkylindane, alkylindene mixture (each C12-C17)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Alkyl benzene distillation bottoms	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkylbenzene mixtures (containing at least 50% of toluene)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alkylbenzenes mixtures (containing naphthalene)	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Alkyl (C3-C4) benzenes	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C5-C8) benzenes	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Alkyl(C9+)benzenes	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Alkyl (C11-C17) benzene sulphonic acid	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkylbenzene sulphonic acid, sodium salt solution	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl/cyclo (C4-C5) alcohols	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C10-C15, C12 rich) phenol poly (4-12) ethoxylate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkyl (C12+) dimethylamine	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Alkyl dithiocarbamate (C19-C35)	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkyldithiothiadiazole (C6-C24)	Y	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6
Alkyl ester copolymer (C4-C20)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Alkyl (C7-C9) nitrates	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 15.20, 16.6.1, 16.6.2, 16.6.3
Alkyl (C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl (C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution(55% or less)	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Alkyl(C7-C11)phenol poly(4-12) ethoxylate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alkyl (C8-C40) phenol sulphide	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Alkyl (C8-C9) phenylamine in aromatic solvents	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C9-C15) phenyl propoxylate	Z	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Alkyl (C8-C10) polyglucoside solution (65% or less)	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl (C12-C14) polyglucoside solution (55% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Alkyl (C12-C16) propoxyamine ethoxylate	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6
Alkyl (C10-C20, saturated and unsaturated) phosphite	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Alkyl sulphonic acid ester of phenol	Y	P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkyl (C18+) toluenes	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Alkyl(C18-C28) toluenesulphonic acid	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.6, 16.2.9
Alkyl(C18-C28) toluenesulphonic acid, calcium salts, borated	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Alkyl (C18-C28) toluenesulfonic acid, calcium salts, low overbase	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase	Y	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Allyl alcohol	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Allyl chloride	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Aluminium chloride/Hydrogen chloride solution	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Aluminium sulphate solution	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
2-(2-Aminoethoxy) ethanol	Z	S/P	3	2G	Cont	No			Yes	C	T	AD	Yes	15.12, 15.17, 15.19
Aminoethyldiethanolamine/Aminoethylethanolamine solution	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Aminoethyl ethanolamine	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
N-Aminoethylpiperazine	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
2-Amino-2-methyl-1-propanol	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Ammonia aqueous (28% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Ammonium chloride solution (less than 25%) (*)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	
Ammonium hydrogen phosphate solution	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Ammonium lignosulphonate solutions	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Ammonium nitrate solution (93% or less) (*)	Z	S/P	2	1G	Cont	No			NF	R	T	No	No	15.2, 15.11.4, 15.11.6, 15.12.3, 15.12.4, 15.18, 15.19.6, 16.2.9
Ammonium polyphosphate solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Ammonium sulphate solution	Z	P	3	2G	Open	No			NF	O	No	No	No	
Ammonium sulphide solution (45% or less) (*)	Y	S/P	2	2G	Cont	Inert	T4	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Ammonium thiosulphate solution (60% or less)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	
Amyl acetate (all isomers)	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
n-Amyl alcohol	Z	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Amyl alcohol, primary	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
sec-Amyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
tert-Amyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
tert-Amyl ethyl ether	Z	P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
tert-Amyl methyl ether	X	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Aniline	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Aryl polyolefins (C11-C50)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 - 120°C)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Barium long chain (C11-C50) alkaryl sulphonate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Benzene and mixtures having 10% benzene or more (i)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Benzene sulphonyl chloride	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Benzenetricarboxylic acid, trioctyl ester	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Benzyl acetate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Benzyl alcohol	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Benzyl chloride	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint >60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint ≤ 60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and vegetable oil (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of jet fuels and Alkanes (C10-C17), linear and branched (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Bis(2-ethylhexyl) terephthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Brake fluid base mix: Poly(2-8)alkylene (C2-C3) glycols/Polyalkylene (C2-C10) glycols monoalkyl (C1-C4) ethers and their borate esters	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Bromochloromethane	Z	P	3	2G	Open	No			NF	O	No	No	No	
Butene oligomer	X	P	2	2G	Cont	No	T4	IIB	No	R	F	ABC	No	15.19.6
2-Butoxyethanol (58%)/Hyperbranched polyesteramide (42%) (mixture)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12.3, 15.12.4, 15.19
Butyl acetate (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Butyl acrylate (all isomers)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
tert-Butyl alcohol	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6
Butylamine (all isomers)	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Butylbenzene (all isomers)	X	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Butyl benzyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Butyl butyrate (all isomers)	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Open	No	T3	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Butylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
1,2-Butylene oxide	Y	S/P	3	2G	Cont	Inert	T2	IIB	No	C	FT	AC	No	15.8.1 to 15.8.7, 15.8.12, 15.8.13, 15.8.16, 15.8.17, 15.8.18, 15.8.19, 15.8.21, 15.8.25, 15.8.27, 15.8.29, 15.12, 15.17, 15.19.6
n-Butyl ether	Y	S/P	3	2G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.4.6, 15.19
Butyl methacrylate	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
n-Butyl propionate	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Butyraldehyde (all isomers)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Butyric acid	Y	S/P	3	2G	Cont	No			Yes	O	No	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6
gamma-Butyrolactone	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Calcium alkaryl sulphonate (C11-C50)	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Calcium alkyl (C10-C28) salicylate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Calcium hydroxide slurry	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Calcium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6
Calcium hypochlorite solution (more than 15%)	X	S/P	1	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19
Calcium lignosulphonate solutions	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Calcium long-chain alkyl (C5-C10) phenate	Y	P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Calcium long-chain alkyl (C11-C40) phenate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Calcium long-chain alkyl phenate sulphide (C8-C40)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Calcium long-chain alkyl salicylate (C13+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Calcium long-chain alkyl (C18-C28) salicylate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Calcium nitrate/Magnesium nitrate/Potassium chloride solution	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Calcium nitrate solution (50% or less)	Z	S	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Camelina oil	Y	S/P	2(k)	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
epsilon-Caprolactam (molten or aqueous solutions)	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Carbolic oil	Y	S/P	2	2G	Cont	No			Yes	C	FT	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Carbon disulphide	Y	S/P	1	1G	Cont	Pad+inert	T6	IIC	No	C	FT	C	Yes	15.3, 15.12, 15.17, 15.18, 15.19
Carbon tetrachloride	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
Cashew nut shell oil (untreated)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Castor oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Cesium formate solution (*)	Y	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.13, 15.19.6, 16.2.9, 16.6.1, 16.6.2

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Chlorinated paraffins (C10-C13)	X	S/P	1	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19, 16.2.6
Chlorinated paraffins (C14-C17) (with 50% chlorine or more, and less than 1% C13 or shorter chains)	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	AC	No	15.12, 15.17, 15.19
Chloroacetic acid (80% or less)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.18, 15.19, 16.2.9
Chlorobenzene	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Chloroform	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
Chlorohydrins (crude)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
o-Chloronitrobenzene	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
1-(4-Chlorophenyl)-4,4- dimethyl-pentan-3-one	Y	S/P	2	2G	Open	No			Yes	O	No	ABD	No	15.19.6, 16.2.6, 16.2.9
2- or 3-Chloropropionic acid	Z	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19, 16.2.9
Chlorosulphonic acid	Y	S/P	1	2G	Cont	No			NF	C	T	No	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.5, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.17, 15.18, 15.19
m-Chlorotoluene	Y	S/P	2	2G	Cont	No	T4	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19
o-Chlorotoluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
p-Chlorotoluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Chlorotoluenes (mixed isomers)	Y	P	2	2G	Cont	No	T4	IIA	No	R	F	ABC	No	15.19.6
Choline chloride solutions	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Citric acid (70% or less)	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Coal tar	X	S/P	2	2G	Cont	No	T2	IIA	Yes	C	T	BD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Coal tar naphtha solvent	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Coal tar pitch (molten) (*)	X	S/P	2	1G	Cont	No	T2	IIA	Yes	C	T	ABCD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Cocoa butter	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil fatty acid	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Coconut oil fatty acid methyl ester	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Copper salt of long chain (C17+) alkanolic acid	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Corn Oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Cotton seed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Creosote (coal tar)	X	S/P	1	2G	Cont	No	T2	IIA	Yes	C	T	AD	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Cresols (all isomers)	Y	S/P	1	2G	Cont	No	T1	IIA	Yes	C	T	ABC	Yes	15.12, 15.18, 15.19, 16.2.9
Cresol/Phenol/Xylenol mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Cresylic acid, dephenolized	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Cresylic acid, sodium salt solution	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Crotonaldehyde	X	S/P	1	1G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
1,5,9-Cyclododecatriene	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Cycloheptane	X	S/P	2	2G	Cont	No	T4	IIA	No	R	F	AC	No	15.19.6
Cyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Cyclohexane-1,2-dicarboxylic acid, diisononyl ester	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Cyclohexane oxidation products, sodium salts solution	Z	P	3	2G	Open	No			NF	O	No	No	No	
Cyclohexanol	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Cyclohexanone	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Cyclohexanone, Cyclohexanol mixture	Y	S/P	3	2G	Cont	No			Yes	R	F	AC	No	15.19.6
Cyclohexyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Cyclohexylamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
1,3-Cyclopentadiene dimer (molten)	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
Cyclopentane	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Cyclopentene	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
p-Cymene	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Decahydronaphthalene	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Decanoic acid	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Decene	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Decyl acrylate	X	S/P	1	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.13, 15.19, 16.6.1, 16.6.2
Decyl alcohol (all isomers)	Y	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9(e)
Decyl/Dodecyl/Tetradecyl alcohol mixture	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Decyloxytetrahydrothiophene dioxide	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Diacetone alcohol	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Dialkyl (C8-C9) diphenylamines	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Dialkyl (C7-C13) phthalates	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6
Dialkyl (C9-C10) phthalates	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Dialkyl thiophosphates sodium salts solution	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
2,6-Diaminohexanoic acid phosphonate mixed salts solution	Z	S/P	3	2G	Cont	No			NF	R	No	No	No	15.11, 15.17, 15.19.6
Dibromomethane	Y	S/P	2	2G	Open	No			NF	O	No	No	No	15.19.6
Dibutylamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Dibutyl hydrogen phosphonate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2,6-Di-tert-butylphenol	X	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Dibutyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Dibutyl terephthalate	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Dichlorobenzene (all isomers)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABD	No	15.12, 15.17, 15.19.6
3,4-Dichloro-1-butene	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
1,1-Dichloroethane	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Dichloroethyl ether	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
1,6-Dichlorohexane	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
2,2'-Dichloroisopropyl ether	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19
Dichloromethane	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
2,4-Dichlorophenol	Y	S/P	2	2G	Cont	Dry			Yes	C	T	AD	Yes	15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution (70% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
1,1-Dichloropropane	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
1,2-Dichloropropane	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
1,3-Dichloropropene	X	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Dichloropropene/Dichloropropane mixtures	X	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	ABD	No	15.12, 15.17, 15.19

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2,2-Dichloropropionic acid	Y	S/P	2	2G	Cont	Dry			Yes	C	T	AD	Yes	15.11.2, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.9
Dicyclopentadiene, Resin Grade, 81-89%	Y	S/P	2	2G	Cont	Inert	T2	IIB	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Diethanolamine	Y	S/P	3	2G	Cont	No	T1	IIA	Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Diethylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Diethylaminoethanol	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
2,6-Diethylaniline	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Diethylbenzene	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diethylene glycol	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Diethylene glycol dibutyl ether	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Diethylene glycol diethyl ether	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Diethylene glycol phthalate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Diethylenetriamine	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19
Diethylenetriaminepentaacetic acid, pentasodium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Diethyl ether (*)	Z	S/P	2	1G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.4, 15.14, 15.19
Di-(2-ethylhexyl) adipate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Di-(2-ethylhexyl) phosphoric acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AD	No	15.12.3, 15.12.4, 15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Diethyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6
Diethyl sulphate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Diglycidyl ether of bisphenol A	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Diglycidyl ether of bisphenol F	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.6
Diheptyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Di-n-hexyl adipate	X	S/P	1	2G	Open	No			Yes	O	No	AC	No	15.19
Dihexyl phthalate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Diisobutylamine	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	ABC	No	15.12.3, 15.12.4, 15.19
Diisobutylene	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Diisobutyl ketone	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diisobutyl phthalate	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Diisononyl adipate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diisooctyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Diisopropanolamine	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Diisopropylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.17, 15.19.6
Diisopropylbenzene (all isomers)	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Diisopropyl-naphthalene	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
N,N-Dimethylacetamide	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
N,N-Dimethylacetamide solution (40% or less)	Z	S/P	3	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6
Dimethyl adipate	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9

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Dimethylamine solution (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Dimethylamine solution (greater than 45% but not greater than 55%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Dimethylamine solution (greater than 55% but not greater than 65%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19
N,N-Dimethylcyclohexylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Dimethyl disulphide	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
N,N-Dimethyldodecylamine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Dimethylethanolamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Dimethylformamide	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Dimethyl glutarate	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Dimethyl hydrogen phosphite	Y	S/P	3	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6
Dimethyl octanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Dimethyl phthalate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Dimethylpolysiloxane	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
2,2-Dimethylpropane-1,3-diol (molten or solution)	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	16.2.9
Dimethyl succinate	Y	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Dinitrotoluene (molten)	X	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19, 15.21, 16.2.6, 16.2.9, 16.6.4
Dinonyl phthalate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diocetyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,4-Dioxane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Dipentene	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Diphenyl	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Diphenylamine (molten)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Diphenylamine, reaction product with 2,2,4-Trimethylpentene	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19, 16.2.6
Diphenylamines, alkylated	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9
Diphenyl/Diphenyl ether mixtures	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Diphenyl ether	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Diphenyl ether/Diphenyl phenyl ether mixture	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Diphenylmethane diisocyanate	Y	S/P	2	2G	Cont	Dry	-	-	Yes(a)	C	T(a)	AB(b)D	Yes	15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9
Diphenylol propane-epichlorohydrin resins	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Di-n-propylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	Yes	15.12.3, 15.12.4, 15.17, 15.19.6
Dipropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Dithiocarbamate ester (C7-C35)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Ditridecyl adipate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Ditridecyl phthalate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Diundecyl phthalate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Dodecane (all isomers)	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
tert-Dodecanethiol	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
1-Dodecene	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Dodecene (all isomers)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Dodecyl alcohol	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
n-Dodecyl mercaptan	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Dodecylamine/Tetradecylamine mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Dodecylbenzene	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Dodecyl diphenyl ether disulphonate solution	X	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.6
Dodecyl hydroxypropyl sulphide	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6
Dodecyl methacrylate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.13, 15.19.6
Dodecyl/Octadecyl methacrylate mixture	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.13, 15.19.6, 16.2.6, 16.6.1, 16.6.2
Dodecyl/Pentadecyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Dodecyl phenol	X	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6
Dodecyl Xylene	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Drilling brines (containing zinc chloride)	X	S/P	2	2G	Open	No			NF	O	No	No	Yes	15.19.6
Drilling brines (containing calcium bromide)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Epichlorohydrin	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Ethanolamine	Y	S/P	3	2G	Cont	No	T2	IIA	Yes	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Ethoxyethyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Ethoxylated long chain (C16+) alkyloxyalkylamine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Ethoxylated tallow amine (>95%)	X	S/P	2	2G	Cont	Inert	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Ethyl acetate	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Ethyl acetoacetate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Ethyl acrylate	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
Ethylamine (*)	Y	S/P	2	1G	Cont	No	T2	IIA	No	C	F	AC	No	15.12.3.2, 15.14, 15.19
Ethylamine solutions (72% or less)	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	F	AC	No	15.12.3.2, 15.14, 15.19
Ethyl amyl ketone	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylbenzene	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Ethyl tert-butyl ether	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethyl butyrate	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
N-Ethylcyclohexylamine	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
S-Ethyl dipropylthiocarbamate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Ethylene carbonate	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Ethylene chlorohydrin	Y	S/P	1	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
Ethylene cyanohydrin	Y	S/P	2	2G	Cont	No		IIB	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylenediamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Ethylenediaminetetraacetic acid, tetrasodium salt solution	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Ethylene dibromide	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19, 16.2.9
Ethylene dichloride	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19
Ethylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Ethylene glycol acetate	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Ethylene glycol butyl ether acetate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Ethylene glycol diacetate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6
Ethylene glycol methyl ether acetate	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Ethylene glycol monoalkyl ethers	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.9
Ethylene glycol phenyl ether	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9,
Ethylene glycol phenyl ether/Diethylene glycol phenyl ether mixture	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Ethylene glycol (>75%)/sodium alkyl carboxylates/borax mixture	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Ethylene glycol (>85%)/sodium alkyl carboxylates mixture	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Ethylene oxide/Propylene oxide mixture with an ethylene oxide content of not more than 30% by mass	Y	S/P	2	1G	Cont	Inert	T2	IIB	No	C	FT	AC	Yes	15.8, 15.12, 15.14, 15.17, 15.19
Ethylene-vinyl acetate copolymer (emulsion)	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Ethyl-3-ethoxypropionate	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
2-Ethylhexanoic acid	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
2-Ethylhexyl acrylate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.13, 15.19.6, 16.6.1, 16.6.2
2-Ethylhexylamine	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19.6
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol (C8-C10) ester	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Ethylidene norbornene	Y	S/P	2	2G	Cont	No	T3	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Ethyl methacrylate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
N-Ethylmethylallylamine	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
Ethyl propionate	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
2-Ethyl-3-propylacrolein	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Ethyl toluene	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Fatty acid (saturated C13+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Fatty acid methyl esters (m)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9

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Fatty acids, (C8-C10)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Fatty acids, (C12+)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Fatty acids, (C16+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Fatty acids, essentially linear (C6-C18) 2-ethylhexyl ester	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Ferric chloride solutions	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19, 16.2.9
Ferric nitrate/Nitric acid solution	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Fish oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Fish silage protein concentrate (containing 4% or less formic acid)	Y	P	2	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.6
Fish protein concentrate (containing 4% or less formic acid)	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	
Fluorosilicic acid solution (20-30%)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Formaldehyde solutions (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Formamide	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Formic acid (85% or less acid)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T(g)	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9
Formic acid (over 85%)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT(g)	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9

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Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate)	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T(g)	AC	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6
Furfural	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Furfuryl alcohol	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Glucitol/glycerol blend propoxylated (containing less than 10% amines)	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Glucitol/glycerol blend propoxylated (containing 10% or more amines)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Glutaraldehyde solutions (50% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Glycerine	Z	S	3	2G	Open	No			Yes	O	No	AC	No	16.2.9
Glycerol monooleate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Glycerol propoxylated	Z	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Glycerol, propoxylated and ethoxylated	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Glycerol/sucrose blend propoxylated and ethoxylated	Z	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Glyceryl triacetate	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Glycidyl ester of C10 trialkylacetic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Glycine, sodium salt solution	Z	S/P	3	2G	Open	No			NF	O	No	No	No	
Glycolic acid solution (70% or less)	Z	S/P	3	2G	Cont	No	-	-	NF	C	T	No	Yes	15.12.3, 15.12.4, 15.17, 15.19, 16.2.9
Glyoxal solution (40% or less)	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9

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Glyoxylic acid solution (50% or less)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	ACD	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9, 16.6.1, 16.6.2, 16.6.3
Glyphosate solution (not containing surfactant)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Grape Seed Oil	Y	S/P	2(k)	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
Groundnut oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Heptane (all isomers)	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
n-Heptanoic acid	Z	S/P	3	2G	Cont	No			Yes	R	No	ABC	No	15.19.6, 15.17
Heptanol (all isomers) (d)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Heptene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Heptyl acetate	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
1-Hexadecylnaphthalene / 1,4-bis(hexadecyl)naphthalene mixture	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Hexamethylenediamine (molten)	Y	S/P	3	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Hexamethylenediamine adipate (50% in water)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Hexamethylenediamine solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Hexamethylene diisocyanate	Y	S/P	2	2G	Cont	Dry	T1	IIB	Yes	C	T	AC(b)D	Yes	15.12, 15.16.2, 15.17, 15.18, 15.19
Hexamethylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Hexamethyleneimine	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19
Hexamethylenetetramine solutions	Z	S	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Hexane (all isomers)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6

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1,6-Hexanediol, distillation overheads	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Hexanoic acid	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Hexanol	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Hexene (all isomers)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Hexyl acetate	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
Hexylene glycol	Z	S	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Hydrocarbon wax	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Hydrochloric acid (*)	Z	S/P	3	1G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Hydrogen peroxide solutions (over 60% but not over 70% by mass)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.5.1, 15.12.3, 15.12.4, 15.19.6
Hydrogen peroxide solutions (over 8% but not over 60% by mass)	Y	S/P	3	2G	Cont	No			NF	R	T	No	No	15.5.2, 15.18, 15.12.3, 15.12.4, 15.19.6
2-Hydroxyethyl acrylate	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
2-Hydroxy-4-(methylthio)butanoic acid	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Illipe oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Isoamyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Isobutyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Isobutyl formate	Z	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Isobutyl methacrylate	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2
Isophorone	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6

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Isophoronediamine	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Isophorone diisocyanate	Y	S/P	2	2G	Cont	Dry			Yes	C	T	ABD	Yes	15.12, 15.16.2, 15.17, 15.19
Isoprene	Y	S/P	2	2G	Cont	No	T3	IIB	No	C	FT	ABC	No	15.12, 15.13, 15.14, 15.17, 15.19.6, 16.6.1, 16.6.2
Isopropanolamine	Y	S/P	3	2G	Cont	No	T2	IIA	Yes	R	No	AC	No	15.19.6, 16.2.6, 16.2.9
Isopropyl acetate	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Isopropylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3.2, 15.14, 15.19
Isopropylamine (70% or less) solution	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3.2, 15.19
Isopropylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Isopropyl ether	Y	S/P	3	2G	Cont	Inert	T2	IIA	No	R	F	AC	No	15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2
Jatropha oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7
Lactic acid	Z	S/P	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Lactonitrile solution (80% or less)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.12, 15.13, 15.17, 15.18, 15.19, 16.6.1, 16.6.2, 16.6.3
Lard	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Latex, ammonia (1% or less)- inhibited	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Latex: Carboxylated styrene-Butadiene copolymer; Styrene-Butadiene rubber	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Lauric acid	X	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Ligninsulphonic acid, magnesium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	

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Ligninsulphonic acid, sodium salt solution	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Linseed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Liquid chemical wastes	X	S/P	2	2G	Cont	No			No	C	FT	AC	No	15.12, 15.17, 15.19, 20.5.1, 20.7
Long-chain alkaryl polyether (C11-C20)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Long-chain alkaryl sulphonic acid (C16-C60)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Long-chain alkylphenate/Phenol sulphide mixture	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Long-chain alkylphenol (C14-C18)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Long-chain alkylphenol (C18-C30)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
L-Lysine solution (60% or less)	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Magnesium chloride solution	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Magnesium hydroxide slurry	Z	S	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Magnesium long-chain alkaryl sulphonate (C11-C50)	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Magnesium long-chain alkyl salicylate (C11+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Maleic anhydride	Y	S/P	3	2G	Cont	No			Yes	C	T	AC(f)	Yes	15.12, 15.17, 15.19, 16.2.9

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Maleic anhydride-sodium allylsulphonate copolymer solution	Z	P	3	2G	Open	No			Yes	O	No	ABC	No	
Mango kernel oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Mercaptobenzothiazol, sodium salt solution	X	S/P	2	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Mesityl oxide	Z	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Metam sodium solution	X	S/P	2	2G	Cont	No	-	-	NF	C	T	No	No	15.12.3, 15.12.4, 15.19
Methacrylic acid	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.13, 15.12.3, 15.12.4, 15.19, 16.2.9, 16.6.1
Methacrylic acid - alkoypoly (alkylene oxide) methacrylate copolymer, sodium salt aqueous solution (45% or less)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Methacrylic resin in ethylene dichloride	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19, 16.2.9
Methacrylonitrile	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.12, 15.13, 15.17, 15.19
3-Methoxy-1-butanol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6
3-Methoxybutyl acetate	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide	X	S/P	1	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19, 16.2.6
Methyl acetate	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6
Methyl acetoacetate	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Methyl acrylate	Y	S/P	3	2G	Cont	No	T1	IIB	No	C	FT	AC	No	15.12, 15.17, 15.13, 15.19
Methyl alcohol (*)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.1, 15.12.2, 15.12.3.2, 15.12.3.3, 15.12.4, 15.17, 15.19

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Methylamine solutions (42% or less)	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19
Methylamyl acetate	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Methylamyl alcohol	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl amyl ketone	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
N-Methylaniline	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
alpha-Methylbenzyl alcohol with acetophenone (15% or less)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Methylbutenol	Y	S/P	3	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Methyl tert-butyl ether	Z	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Methyl butyl ketone	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Methylbutynol	Z	S/P	3	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6
Methyl butyrate	Y	S/P	3	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Methylcyclohexane	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Methylcyclopentadiene dimer	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methylcyclopentadienyl manganese tricarbonyl	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.18, 15.19, 16.2.9
Methyl diethanolamine	Y	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
2-Methyl-6-ethyl aniline	Y	S/P	3	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl ethyl ketone	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	F	AC	No	15.19.6

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2-Methyl-5-ethyl pyridine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Methyl formate	Z	S/P	2	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19.6
2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less)	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
2-Methyl-2-hydroxy-3-butyne	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6, 16.2.9
Methyl isobutyl ketone	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl methacrylate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.13, 15.19.6
3-Methyl-3-methoxybutanol	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Methyl naphthalene (molten)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
N-Methylglucamine solution (70% or less)	Z	S	3	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Methyl-1,3-propanediol	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
2-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	F	AC	No	15.12.3.2, 15.19
3-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
4-Methylpyridine	Z	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19, 16.2.9
N-Methyl-2-pyrrolidone	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Methyl propyl ketone	Z	S	3	2G	Cont	No	T1	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Methyl salicylate	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
alpha-Methylstyrene	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	AD(j)	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
3-(methylthio)propionaldehyde	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12, 15.17, 15.19.6

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Molybdenum polysulfide long chain alkyl dithiocarbamide complex	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Morpholine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12.3, 15.12.4, 15.19
Motor fuel anti-knock compound (containing lead alkyls)	X	S/P	1	1G	Cont	Inert	T4	IIA	No	C	FT	AC	Yes	15.6, 15.12, 15.17, 15.18, 15.19
Myrcene	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Naphthalene (molten)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.9
Naphthalene crude (molten)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Naphthalenesulphonic acid-Formaldehyde copolymer, sodium salt solution	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Neodecanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Nitrating acid (mixture of sulphuric and nitric acids)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.18, 15.19
Nitric acid (70% and over)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19
Nitric acid (less than 70%)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.17, 15.19
Nitilotriacetic acid, trisodium salt solution	Y	S/P	3	2G	Cont	No			Yes	C	T	AC	No	15.12, 15.17, 15.19.6
Nitrobenzene	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.9
Nitroethane	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.4

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Nitroethane(80%)/ Nitropropane(20%)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.3
Nitroethane, 1-Nitropropane (each 15% or more) mixture	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	FT	ABC(f)	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.6.1, 16.6.2, 16.6.3
o-Nitrophenol (molten)	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	F	ABC	No	15.19.6, 16.2.6, 16.2.9
1- or 2-Nitropropane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19
Nitropropane (60%)/Nitroethane (40%) mixture	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	FT	ABC(f)	No	15.12, 15.17, 15.19.6
o- or p-Nitrotoluenes	Y	S/P	2	2G	Cont	No		IIB	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Nonane (all isomers)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Nonanoic acid (all isomers)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Non-edible industrial grade palm oil	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Nonene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Nonyl alcohol (all isomers)	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Nonyl methacrylate monomer	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Nonylphenol	X	S/P	1	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Nonylphenol poly(4+)ethoxylate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6
Noxious liquid, NF, (1) n.o.s. (trade name, contains) ST1, Cat. X	X	P	1	2G	Open	No	-	-	Yes	O	No	AC	No	15.19, 16.2.6

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Noxious liquid, F, (2) n.o.s. (trade name, contains) ST1, Cat. X	X	P	1	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6
Noxious liquid, NF, (3) n.o.s. (trade name, contains) ST2, Cat. X	X	P	2	2G	Open	No	-		Yes	O	No	AC	No	15.19, 16.2.6
Noxious liquid, F, (4) n.o.s. (trade name, contains) ST2, Cat. X	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6
Noxious liquid, NF, (5) n.o.s. (trade name, contains) ST2, Cat. Y	Y	P	2	2G	Open	No	-		Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, F, (6) n.o.s. (trade name, contains) ST2, Cat. Y	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (7) n.o.s. (trade name, contains) ST3, Cat. Y	Y	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, F, (8) n.o.s. (trade name, contains) ST3, Cat. Y	Y	P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (9) n.o.s. (trade name, contains) ST3, Cat. Z	Z	P	3	2G	Open	No	-		Yes	O	No	AC	No	
Noxious liquid, F, (10) n.o.s. (trade name, contains) ST3, Cat. Z	Z	P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Octamethylcyclotetrasiloxane	Y	P	2	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.19.6, 16.2.9

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Octane (all isomers)	X	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Octanoic acid (all isomers)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Octanol (all isomers)	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Octene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
n-Octyl acetate	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Octyl aldehydes	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	F	AC	No	15.19.6, 16.2.9
Octyl decyl adipate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.9
n-Octyl mercaptan	X	S/P	1	2G	Open	No			Yes	O	No	ABC	No	15.19
Offshore contaminated bulk liquid P (o)	X	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6
Offshore contaminated bulk liquid S (o)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	AC	Yes	15.12, 15.15, 15.17, 15.19
Olefin-Alkyl ester copolymer (molecular weight 2000+)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Olefin Mixture (C7-C9) C8 rich, stabilised	X	P	2	2G	Cont	No	T3	IIB	No	R	F	ABC	No	15.13, 15.19.6
Olefin mixtures (C5-C7)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Olefin mixtures (C5-C15)	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Olefins (C13+, all isomers)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
alpha-Olefins (C6-C18) mixtures	X	S/P	2	2G	Cont	No	T4	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Oleic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Oleum	Y	S/P	2	2G	Cont	Dry	-	-	NF	C	T	No	Yes	15.11.2 to 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.6
Oleylamine	X	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9

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Olive oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Oxygenated aliphatic hydrocarbon mixture	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
Palm acid oil	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm fatty acid distillate	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel acid oil	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel fatty acid distillate	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel olein	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm kernel stearin	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm mid-fraction	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm oil fatty acid methyl ester	Y	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.9
Palm olein	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Palm stearin	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Paraffin wax, highly-refined	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Paraffin wax, semi-refined	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6, 16.2.9
Paraldehyde	Z	S/P	3	2G	Cont	No	T3	IIB	No	R	F	AC	No	15.19.6, 16.2.9

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Paraldehyde-ammonia reaction product	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	FT	ABC	Yes	15.12, 15.17, 15.19
Pentachloroethane	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
1,3-Pentadiene	Y	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.13, 15.19.6, 16.6.1, 16.6.2, 16.6.3
1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures	Y	S/P	2	2G	Cont	Inert	T3	IIB	No	C	FT	ABC	Yes	15.12, 15.13, 15.17, 15.19
Pentaethylenhexamine	X	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Pentane (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	15.14, 15.19.6
Pentanoic acid	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
n-Pentanoic acid (64%)/2-Methyl butyric acid (36%) mixture	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19
Pentene (all isomers)	Y	P	2	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.14, 15.19.6
n-Pentyl propionate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Perchloroethylene	Y	S/P	2	2G	Cont	No			NF	C	T	No	No	15.12, 15.17, 15.19.6
Phenol	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
1-Phenyl-1-xylyl ethane	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Phosphate esters, alkyl (C12-C14) amine	Y	S/P	2	2G	Cont	No	T4	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Phosphoric acid	Z	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.11.1, 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9

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Phosphorus, yellow or white (*)	X	S/P	1	1G	Cont	Pad+(vent or inert)			No(c)	C	No	ABC	No	15.7, 15.19, 16.2.9
Phthalic anhydride (molten)	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
alpha-Pinene	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
beta-Pinene	X	S/P	2	2G	Cont	No	T1	IIB	No	R	F	ABC	No	15.19.6
Pine oil	X	S/P	2	2G	Open	No			Yes	O		ABC	No	15.19.6, 16.2.6, 16.2.9
Piperazine, 68% solution	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Polyacrylic acid solution (40% or less)	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Polyalkyl (C18-C22) acrylate in xylene	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyalkylalkenaminesuccinimide, molybdenum oxysulphide	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Polyalkyl (C10-C20) methacrylate	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyalkyl (C10-C18) methacrylate/ethylene-propylene copolymer mixture	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyaluminium chloride solution	Z	S	3	2G	Open	No			NF	O	No	No	No	
Polybutene	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Polybutenyl succinimide	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Poly(2+)cyclic aromatics	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.6, 16.2.9

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Polyether (molecular weight 1350+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Polyethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Polyethylene glycol dimethyl ether	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	
Poly(ethylene glycol) methylbutenyl ether (MW>1000)	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Polyethylene polyamines	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.6, 16.2.9
Polyethylene polyamines (more than 50% C5 -C20 paraffin oil)	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Polyferric sulphate solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19
Poly(iminoethylene)-graft-N-poly(ethyleneoxy) solution (90% or less)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Polyisobutenamine in aliphatic (C10-C14) solvent	Y	S/P	2	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
(Polyisobutene) amino products in aliphatic hydrocarbons	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Polyisobutenyl anhydride adduct	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Poly(4+)isobutylene (MW>224)	X	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyisobutylene (MW≤224)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9

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Polyglycerin, sodium salt solution (containing less than 3% sodium hydroxide)	Z	S	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19. 16.2.9
Polymethylene polyphenyl isocyanate	Y	S/P	3	2G	Cont	Dry			Yes(a)	C	T(a)	AD	Yes	15.12, 15.16.2, 15.17, 15.19.6, 16.2.9
Polyolefin (molecular weight 300+)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin amide alkeneamine (C17+)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Polyolefin amide alkeneamine borate (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin amide alkeneamine polyol	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefinamine (C28-C250)	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Polyolefinamine in alkyl (C2-C4) benzenes	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefinamine in aromatic solvent	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefin aminoester salts (molecular weight 2000+)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin anhydride	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Polyolefin ester (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin phenolic amine (C28-C250)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Polyolefin phosphorusulphide, barium derivative (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9

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Poly(20)oxyethylene sorbitan monooleate	Y	P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Poly(5+)propylene	Y	P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.9
Polypropylene glycol	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Polysiloxane	Y	P	2	2G	Cont	No	T2	IIB	No	R	F	ABC	No	15.19.6, 16.2.9
Potassium chloride solution	Z	P	3	2G	Open	No	-	-	NF	O	No	No	No	16.2.9
Potassium hydroxide solution (*)	Y	S/P	3	2G	Cont	No			NF	C	No	No	Yes	15.12.3.2, 15.17, 15.19
Potassium formate solutions (*)	Z	S	3	2G	Cont	No			NF	R	No	No	No	15.19.6
Potassium oleate	Y	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.9
Potassium thiosulphate (50% or less)	Y	S/P	3	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
n-Propanolamine	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer solution	Y	P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
beta-Propiolactone	Y	S/P	1	2G	Cont	No		IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.18, 15.19
Propionaldehyde	Y	S/P	3	2G	Cont	Inert	T4	IIB	No	R	F	AC	No	15.19.6
Propionic acid	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19
Propionic anhydride	Y	S/P	2	2G	Cont	No	T2	IIA	Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Propionitrile	Y	S/P	1	1G	Cont	No	T1	IIB	No	C	FT	AC	Yes	15.12, 15.17, 15.18, 15.19
n-Propyl acetate	Y	P	3	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
n-Propyl alcohol	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
n-Propylamine	Z	S/P	2	2G	Cont	Inert	T2	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19

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Propylbenzene (all isomers)	Y	P	3	2G	Cont	No	T2	IIA	No	R	F	ABC	No	15.19.6
Propylene carbonate	Z	S	3	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19
Propylene glycol methyl ether acetate	Z	P	3	2G	Cont	No	T2	IIA	No	R	F	AC	No	
Propylene glycol monoalkyl ether	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	F	AC	No	15.19.6
Propylene glycol phenyl ether	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Propylene oxide	Y	S/P	2	2G	Cont	Inert	T2	IIB	No	C	FT	AC	No	15.8, 15.12, 15.14, 15.17, 15.19
Propylene tetramer	X	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Propylene trimer	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F	ABC	No	15.19.6
Pyridine	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	FT	AC	No	15.12.3, 15.12.4, 15.19.6
Pyrolysis gasoline (containing benzene)	Y	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Rapeseed oil	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Rapeseed oil (low erucic acid containing less than 4% free fatty acids)	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Rape seed oil fatty acid methyl esters	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Resin oil, distilled	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Rice bran oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Rosin	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Safflower oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Shea butter	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Sodium alkyl (C14-C17) sulphonates (60-65% solution)	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9

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Sodium aluminosilicate slurry	Z	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium benzoate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	16.2.9
Sodium borohydride (15% or less)/Sodium hydroxide solution (*)	Y	S/P	3	2G	Cont	No			NF	C	No	No	Yes	15.17, 15.19, 16.2.6, 16.2.9
Sodium bromide solution (less than 50%) (*)	Y	S/P	3	2G	Open	No	-	-	NF	R	No	No	No	15.19.6
Sodium carbonate solution (*)	Z	S/P	3	2G	Open	No			NF	R	No	No	No	15.19.6
Sodium chlorate solution (50% or less) (*)	Z	S/P	3	2G	Open	No			NF	R	No	No	No	15.9, 15.12, 15.17, 15.19, 16.2.9
Sodium dichromate solution (70% or less)	Y	S/P	1	1G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.18, 15.19
Sodium hydrogen sulphide (6% or less)/Sodium carbonate (3% or less) solution	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium hydrogen sulphite solution (45% or less)	Z	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium hydrosulphide/Ammonium sulphide solution (*)	Y	S/P	2	2G	Cont	No	T4	IIB	No	C	FT	AC	Yes	15.12, 15.15, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Sodium hydrosulphide solution (45% or less) (*)	Z	S/P	3	2G	Cont	Vent or pad (gas)			NF	R	T	No	Yes	15.12, 15.15, 15.19.6, 16.2.9
Sodium hydroxide solution (*)	Y	S/P	3	2G	Cont	No			NF	C	No	No	Yes	15.17, 15.19, 16.2.6, 16.2.9
Sodium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No	-	-	NF	R	No	No	No	15.17, 15.19.6
Sodium methylate 21-30% in methyl alcohol	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	AC	Yes	15.12, 15.17, 15.19, 16.2.6 (only if >28%), 16.2.9
Sodium nitrite solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9
Sodium petroleum sulphonate	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	Yes	15.12.3, 15.12.4, 15.19.6, 16.2.6

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Sodium poly(4+)acrylate solutions	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	AC	No	16.2.9
Sodium silicate solution	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
Sodium sulphate solutions	Z	S	3	2G	Open	No			NF	O	No	No	No	16.2.9,
Sodium sulphide solution (15% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19, 16.2.9
Sodium sulphite solution (25% or less)	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium thiocyanate solution (56% or less)	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Soyabean oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Soybean Oil Fatty Acid Methyl Ester	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Styrene monomer	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
Sulphohydrocarbon (C3-C88)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Sulpholane	Y	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Sulphur (molten) (*)	Z	S/P	3	1G	Cont	Vent or pad (gas)	T3		Yes	R	F	No	No	15.10, 16.2.9
Sulphuric acid	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19, 16.2.9
Sulphuric acid, spent	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.12, 15.16.2, 15.17, 15.19
Sulphurized fat (C14-C20)	Z	S/P	3	2G	Open	No			Yes	O	No	ABC	No	
Sulphurized polyolefinamide alkene (C28-C250) amine	Z	P	3	2G	Open	No	-	-	Yes	O	No	AC	No	
Sunflower seed oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Tall oil, crude	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Tall oil, distilled	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6
Tall oil fatty acid (resin acids less than 20%)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6
Tall oil pitch	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Tall oil soap, crude	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.6
Tallow	Y	P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Tallow fatty acid	Y	P	2	2G	Open	No	-	-	Yes	O	No	AC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Tetrachloroethane	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.12.4, 15.19
Tetraethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Tetraethylene pentamine	Y	S/P	2	2G	Cont	No			Yes	C	T	AC	Yes	15.12, 15.17, 15.19
Tetrahydrofuran	Z	S	3	2G	Cont	No	T3	IIB	No	R	F	AC	No	15.19.6
Tetrahydronaphthalene	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Tetramethylbenzene (all isomers)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.9
Titanium dioxide slurry	Z	P	3	2G	Open	No			NF	O	No	No	No	
Toluene	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	FT	AC	No	15.12, 15.17, 15.19.6
Toluenediamine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.17, 15.18, 15.19, 16.2.6, 16.2.9
Toluene diisocyanate	Y	S/P	2	2G	Cont	Dry	-	-	Yes	C	T	ABC(b)D	Yes	15.12, 15.16.2, 15.17, 15.18, 15.19, 16.2.9
o-Toluidine	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19
Tributyl phosphate	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12.3, 15.12.4, 15.19.6

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
1,2,3-Trichlorobenzene (molten)	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
1,2,4-Trichlorobenzene	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.9
1,1,1-Trichloroethane	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,1,2-Trichloroethane	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Trichloroethylene	Y	S/P	2	2G	Cont	No	-	-	NF	C	T	No	No	15.12, 15.17, 15.19.6
1,2,3-Trichloropropane	Y	S/P	3	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19
1,1,2-Trichloro-1,2,2-Trifluoroethane	Y	P	2	2G	Open	No			NF	O	No	No	No	15.19.6
Tricresyl phosphate (containing 1% or more ortho-isomer)	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19, 16.2.6
Tricresyl phosphate (containing less than 1% ortho-isomer)	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6
Tridecane	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Tridecanoic acid	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Tridecyl acetate	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Triethanolamine	Z	S/P	3	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Triethylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12.3, 15.12.4, 15.19
Triethylbenzene	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6
Triethylenetetramine	Y	S/P	2	2G	Cont	No	-	-	Yes	C	T	AC	Yes	15.12, 15.17, 15.19, 16.2.9
Triethyl phosphate	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6
Triethyl phosphite	Z	S/P	3	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Triisopropanolamine	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9

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Triisopropylated phenyl phosphates	X	P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.6
Trimethylacetic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.11, 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
Trimethylamine solution (30% or less)	Z	S/P	2	2G	Cont	No	T3	IIB	No	R	FT	AC	No	15.12.3, 15.12.4, 15.14, 15.19.6
Trimethylbenzene (all isomers)	X	S/P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6
Trimethylol propane propoxylated	Z	S/P	3	2G	Open	No	-	-	Yes	O	No	ABC	No	
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Y	S/P	3	2G	Open	No			Yes	O	No	ABC	No	15.19.6
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
1,3,5-Trioxane	Y	S/P	3	2G	Cont	No	T2	IIB	No	C	FT	AC	No	15.12, 15.17, 15.19.6, 16.2.9
Tripropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	AC	No	
Trixylyl phosphate	X	S/P	1	2G	Cont	No			Yes	C	T	ABC	No	15.12, 15.17, 15.19.6, 16.2.6
Tung oil	Y	S/P	2(k)	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Turpentine	X	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	AC	No	15.19.6
Undecanoic acid	Y	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9
1-Undecene	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6
Undecyl alcohol	X	S/P	2	2G	Cont	No			Yes	R	T	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Urea/Ammonium nitrate solution	Y	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6
Urea/Ammonium phosphate solution	Y	S/P	2	2G	Cont	No			Yes	R	T	AC	No	15.12.3, 15.12.4, 15.19.6
Urea solution	Z	S/P	3	2G	Open	No			Yes	O	No	AC	No	16.2.9,
Used cooking oil (m)	X	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Used cooking oil (Triglycerides, C16-C18 and C18 unsaturated) (m) (n)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Valeraldehyde (all isomers)	Y	S/P	3	2G	Cont	Inert	T3	IIB	No	R	F	ABC	No	15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2
Vegetable acid oils (m)	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vegetable fatty acid distillates (m)	Y	P	2	2G	Open	No	-	-	Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vegetable oil mixtures, containing less than 15% free fatty acid (m)	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.7, 16.2.9
Vinyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
Vinyl ethyl ether	Z	S/P	2	2G	Cont	Inert	T3	IIB	No	R	F	ABC	No	15.4, 15.13, 15.14, 15.19.6, 16.6.1, 16.6.2
Vinylidene chloride	Y	S/P	2	2G	Cont	Inert	T2	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.14, 15.17, 15.19, 16.6.1, 16.6.2
Vinyl neodecanoate	Y	S/P	2	2G	Cont	No			Yes	C	T	ABC	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
Vinyltoluene	Y	S/P	2	2G	Cont	No	T1	IIA	No	C	FT	ABC	No	15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2
White spirit, low (15-20%) aromatic	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6, 16.2.9

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Wood lignin with sodium acetate/oxalate	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	
Xylenes	Y	P	2	2G	Cont	No	T1	IIA	No	R	F	ABC	No	15.19.6, 16.2.9 (h)
Xylenes/ethylbenzene (10% or more) mixture	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	FT	ABC	No	15.12.3, 15.12.4, 15.19.6
Xylenol	Y	S/P	2	2G	Cont	No	-	IIA	Yes	C	T	ABC	Yes	15.12, 15.17, 15.19, 16.2.9
Zinc alkaryl dithiophosphate (C7-C16)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6, 16.2.9
Zinc alkenyl carboxamide	Y	S/P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6
Zinc alkyl dithiophosphate (C3-C14)	Y	P	2	2G	Open	No			Yes	O	No	ABC	No	15.19.6, 16.2.6

Footnotes to products in chapter 17

Some entries in chapter 17 contain footnotes, as either letters or symbols in parentheses following the name of the product, in *column a* of the tables. These provide additional information about the carriage requirements for the product. The definitions of these footnotes are included below.

- a If the product to be carried contains flammable solvents such that the flashpoint does not exceed 60°C, then special electrical systems and a flammable-vapour detector shall be provided.
- b Although water is suitable for extinguishing open-air fires involving chemicals to which this footnote applies, water shall not be allowed to contaminate closed tanks containing these chemicals because of the risk of hazardous gas generation.
- c Phosphorus, yellow or white, is carried above its autoignition temperature and therefore flashpoint is not appropriate. Electrical equipment requirements may be similar to those for substances with a flashpoint above 60°C.
- d Requirements are based on those isomers having a flashpoint of 60°C, or less; some isomers have a flashpoint greater than 60°C, and therefore the requirements based on flammability would not apply to such isomers.
- e Applies to n-decyl alcohol only.
- f Dry chemical shall not be used as fire extinguishing media.
- g Confined spaces shall be tested for both formic acid vapours and carbon monoxide gas, a decomposition product.
- h Applies to p-xylene only.
- i For mixtures containing no other components with safety hazards and where the pollution category is Y or less.
- j Only certain alcohol-resistant foams are effective.
- k Requirements for Ship Type identified in *column e* might be subject to regulation 4.1.3 of Annex II of MARPOL.
- l Applicable when the melting point is equal to or greater than 0°C.
- m From vegetable oils, animal fats and fish oils specified in the IBC Code.
- n Confirmation that the product is composed of Triglycerides, C16-C18 and C18 unsaturated shall be required in order for the entry to be used. Otherwise, the more generic entry "Used cooking oil (m)" must be used.
- o Indicates that the entries are to be used solely for backloading of contaminated bulk liquids from offshore installations used in the search and exploitation of seabed mineral resources.
- * Indicates that with reference to chapter 21 of the IBC Code (paragraph 21.1.3), deviations from the normal assignment criteria used for some carriage requirements have been implemented.

Chapter 18

LIST OF PRODUCTS TO WHICH THE CODE DOES NOT APPLY

18.1 The following are products which have been reviewed for their safety and pollution hazards and determined not to present hazards to such an extent as to warrant application of the Code.

18.2 Although the products listed in this chapter fall outside the scope of the Code, the attention of Administrations is drawn to the fact that some safety precautions may be needed for their safe transportation. Accordingly, Administrations shall prescribe appropriate safety requirements.

18.3 Some liquid substances are identified as falling into Pollution Category Z and, therefore, subject to certain requirements of MARPOL Annex II.

18.4 Liquid mixtures which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II as falling into Pollution Category Z or OS, and which do not present safety hazards, may be carried under the appropriate entry in this chapter for "Noxious or Non-Noxious Liquid Substances, not otherwise specified (n.o.s.)".

EXPLANATORY NOTES

Product name The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.

Pollution Category The letter Z means the Pollution Category assigned to each product under Annex II of MARPOL. OS means the product was evaluated and found to fall outside Categories X, Y or Z.

Product Name	Pollution Category
Acetone	Z
Alcoholic beverages, n.o.s.	Z
Apple juice	OS
n-Butyl alcohol	Z
sec-Butyl alcohol	Z
Calcium carbonate slurry	OS
Clay slurry	OS
Coal slurry	OS
Ethyl alcohol	Z
Glucose solution	OS
Glycerol ethoxylated	OS
Hydrogenated starch hydrolysate	OS
Isopropyl alcohol	Z
Kaolin slurry	OS
Lecithin	OS
Maltitol solution	OS
Microsilica slurry	OS

Molasses	OS
Noxious liquid, (11) n.o.s. (trade name, contains) Cat. Z	Z
Non noxious liquid, (12) n.o.s. (trade name, contains) Cat. OS	OS
Orange juice (concentrated)	OS
Orange juice (not concentrated)	OS
Potassium chloride solution (less than 26%)	OS
Propylene glycol	OS
Sodium acetate solutions	Z
Sodium bicarbonate solution (less than 10%)	OS
Sorbitol solution	OS
Sulphonated polyacrylate solution	Z
Tetraethyl silicate monomer/oligomer (20% in ethanol)	Z
Triethylene glycol	OS
Vegetable protein solution (hydrolyzed)	OS
Water	O

Chapter 19

Index of Products Carried in Bulk

19.1 The first column of the Index of Products Carried in Bulk (hereafter referred to as "the Index") provides the so-called Index Name. Where the Index Name is in capitals and in bold, the Index Name is identical to the Product Name in either chapter 17 or chapter 18. The second column listing the relevant Product Name is therefore empty. Where the Index Name is non-bold lower case it reflects a synonym for which the Product Name in either chapter 17 or chapter 18 is given in the second column. The relevant chapter of the IBC Code is reflected in the third column.

19.2 Following a review of chapter 19, a column listing UN numbers which was previously included had been removed from the Index. Since UN numbers are only available for a limited number of Index Names and there are inconsistencies between some of the names used in chapter 19 and those linked to UN numbers, it was decided to remove UN number references in order to avoid any confusion.

19.3 The Index has been developed for information purposes only. None of the Index Names indicated in non-bold lower case in the first column shall be used as the Product Name on the shipping document.

19.4 Prefixes forming an integral part of the name are shown in ordinary (roman) type and are taken into account in determining the alphabetical order of entries. These include such prefixes as:

Mono Di Tri Tetra Penta Iso Bis Neo Ortho Cyclo

19.5 Prefixes that are disregarded for purposes of alphabetical order include the following:

n-	(normal-)
sec-	(secondary-)
tert-	(tertiary-)
o-	(ortho-)
m-	(meta-)

p-	(para-)
N-	
O-	
S-	
sym-	(symmetrical)
uns-	(unsymmetrical)
dl-	
D-	
L-	
cis-	
trans-	
(E)-	
(Z)-	
alpha-	(α -)
beta-	(β -)
gamma-	(γ -)
epsilon-	(ϵ -)
omega-	(ω -)

19.6 The Index utilizes a note after the index name for some entries (shown as (a) or (b)) which indicates that the following qualifications apply:

- (a) This Index Name represents a subset of the corresponding Product Name.
- (b) The Product Name corresponding to this Index Name contains a carbon chain length qualification. Since the Index Name should always represent a subset or be an exact synonym of the corresponding Product Name, the carbon chain length characteristics should be checked for any product identified by this Index Name.

Index Name	Product Name	Chapter
Abietic anhydride	ROSIN	17
acedimethylamide	N,N-DIMETHYLACETAMIDE	17
Acetaldehyde cyanohydrin solution (80% or less)	LACTONITRILE SOLUTION (80% OR LESS)	17
Acetaldehyde trimer	PARALDEHYDE	17
ACETIC ACID		17
Acetic acid anhydride	ACETIC ANHYDRIDE	17
Acetic acid, ethenyl ester	VINYL ACETATE	17
Acetic acid, methyl ester	METHYL ACETATE	17
Acetic acid, vinyl ester	VINYL ACETATE	17
ACETIC ANHYDRIDE		17
Acetic ester	ETHYL ACETATE	17
Acetic ether	ETHYL ACETATE	17
Acetic oxide	ACETIC ANHYDRIDE	17
Acetoacetic acid, methyl ester	METHYL ACETOACETATE	17
Acetoacetic ester	ETHYL ACETOACETATE	17
ACETOCHLOR		17
ACETONE		18
ACETONE CYANOHYDRIN		17
ACETONITRILE		17
ACETONITRILE (LOW PURITY GRADE)		17
Acetyl anhydride	ACETIC ANHYDRIDE	17
Acetylene tetrachloride	TETRACHLOROETHANE	17
Acetyl ether	ACETIC ANHYDRIDE	17
Acetyl oxide	ACETIC ANHYDRIDE	17
ACID OIL MIXTURE FROM SOYABEAN, CORN (MAIZE) AND SUNFLOWER OIL REFINING		17
Acroleic acid	ACRYLIC ACID	17
ACRYLAMIDE SOLUTION (50% OR LESS)		17
ACRYLIC ACID		17
ACRYLIC ACID/ETHENESULPHONIC ACID COPOLYMER WITH PHOSPHONATE GROUPS, SODIUM SALT SOLUTION		17
Acrylic acid, 2-hydroxyethyl ester	2-HYDROXYETHYL ACRYLATE	17
Acrylic amide solution, 50% or less	ACRYLAMIDE SOLUTION (50% OR LESS)	17
Acrylic resin monomer	METHYL METHACRYLATE	17
ACRYLONITRILE		17
ACRYLONITRILE-STYRENE COPOLYMER DISPERSION IN POLYETHER POLYOL		17
Adipic acid, bis(2-ethylhexyl) ester	DI-(2-ETHYLHEXYL) ADIPATE	17
ADIPONITRILE		17
ALACHLOR TECHNICAL (90% OR MORE)		17
Alcohol	ETHYL ALCOHOL	18
Alcohol, C10	DECYL ALCOHOL (ALL ISOMERS)	17
Alcohol, C11	UNDECYL ALCOHOL	17
Alcohol, C12	DODECYL ALCOHOL	17
Alcohol, C7 (a)	HEPTANOL (ALL ISOMERS) (D)	17
Alcohol, C8	OCTANOL (ALL ISOMERS)	17

Index Name	Product Name	Chapter
Alcohol, C9	NONYL ALCOHOL (ALL ISOMERS)	17
ALCOHOLIC BEVERAGES, N.O.S.		18
ALCOHOL (C9-C11) POLY(2.5-9)ETHOXYLATE		17
ALCOHOL (C10-C18) POLY (7) ETHOXYLATE		17
ALCOHOL (C6-C17) (SECONDARY) POLY(3-6)ETHOXYLATES		17
ALCOHOL (C6-C17) (SECONDARY) POLY(7-12)ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(1-6) ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(20+)ETHOXYLATES		17
ALCOHOL (C12-C16) POLY(7-19)ETHOXYLATES		17
ALCOHOLS (C13+)		17
Alcohols, C13 - C15	ALCOHOLS (C13+)	17
ALCOHOLS (C12+), PRIMARY, LINEAR		17
ALCOHOLS (C8-C11), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
ALCOHOLS (C12-C13), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
ALCOHOLS (C14-C18), PRIMARY, LINEAR AND ESSENTIALLY LINEAR		17
Aldehyde collidine	2-METHYL-5-ETHYL PYRIDINE	17
Aldehydine	2-METHYL-5-ETHYL PYRIDINE	17
ALKANES (C6-C9)		17
ISO- AND CYCLO-ALKANES (C10-C11)		17
ISO- AND CYCLO-ALKANES (C12+)		17
ALKANES (C5-C7), LINEAR AND BRANCHED		17
ALKANES (C10-C17), LINEAR AND BRANCHED		17
ALKANES (C10-C26), LINEAR AND BRANCHED (FLASHPOINT ≤60°C)		17
ALKANES (C10-C26), LINEAR AND BRANCHED, (FLASHPOINT >60°C)		17
N-ALKANES (C9-C11)		17
N-ALKANES (C10-C20)		17
Alkane(C10-C18)sulfonic acid, phenyl ester (a)	ALKYL SULPHONIC ACID ESTER OF PHENOL	17
ALKARYL POLYETHERS (C9-C20)		17
ALKENOIC ACID, POLYHYDROXY ESTER BORATED		17
ALKENYL (C11+) AMIDE		17
ALKENYL (C16-C20) SUCCINIC ANHYDRIDE		17
ALKYL ACRYLATE/VINYLPYRIDINE COPOLYMER IN TOLUENE		17
ALKYL/CYCLO (C4-C5) ALCOHOLS		17
ALKYLARYL PHOSPHATE MIXTURES (MORE THAN 40% DIPHENYL TOLYL PHOSPHATE, LESS THAN 0.02% ORTHO-ISOMERS)		17
ALKYLATED (C4-C9) HINDERED PHENOLS		17
ALKYLBENZENE, ALKYLINDANE, ALKYLINDENE MIXTURE (EACH C12-C17)		17
ALKYLBENZENE DISTILLATION BOTTOMS		17

Index Name	Product Name	Chapter
ALKYLBENZENE MIXTURES (CONTAINING AT LEAST 50% OF TOLUENE)		17
ALKYL (C3-C4) BENZENES		17
ALKYL (C5-C8) BENZENES		17
ALKYL(C9+)BENZENES		17
ALKYLBENZENES MIXTURES (CONTAINING NAPHTHALENE)		17
ALKYL (C11-C17) BENZENE SULPHONIC ACID		17
ALKYLBENZENE SULPHONIC ACID, SODIUM SALT SOLUTION		17
ALKYL (C12+) DIMETHYLAMINE		17
ALKYL DITHIOCARBAMATE (C19-C35)		17
ALKYL DITHIOTHIAZOLE (C6-C24)		17
ALKYL ESTER COPOLYMER (C4-C20)		17
ALKYL (C8-C10)/(C12-C14):(40% OR LESS/60% OR MORE) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL (C8-C10)/(C12-C14):(60% OR MORE/40% OR LESS) POLYGLUCOSIDE SOLUTION(55% OR LESS)		17
ALKYL (C7-C9) NITRATES		17
2,2'- [3-(Alkyl(C16-C18)oxy)propylimino]diethanol (a)	ETHOXYLATED LONG CHAIN (C16+) ALKYL OXYALKYLAMINE	17
Alkylphenol, long-chain (C14-C18)	LONG-CHAIN ALKYLPHENOL (C14-C18)	17
Alkylphenol, long-chain (C18-C30)	LONG-CHAIN ALKYLPHENOL (C18-C30)	17
ALKYL(C7-C11)PHENOL POLY(4-12) ETHOXYLATE		17
ALKYL (C8-C40) PHENOL SULPHIDE		17
ALKYL (C8-C9) PHENYLAMINE IN AROMATIC SOLVENTS		17
ALKYL (C9-C15) PHENYL PROPOXYLATE		17
ALKYL (C8-C10) POLYGLUCOSIDE SOLUTION (65% OR LESS)		17
ALKYL (C8-C10)/(C12-C14):(50%/50%) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL (C12-C14) POLYGLUCOSIDE SOLUTION (55% OR LESS)		17
ALKYL(C12-C16) PROPOXYAMINE ETHOXYLATE		17
ALKYL (C10-C15, C12 RICH) PHENOL POLY(4-12)ETHOXYLATE		17
ALKYL (C10-C20, SATURATED AND UNSATURATED) PHOSPHITE		17
ALKYL SULPHONIC ACID ESTER OF PHENOL		17
ALKYL (C18+) TOLUENES		17
Alkyltoluenesulfonic acid, calcium salts, high overbase (up to 70% in mineral oil)	ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE	17
Alkyl(C18-C28)toluenesulfonic acid,calcium salts, low overbase (up to 60% in mineral oil)	ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE	17
ALKYL(C18-C28)TOLUENESULPHONIC ACID		17
ALKYL(C18-C28)TOLUENESULPHONIC ACID, CALCIUM SALTS, BORATED		17
ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE		17
ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE		17

Index Name	Product Name	Chapter
3-Alky(C16-C18)oxy-N,N'-bis(2-hydroxyethyl)propan-1-amine (a)	ETHOXYLATED LONG CHAIN (C16+) ALKYLALOXALYLAMINE	17
ALLYL ALCOHOL		17
ALLYL CHLORIDE		17
ALUMINIUM CHLORIDE/HYDROGEN CHLORIDE SOLUTION		17
ALUMINIUM HYDROXIDE, SODIUM HYDROXIDE, SODIUM CARBONATE SOLUTION (40% OR LESS)		17
Aluminium silicate hydroxide	KAOLIN SLURRY	18
ALUMINIUM SULPHATE SOLUTION		17
Aminoacetic acid, sodium salt solution	GLYCINE, SODIUM SALT SOLUTION	17
1-Amino-3-aminomethyl-3,5,5-trimethylcyclohexane	ISOPHORONEDIAMINE	17
Aminobenzene	ANILINE	17
1-Aminobutane (a)	BUTYLAMINE (ALL ISOMERS)	17
2-Aminobutane	BUTYLAMINE (ALL ISOMERS)	17
Aminocyclohexane	CYCLOHEXYLAMINE	17
Aminoethane	ETHYLAMINE	17
Aminoethane solutions, 72% or less	ETHYLAMINE SOLUTIONS (72% OR LESS)	17
2-Aminoethanol	ETHANOLAMINE	17
2-(2-AMINOETHOXY) ETHANOL		17
2-(2-Aminoethylamino)ethanol	AMINOETHYL ETHANOLAMINE	17
AMINOETHYLDIETHANOLAMINE/AMINOETHYLETHANOLAMINE SOLUTION		17
AMINOETHYL ETHANOLAMINE		17
N-(2-aminoethyl)ethylenediamine	DIETHYLENETRIAMINE	17
1-(2-Aminoethyl)piperazine	N-AMINOETHYLPIPERAZINE	17
N-AMINOETHYLPIPERAZINE		17
2-Aminoisobutane (a)	BUTYLAMINE (ALL ISOMERS)	17
Aminomethane solutions, 42% or less	METHYLAMINE SOLUTIONS (42% OR LESS)	17
1-Amino-2-methylbenzene	O-TOLUIDINE	17
2-Amino-1-methylbenzene	O-TOLUIDINE	17
2-AMINO-2-METHYL-1-PROPANOL		17
3-Aminomethyl-3,5,5-trimethylcyclohexylamine	ISOPHORONEDIAMINE	17
Aminophen	ANILINE	17
1-Aminopropane	N-PROPYLAMINE	17
2-Aminopropane	ISOPROPYLAMINE	17
2-Aminopropane (70% or less) solution	ISOPROPYLAMINE (70% OR LESS) SOLUTION	17
1-Amino-2-propanol	ISOPROPANOLAMINE	17
1-Aminopropan-2-ol	ISOPROPANOLAMINE	17
3-Aminopropan-1-ol	N-PROPANOLAMINE	17
2-Aminotoluene	O-TOLUIDINE	17
o-Aminotoluene	O-TOLUIDINE	17
5-Amino-1,3,3-trimethylcyclohexylmethylamine	ISOPHORONEDIAMINE	17
AMMONIA AQUEOUS (28% OR LESS)		17
Ammonia water, 28% or less	AMMONIA AQUEOUS (28% OR LESS)	17
AMMONIUM CHLORIDE SOLUTION (LESS THAN 25%) (*)		17
AMMONIUM HYDROGEN PHOSPHATE SOLUTION		17

Index Name	Product Name	Chapter
Ammonium hydroxide, 28% or less	AMMONIA AQUEOUS (28% OR LESS)	17
AMMONIUM LIGNOSULPHONATE SOLUTIONS		17
AMMONIUM NITRATE SOLUTION (93% OR LESS) (*)		17
AMMONIUM POLYPHOSPHATE SOLUTION		17
AMMONIUM SULPHATE SOLUTION		17
AMMONIUM SULPHIDE SOLUTION (45% OR LESS) (*)		17
AMMONIUM THIOSULPHATE SOLUTION (60% OR LESS)		17
AMYL ACETATE (ALL ISOMERS)		17
Amyl acetate, commercial (a)	AMYL ACETATE (ALL ISOMERS)	17
n-Amyl acetate (a)	AMYL ACETATE (ALL ISOMERS)	17
sec-Amyl acetate (a)	AMYL ACETATE (ALL ISOMERS)	17
Amylacetic ester (a)	AMYL ACETATE (ALL ISOMERS)	17
Amyl alcohol	N-AMYL ALCOHOL	17
N-AMYL ALCOHOL		17
AMYL ALCOHOL, PRIMARY		17
SEC-AMYL ALCOHOL		17
TERT-AMYL ALCOHOL		17
Amyl aldehyde	VALERALDEHYDE (ALL ISOMERS)	17
Amylcarbinol	HEXANOL	17
Amylene hydrate	TERT-AMYL ALCOHOL	17
TERT-AMYL ETHYL ETHER		17
Amyl ethyl ketone	ETHYL AMYL KETONE	17
TERT-AMYL METHYL ETHER		17
n-Amyl methyl ketone	METHYL AMYL KETONE	17
n-Amyl propionate	N-PENTYL PROPIONATE	17
Anaesthetic ether	DIETHYL ETHER (*)	17
ANILINE		17
Aniline oil	ANILINE	17
Anilinobenzene	DIPHENYLAMINE (MOLTEN)	17
Anthracene oil (coal tar fraction) (a)	COAL TAR	17
Ant oil, artificial	FURFURAL	17
APPLE JUICE		18
Aqua fortis	NITRIC ACID (70% AND OVER)	17
Argilla	KAOLIN SLURRY	18
ARYL POLYOLEFINS (C11-C50)		17
AVIATION ALKYLATES (C8 PARAFFINS AND ISO-PARAFFINS BPT 95 - 120°C)		17
Azacycloheptane	HEXAMETHYLENEIMINE	17
3-Azapentane-1,5-diamine	DIETHYLENETRIAMINE	17
Azepane	HEXAMETHYLENEIMINE	17
Azotic acid	NITRIC ACID (70% AND OVER)	17
BARIUM LONG CHAIN (C11-C50) ALKARYL SULPHONATE		17
Basic calcium alkyl salicylate in approximately 30% mineral oil (b)	CALCIUM LONG-CHAIN ALKYL SALICYLATE (C13+)	17
Battery acid	SULPHURIC ACID	17

Index Name	Product Name	Chapter
Behenyl alcohol (a)	ALCOHOLS (C13+)	17
Benzenamine	ANILINE	17
1,4-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	BIS(2-ETHYLHEXYL) TEREPHTHALATE	17
1,4-Benzenedicarboxylic acid, butyl ester	DIBUTYL TEREPHTHALATE	17
1,2-Benzenedicarboxylic acid, diethyl ester	DIETHYL PHTHALATE	17
1,2-Benzenedicarboxylic acid, diundecyl ester	DIUNDECYL PHTHALATE	17
BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)		17
BENZENE SULPHONYL CHLORIDE		17
BENZENESULPHONYL CHLORIDE	BENZENE SULPHONYL CHLORIDE	17
BENZENETRICARBOXYLIC ACID, TRIOCTYL ESTER		17
Benzenol	PHENOL	17
Benzol	BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)	17
Benzole	BENZENE AND MIXTURES HAVING 10% BENZENE OR MORE (I)	17
Benzophenol	PHENOL	17
2-Benzothiazolethiol, sodium salt solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
Benzothiazole-2-thiol, sodium salt solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
(2-Benzothiazolylthio) sodium solution	MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION	17
BENZYL ACETATE		17
BENZYL ALCOHOL		17
Benzyl butyl phthalate	BUTYL BENZYL PHTHALATE	17
BENZYL CHLORIDE		17
Betaprone	BETA-PROPIOLACTONE	17
Betula oil	METHYL SALICYLATE	17
Biformyl	GLYOXAL SOLUTION (40% OR LESS)	17
BIO-FUEL BLENDS OF DIESEL/GAS OIL AND ALKANES (C10-C26), LINEAR AND BRANCHED WITH A FLASHPOINT >60°C (>25% BUT <99% BY VOLUME)		17
BIO-FUEL BLENDS OF DIESEL/GAS OIL AND ALKANES (C10-C26), LINEAR AND BRANCHED WITH A FLASHPOINT ≤ 60°C (>25% BUT <99% BY VOLUME)		17
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Sodium sulphocyanate solution (56% or less)	SODIUM THIOCYANATE SOLUTION (56% OR LESS)	17
Sodium sulphocyanide solution (56% or less)	SODIUM THIOCYANATE SOLUTION (56% OR LESS)	17
Sodium tetrahydroborate (15% or less) / sodium hydroxide solution	SODIUM BOROXYDRIDE (15% OR LESS)/SODIUM HYDROXIDE SOLUTION (*)	17
SODIUM THIOCYANATE SOLUTION (56% OR LESS)		17

Index Name	Product Name	Chapter
Sodium tolyl oxides solution	CRESYLIC ACID, SODIUM SALT SOLUTION	17
'D-D Soil fumigant'	DICHLOROPROPENE/DICHLOROPROPANE MIXTURES	17
d-Sorbite solution	SORBITOL SOLUTION	18
SORBITOL SOLUTION		18
d-Sorbitol solution	SORBITOL SOLUTION	18
SOYABEAN OIL		17
Soya Methyl Ester (SME)	SOYBEAN OIL FATTY ACID METHYL ESTER	17
SOYBEAN OIL FATTY ACID METHYL ESTER		17
Soybean Oil Methyl Ester	SOYBEAN OIL FATTY ACID METHYL ESTER	17
Spirit of turpentine	TURPENTINE	17
Spirits of wine	ETHYL ALCOHOL	18
Stoddard solvent	WHITE SPIRIT, LOW (15-20%) AROMATIC	17
STYRENE MONOMER		17
Styrol	STYRENE MONOMER	17
Suberane	CYCLOHEPTANE	17
Sulfonic acid, alkane(C10-C21) phenyl ester (a)	ALKYL SULPHONIC ACID ESTER OF PHENOL	17
SULPHOHYDROCARBON (C3-C88)		17
SULPHOLANE		17
SULPHONATED POLYACRYLATE SOLUTION		18
SULPHUR (MOLTEN) (*)		17
SULPHURIC ACID		17
Sulphuric acid, fuming	OLEUM	17
SULPHURIC ACID, SPENT		17
Sulphuric chlorohydrin	CHLOROSULPHONIC ACID	17
Sulphuric ether	DIETHYL ETHER (*)	17
SULPHURIZED FAT (C14-C20)		17
SULPHURIZED POLYOLEFINAMIDE ALKENE (C28-C250) AMINE		17
SUNFLOWER SEED OIL		17
Sweet-birch oil	METHYL SALICYLATE	17
sym-Dichloroethane	ETHYLENE DICHLORIDE	17
sym-Dichloroethyl ether	DICHLOROETHYL ETHER	17
sym-Diisopropylacetone	DIISOBUTYL KETONE	17
sym-Dimethylethylene glycol	BUTYLENE GLYCOL	17
sym-Tetrachloroethane	TETRACHLOROETHANE	17
sym-Trioxane	1,3,5-TRIOXANE	17
TALL OIL, CRUDE		17
TALL OIL, DISTILLED		17
TALL OIL FATTY ACID (RESIN ACIDS LESS THAN 20%)		17
TALL OIL PITCH		17
TALL OIL SOAP, CRUDE		17
TALLOW		17
TALLOW FATTY ACID		17

Index Name	Product Name	Chapter
Tar acids (cresols)	CRESOLS (ALL ISOMERS)	17
Tar camphor	NAPHTHALENE (MOLTEN)	17
Terephthalic acid, dibutyl ester	DIBUTYL TEREPHTHALATE	17
3,6,9,12-Tetraazatetradecamethylenediamine	PENTAETHYLENEHEXAMINE	17
3,6,9,12-Tetraazatetradecane-1,14-diamine	PENTAETHYLENEHEXAMINE	17
1,3,5,7-Tetraazatricyclo[3.3.1.1 ^{3,7}]decane	HEXAMETHYLENETETRAMINE SOLUTIONS	17
TETRACHLOROETHANE		17
1,1,2,2-Tetrachloroethane	TETRACHLOROETHANE	17
Tetrachloroethylene	PERCHLOROETHYLENE	17
1,1,2,2-tetrachloroethylene	PERCHLOROETHYLENE	17
Tetrachloromethane	CARBON TETRACHLORIDE	17
Tetradecan-1-ol	ALCOHOLS (C14-C18), PRIMARY, LINEAR AND ESSENTIALLY LINEAR	17
1-Tetradecanol	ALCOHOLS (C14-C18), PRIMARY, LINEAR AND ESSENTIALLY LINEAR	17
Tetradecene (a)	OLEFINS (C13+, ALL ISOMERS)	17
Tetradecylbenzene	ALKYL(C9+)BENZENES	17
TETRAETHYLENE GLYCOL		17
TETRAETHYLENE PENTAMINE		17
Tetraethyllead	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
Tetraethylplumbane	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
TETRAETHYL SILICATE MONOMER/OLIGOMER (20% IN ETHANOL)		18
3a,4,7,7a-Tetrahydro-3,5-dimethyl-4,7-methano-1H-indene	METHYLCYCLOPENTADIENE DIMER	17
TETRAHYDROFURAN		17
TETRAHYDRONAPHTHALENE		17
1,2,3,4-Tetrahydronaphthalene	TETRAHYDRONAPHTHALENE	17
Tetrahydro-1,4-oxazine	MORPHOLINE	17
2H-Tetrahydro-1,4-oxazine	MORPHOLINE	17
Tetrahydro-2H-1,4-oxazine	MORPHOLINE	17
Tetrahydrothiophene-1-dioxide	SULPHOLANE	17
Tetrahydrothiophene 1,1-dioxide	SULPHOLANE	17
Tetralin	TETRAHYDRONAPHTHALENE	17
TETRAMETHYLBENZENE (ALL ISOMERS)		17
1,2,3,4-Tetramethylbenzene (a)	TETRAMETHYLBENZENE (ALL ISOMERS)	17
1,2,3,5-Tetramethylbenzene (a)	TETRAMETHYLBENZENE (ALL ISOMERS)	17
1,2,4,5-Tetramethylbenzene (a)	TETRAMETHYLBENZENE (ALL ISOMERS)	17
Tetramethylene cyanide	ADIPONITRILE	17
Tetramethylene dicyanide	ADIPONITRILE	17
Tetramethylene glycol (a)	BUTYLENE GLYCOL	17
Tetramethylene oxide	TETRAHYDROFURAN	17
Tetramethylenesulphone	SULPHOLANE	17
Tetramethyllead	MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYL)	17
Tetrapropylbenzene	ALKYL(C9+)BENZENES	17
Tetrapropylenebenzene	DODECYLBENZENE	17
Tetryl formate	ISOBUTYL FORMATE	17

Index Name	Product Name	Chapter
4-thiapentanal	3-(METHYLTHIO)PROPIONALDEHYDE	17
Thiophan sulphone	SULPHOLANE	17
Thiosulphuric acid, dipotassium salt (50% or less)	POTASSIUM THIOSULPHATE (50% OR LESS)	17
Titanium(IV) oxide slurry	TITANIUM DIOXIDE SLURRY	17
TITANIUM DIOXIDE SLURRY		17
TOLUENE		17
TOLUENEDIAMINE		17
2,4-Toluenediamine (a)	TOLUENEDIAMINE	17
2,6-Toluenediamine (a)	TOLUENEDIAMINE	17
TOLUENE DIISOCYANATE		17
2-Toluidine	O-TOLUIDINE	17
O-TOLUIDINE		17
Toluol	TOLUENE	17
o-Tolylamine	O-TOLUIDINE	17
2,4-Tolylenediamine (a)	TOLUENEDIAMINE	17
2,6-Tolylenediamine (a)	TOLUENEDIAMINE	17
Tolylenediisocyanate	TOLUENE DIISOCYANATE	17
2,4-Tolylene diisocyanate	TOLUENE DIISOCYANATE	17
m-Tolylene diisocyanate	TOLUENE DIISOCYANATE	17
Toxilic anhydride	MALEIC ANHYDRIDE	17
Treacle (a)	MOLASSES	18
Triacetin	GLYOXAL SOLUTION (40% OR LESS)	17
3,6,9-Triazaundecamethylenediamine	TETRAETHYLENE PENTAMINE	17
3,6,9-Triazaundecane-1,11-diamine	TETRAETHYLENE PENTAMINE	17
TRIBUTYL PHOSPHATE		17
1,2,3-TRICHLOROBENZENE (MOLTEN)		17
1,2,4-TRICHLOROBENZENE		17
1,1,1-TRICHLOROETHANE		17
1,1,2-TRICHLOROETHANE		17
beta-Trichloroethane	1,1,2-TRICHLOROETHANE	17
Trichloroethene	TRICHLOROETHYLENE	17
TRICHLOROETHYLENE		17
Trichloromethane	CHLOROFORM	17
1,2,3-TRICHLOROPROPANE		17
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		17
TRICRESYL PHOSPHATE (CONTAINING 1% OR MORE ORTHO-ISOMER)		17
TRICRESYL PHOSPHATE (CONTAINING LESS THAN 1% ORTHO-ISOMER)		17
TRIDECANE		17
TRIDECANOIC ACID		17
Tridecanol (a)	ALCOHOLS (C13+)	17
Tridecene (a)	OLEFINS (C13+, ALL ISOMERS)	17
Tridecoic acid	TRIDECANOIC ACID	17
TRIDECYL ACETATE		17

Index Name	Product Name	Chapter
Tridecyl alcohol (a)	ALCOHOLS (C13+)	17
Tridecylbenzene	ALKYL(C9+)BENZENES	17
Tridecylic acid	TRIDECANOIC ACID	17
Tridecylic acid (a)	FATTY ACID (SATURATED C13+)	17
Tri(dimethylphenyl) phosphate (all isomers)	TRIXYLYL PHOSPHATE	17
TRIETHANOLAMINE		17
TRIETHYLAMINE		17
TRIETHYLBENZENE		17
TRIETHYLENE GLYCOL		18
Triethylene glycol butyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
Triethylene glycol ethyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
Triethylene glycol methyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
Triethylene glycol monobutyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
TRIETHYLENETETRAMINE		17
TRIETHYL PHOSPHATE		17
TRIETHYL PHOSPHITE		17
Triformol	1,3,5-TRIOXANE	17
Triglycol	TRIETHYLENE GLYCOL	18
Trihydroxypropane	GLYCERINE	17
Trihydroxytriethylamine	TRIETHANOLAMINE	17
TRIISOPROPANOLAMINE		17
TRIISOPROPYLATED PHENYL PHOSPHATES		17
TRIMETHYLACETIC ACID		17
TRIMETHYLAMINE SOLUTION (30% OR LESS)		17
TRIMETHYLBENZENE (ALL ISOMERS)		17
1,2,3-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
1,2,4-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
1,3,5-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	ALPHA-PINENE	17
Trimethylcarbinol	TERT-BUTYL ALCOHOL	17
1,1,3-Trimethyl-3-cyclohexene-5-one	ISOPHORONE	17
3,5,5-Trimethylcyclohex-2-enone	ISOPHORONE	17
3,5,5-Trimethylcyclohex-2-en-one	ISOPHORONE	17
TRIMETHYLOL PROPANE PROPOXYLATED		17
2,2,4-Trimethylpentane (a)	OCTANE (ALL ISOMERS)	17
2,2,4-TRIMETHYL-1,3-PENTANEDIOL DIISOBUTYRATE		17
2,2,4-Trimethylpentane-1,3-diol diisobutyrate	2,2,4-TRIMETHYL-1,3-PENTANEDIOL DIISOBUTYRATE	17
2,2,4-TRIMETHYL-1,3-PENTANEDIOL-1-ISOBUTYRATE		17
2,4,4-Trimethylpentene-1	DIISOBUTYLENE	17
2,4,4-Trimethylpent-1-ene	DIISOBUTYLENE	17
2,4,4-Trimethylpentene-2	DIISOBUTYLENE	17
2,4,4-Trimethylpent-2-ene	DIISOBUTYLENE	17

Index Name	Product Name	Chapter
2,4,6-Trimethyl-1,3,5-trioxane	PARALDEHYDE	17
2,4,6-Trimethyl-s-trioxane	PARALDEHYDE	17
Trioxan	1,3,5-TRIOXANE	17
1,3,5-TRIOXANE		17
5,8,11-Trioxapentadecane	DIETHYLENE GLYCOL DIBUTYL ETHER	17
3,6,9-Trioxaundecane	DIETHYLENE GLYCOL DIETHYL ETHER	17
Trioxymethylene	1,3,5-TRIOXANE	17
Tripropylene	PROPYLENE TRIMER	17
TRIPROPYLENE GLYCOL		17
Tripropylene glycol methyl ether (a)	POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER	17
Tris(dimethylphenyl) phosphate (all isomers)	TRIXYLYL PHOSPHATE	17
Tris(2-hydroxyethyl)amine	TRIETHANOLAMINE	17
2,4-D-tris(2-hydroxy-2-methylethyl)ammonium	2,4-DICHLOROPHOXYACETIC ACID, TRIISOPROPANOLAMINE SALT SOLUTION	17
Tris(2-hydroxypropyl)amine	TRIISOPROPANOLAMINE	17
Tris(2-hydroxy-1-propyl)amine	TRIISOPROPANOLAMINE	17
Tris(2-hydroxypropyl)ammonium 2,4-dichlorophenoxyacetate solution	2,4-DICHLOROPHOXYACETIC ACID, TRIISOPROPANOLAMINE SALT SOLUTION	17
Trisodium 2-[carboxylatomethyl(2-hydroxyethyl)amino]ethyliminodi(acetate) solution	N- (HYDROXYETHYL)ETHYLENEDIAMINETRIAC ETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine solution	N- (HYDROXYETHYL)ETHYLENEDIAMINETRIAC ETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium N-(2-hydroxyethyl)ethylenediamine-N,N',N'-triacetate solution	N- (HYDROXYETHYL)ETHYLENEDIAMINETRIAC ETIC ACID, TRISODIUM SALT SOLUTION	17
Trisodium nitrilotriacetate solution	NITRILOTRIACETIC ACID, TRISODIUM SALT SOLUTION	17
Trityl phosphate, containing less than 1% ortho- isomer	TRICRESYL PHOSPHATE (CONTAINING LESS THAN 1% ORTHO-ISOMER)	17
Trityl phosphate, containing 1% or more ortho- isomer	TRICRESYL PHOSPHATE (CONTAINING 1% OR MORE ORTHO-ISOMER)	17
Trixylenyl phosphate	TRIXYLYL PHOSPHATE	17
TRIXYLYL PHOSPHATE		17
TUNG OIL		17
TURPENTINE		17
Turpentine oil	TURPENTINE	17
Turps	TURPENTINE	17
Type A Zeolite slurry (a)	SODIUM ALUMINOSILICATE SLURRY	17
1-Undecanecarboxylic acid	LAURIC ACID	17
N-Undecane (a)	N-ALKANES (C10-C20)	17
UNDECANOIC ACID		17
Undecan-1-ol	UNDECYL ALCOHOL	17
1-UNDECENE		17
Undec-1-ene	1-UNDECENE	17
UNDECYL ALCOHOL		17
Undecylbenzene	ALKYL(C9+)BENZENES	17
Undecylic acid	UNDECANOIC ACID	17
n-Undecylic acid	UNDECANOIC ACID	17

Index Name	Product Name	Chapter
uns-Trimethylbenzene (a)	TRIMETHYLBENZENE (ALL ISOMERS)	17
unsym-Trichlorobenzene	1,2,4-TRICHLOROENZENE	17
UREA/AMMONIUM NITRATE SOLUTION		17
UREA/AMMONIUM PHOSPHATE SOLUTION		17
UREA SOLUTION		17
USED COOKING OIL (M)		17
USED COOKING OIL (TRIGLYCERIDES, C16-C18 AND C18 UNSATURATED)** (M)		17
Valeral	VALERALDEHYDE (ALL ISOMERS)	17
VALERALDEHYDE (ALL ISOMERS)		17
n-Valeraldehyde	VALERALDEHYDE (ALL ISOMERS)	17
Valerianic acid	PENTANOIC ACID	17
Valeric acid	PENTANOIC ACID	17
n-Valeric acid	PENTANOIC ACID	17
Valeric aldehyde	VALERALDEHYDE (ALL ISOMERS)	17
Valerone	DIISOBUTYL KETONE	17
Vaseline (cosmetic)	PARAFFIN WAX, HIGHLY-REFINED	17
VEGETABLE ACID OILS (M)		17
VEGETABLE FATTY ACID DISTILLATES (M)		17
VEGETABLE OIL MIXTURES, CONTAINING LESS THAN 15% FREE FATTY ACID (M)		17
VEGETABLE PROTEIN SOLUTION (HYDROLYSED)		18
Vinegar acid	ACETIC ACID	17
Vinegar naphtha	ETHYL ACETATE	17
VINYL ACETATE		17
Vinylbenzene	STYRENE MONOMER	17
Vinylcarbinol	ALLYL ALCOHOL	17
Vinyl cyanide	ACRYLONITRILE	17
vinyl ethanoate	VINYL ACETATE	17
VINYL ETHYL ETHER		17
Vinylformic acid	ACRYLIC ACID	17
VINYLDENE CHLORIDE		17
VINYL NEODECANOATE		17
VINYLTOLUENE		17
Vinytoluene (all isomers)	VINYLTOLUENE	17
Vinyl trichloride	1,1,2-TRICHLOROETHANE	17
Vitriol brown oil	SULPHURIC ACID	17
WATER		18
Water glass solutions	SODIUM SILICATE SOLUTION	17
White bole	KAOLIN SLURRY	18
White caustic solution	SODIUM HYDROXIDE SOLUTION (*)	17
WHITE SPIRIT, LOW (15-20%) AROMATIC		17
White tar	NAPHTHALENE (MOLTEN)	17
Wine (a)	ALCOHOLIC BEVERAGES, N.O.S.	18
Wintergreen oil	METHYL SALICYLATE	17

Index Name	Product Name	Chapter
Wood alcohol	METHYL ALCOHOL (*)	17
WOOD LIGNIN WITH SODIUM ACETATE/OXALATE		17
Wood naphtha	METHYL ALCOHOL (*)	17
Wood spirit	METHYL ALCOHOL (*)	17
XYLENES		17
XYLENES/ETHYLBENZENE (10% OR MORE) MIXTURE		17
XYLENOL		17
Xylenol (all isomers)	XYLENOL	17
2,3-Xylenol (a)	XYLENOL	17
2,4-Xylenol (a)	XYLENOL	17
2,5-Xylenol (a)	XYLENOL	17
2,6-Xylenol (a)	XYLENOL	17
3,4-Xylenol (a)	XYLENOL	17
3,5-Xylenol (a)	XYLENOL	17
Xylols	XYLENES	17
ZINC ALKARYL DITHIOPHOSPHATE (C7-C16)		17
ZINC ALKENYL CARBOXAMIDE		17
ZINC ALKYL DITHIOPHOSPHATE (C3-C14)		17
Zinc bromide drilling brine	DRILLING BRINES (CONTAINING ZINC CHLORIDE)	17
z-Octadec-9-enamine	OLEYLAMINE	17
(Z)-Octadec-9-enoic acid	OLEIC ACID	17
Z-Octadec-9-enoic acid	OLEIC ACID	17
(Z)-Octadec-9-enylamine	OLEYLAMINE	17

"

4 The complete text of chapter 21 is replaced by the following:

"Chapter 21

Criteria for assigning carriage requirements for products subject to the IBC Code

21.1 Introduction

21.1.1 The following criteria are used for the determination of pollution classification and assignment of appropriate carriage requirements for bulk liquid cargoes being assessed for entry into the IBC Code or lists 1, 3 or 4 of the MEPC.2/Circular.

21.1.2 In developing such criteria, every effort has been made to follow the criteria and cut off points developed under the Globally Harmonized System (GHS).

21.1.3 Although the criteria are intended to be closely defined in order to establish a uniform approach, it must be emphasized that where human experience or other factors indicate the need for alternative arrangements, these shall always be taken into account. Where deviations from the criteria have been recognized, they shall be properly recorded with justifications.

21.2 Contents

21.2.1 This chapter contains the following:

- .1 minimum safety and pollution criteria for products subject to chapter 17 of the IBC Code;
- .2 criteria used to assign the minimum carriage requirements for products that meet the safety or pollution criteria to make them subject to chapter 17 of the IBC Code;
- .3 criteria used for determining special requirements in chapter 15 of the IBC Code to be included in *column o* of chapter 17 of the IBC Code;
- .4 criteria used for determining special requirements in chapter 16 of the IBC Code to be included in *column o* of chapter 17 of the IBC Code;
- .5 definitions of properties used within this chapter;
- .6 information on the use of the GESAMP Hazard Ratings; and
- .7 information on the application of the SVC/LC₅₀ ratio method.

21.2.2 The information included in parentheses following the classification criteria throughout this chapter refers to the GESAMP Hazard Profile ratings set out in appendix I of MARPOL Annex II under the "Abbreviated legend to the revised GESAMP Hazard Evaluation procedure". The full listing of GESAMP Hazard Profile ratings for evaluated substances are published annually in the GESAMP Composite List as a PPR Circular. It should be noted that ratings in parentheses (based on estimation methods applied by GESAMP) are considered as equivalent to ratings without parentheses for the purpose of assigning carriage requirements.

21.3 Minimum safety and pollution criteria for products subject to chapter 17 of the IBC Code

21.3.1 Products are deemed to be hazardous and subject to chapter 17 of the IBC Code if they meet one or more of the following criteria:

- .1 inhalation LC₅₀/ATE ≤ 20 mg/L/4h (see paragraph 21.7.1.3) (C3 = 1, 2, 3 or 4);
- .2 dermal LD₅₀/ATE ≤ 2000 mg/kg (see paragraph 21.7.1.2) (C2 = 1, 2, 3 or 4);
- .3 oral LD₅₀/ATE ≤ 2000 mg/kg (see paragraph 21.7.1.1) (C1 = 1, 2, 3, or 4);
- .4 toxic to mammals by prolonged exposure (see paragraph 21.7.2) (D3 = C, M, R, N, T, or I);
- .5 cause skin sensitization (see paragraph 21.7.3) (D3 = Ss);
- .6 cause respiratory sensitization (see paragraph 21.7.4) (D3 = Sr);
- .7 corrosive to skin (see paragraph 21.7.5) (D1 = 3, 3A, 3B, or 3C);

- .8 with a Water Reactive Index (WRI) of ≥ 1 (see paragraph 21.7.6);
- .9 require inertion, inhibition, stabilization, temperature control or tank environmental control in order to prevent a hazardous reaction (see definitions in paragraph 21.7.10);
- .10 flashpoint $< 23^{\circ}\text{C}$; and have an explosive/flammability range (expressed as a percentage by volume in air) of $\geq 20\%$;
- .11 auto-ignition temperature of $\leq 200^{\circ}\text{C}$; and
- .12 classified as pollution category X or Y or meeting the criteria for rules 11 to 13 in table 2 in paragraph 21.4.5.2.

21.4 Criteria used to assign the minimum carriage requirements for products that meet the minimum safety or pollution criteria to make them subject to chapter 17 of the IBC Code

21.4.1 Column a – Product name

21.4.1.1 A standardized chemical name, preferably assigned on the basis of the Chemical Abstracts Service (CAS) or the International Union of Pure and Applied Chemistry (IUPAC) system, shall be used as far as possible. However, where this is unnecessarily complex, then a technically correct and unambiguous alternative name may be used.

21.4.2 Column b – Deleted

21.4.3 Column c – Pollution category

21.4.3.1 *Column c* identifies the pollution category assigned to each product in accordance with MARPOL Annex II, based on table 1 below (see MARPOL Annex II, appendix I).

Table 1 – Guidelines for the categorization of Noxious Liquid Substances

Rule	A1 Bio- accumulation	A2 Bio- degradation	B1 Acute toxicity	B2 Chronic toxicity	D3 Long-term health effects	E2 Effects on marine wildlife and on benthic habitats	Cat
1			≥ 5				X
2	≥ 4		4				
3		NR	4				
4	≥ 4	NR			CMRTNI ¹		Y
5			4				
6			3				
7			2				
8	≥ 4	NR		Not 0			
9				≥ 1			

¹ Applies if the D3 rating contains any of these letters or any combination thereof.

10						Fp, F or S If not Inorganic	
11					CMRTNI ¹		
12	Any product not meeting the criteria of rules 1 to 11 and 13						Z
13	All products identified as: ≤ 2 in column A1; R in column A2; blank in column D3; not Fp, F or S (if not organic) in column E2; and 0 (zero) in all other columns of the GESAMP Hazard Profile						OS

21.4.4 Column d – Hazards

21.4.4.1 An "S" is assigned to *column d* if any of the safety criteria described in paragraphs 21.3.1.1 to 21.3.1.11 are met.

21.4.4.2 A "P" is assigned to *column d* if the product meets the criteria for assigning ship type 1 to 3 as defined by rules 1 to 14 in the table 2.

21.4.5 Column e – Ship type

21.4.5.1 Assignment of ship types is carried out from both a pollution and safety perspective. The basic criteria for assigning ship types from a pollution perspective is carried out based on the GESAMP Hazard Profile, shown in table 2. An explanation of the details in the columns is provided in appendix I of MARPOL Annex II.

21.4.5.2 The following criteria are used to assign the ship type:

Ship type 1:

Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ ≥ 20; and/or

Dermal LD₅₀/ATE ≤ 50 mg/kg (C2 = 4); and/or

WRI = 3; and/or

Auto-ignition temperature ≤ 65°C; and/or

Explosive range ≥ 50% v/v in air and the flashpoint < 23°C; and/or

Rules 1 or 2 of the table 2 shown in 21.4.5.2 (below).

Ship type 2:

Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ < 20; or

Inhalation² LC₅₀/ATE > 0.5 mg/L/4h – ≤ 2mg/L/4h (C3 = 3) and SVC/LC₅₀ ≥ 2; and/or

Dermal LD₅₀/ATE > 50 mg/kg – ≤ 200 mg/kg (C2 = 3); and/or

WRI = 2; and/or

Auto-ignition temperature ≤ 200°C; and/or

Explosive range ≥ 40% v/v in air and the flashpoint < 23°C; and/or

Any product meeting the criteria of rules 3 to 10 in table 2.

Ship type 3:

Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 of the IBC Code not meeting the requirements for ship types 1 or 2 and not meeting rule 15 of table 2 shown in 21.4.5.2 (below).

² Products with a density >1025 kg/m³ (sinkers) or a water solubility of >50% (dissolvers) that are assigned to Ship Type 2 based on the inhalation toxicity criteria, should be re-assigned to Ship Type 3.

Table 2 – Assignment of ship types based on the GESAMP Hazard Profile

Rule	A1	A2	B1	B2	D3	E2	Ship Type
1			≥ 5				1
2	≥ 4	NR	4		CMRTNI ³		
3	≥ 4	NR			CMRTNI ³		
4			4				2
5	≥ 4		3				
6		NR	3				
7				≥ 1			
8						Fp	
9					CMRTNI ³	F	
10			≥ 2			S	3
11	≥ 4						
12		NR					
13			≥ 1				
14	All other category Y Substances						NA
15	All other category Z Substances All "Other Substances" (OS)						

21.4.6 Column f – Tank type

21.4.6.1 The tank type is assigned according to the following criteria:

Tank type 1G: Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4) and SVC/LC₅₀ ≥ 1000; and/or
Dermal LD₅₀/ATE ≤ 50 mg/kg (C2 = 4); and/or;
WRI=3; and/or
Auto-ignition temperature ≤ 65°C; and/or
Explosive range ≥ 40% v/v in air and the flashpoint < 23°C.
Based on expert judgement, tank type 1G may be required for specific products (e.g. for molten sulphur, hydrochloric acid)

Tank type 2G: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for tank type 1G.

21.4.7 Column g – Tank vents

21.4.7.1 The tank venting arrangements are assigned according to the following criteria:

Controlled: Inhalation LC₅₀/ATE ≤ 10 mg/L/4h (C3 = 2, 3 or 4), unless in accordance with 21.7.12; and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Special carriage control needed; and/or
Flashpoint ≤ 60°C; and
Corrosive to skin (≤ 4h exposure). (D1 = 3A, 3B, or 3C).

³ Applies if the D3 rating contains any of these letters or any combination thereof.

Open: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for controlled tank vents.

21.4.8 Column h – Tank environmental control

21.4.8.1 The tank environmental control conditions are assigned according to the following criteria:

Inert: Auto-ignition temperature $\leq 200^{\circ}\text{C}$; and/or
 Reacts with air to cause a hazard; and/or
 Explosive range $\geq 40\%$ and the flashpoint $< 23^{\circ}\text{C}$.
 Dry: WRI > 1
 Pad: Only applies to specific products identified on a case by case basis.
 Vent: Only applies to specific products identified on a case by case basis.
 No: Where the above criteria do not apply (inerting requirements may be required under SOLAS).

21.4.9 Column i – Electrical equipment

21.4.9.1 If the flashpoint of the product is $\leq 60^{\circ}\text{C}$ or the product is heated to within 15°C of its flashpoint then the electrical equipment required are assigned according to the following criteria, otherwise "-" is assigned in column *i'* and *i''*:

.1 Column *i'* – Temperature class:

T1 Auto-ignition temperature $\geq 450^{\circ}\text{C}$
 T2 Auto-ignition temperature $\geq 300^{\circ}\text{C}$ but $< 450^{\circ}\text{C}$
 T3 Auto-ignition temperature $\geq 200^{\circ}\text{C}$ but $< 300^{\circ}\text{C}$
 T4 Auto-ignition temperature $\geq 135^{\circ}\text{C}$ but $< 200^{\circ}\text{C}$
 T5 Auto-ignition temperature $\geq 100^{\circ}\text{C}$ but $< 135^{\circ}\text{C}$
 T6 Auto-ignition temperature $\geq 85^{\circ}\text{C}$ but $< 100^{\circ}\text{C}$

.2 Column *i''* – Apparatus group:

Apparatus group	MESG at 20°C (mm)	MIC ratio product/methane
IIA	> 0.90	> 0.80
IIB	> 0.50 to ≤ 0.90	> 0.45 to ≤ 0.80
IIC	≤ 0.50	≤ 0.45

.1 The tests shall be carried out in accordance with the procedures described in IEC 60079-1-1:2002 and IEC 79-3.

.2 For gases and vapours it is sufficient to make only one determination of either the Maximum Experimental Safe Gap (MESG) or the Minimum Igniting Current (MIC) provided that:

for Group IIA: the MESG > 0.90 mm or the MIC ratio > 0.80
 for Group IIB: the MESG is > 0.50 mm and ≤ 0.90 mm; or
 the MIC ratio is > 0.45 and ≤ 0.80

for Group IIC: the MESH is ≤ 0.50 mm or the MIC ratio is ≤ 0.45

- .3 It is necessary to determine both the MESH and the MIC ratio when:
- .1 the MIC ratio determination only has been made, and the ratio is between 0.80 and 0.90, when an MESH determination will be required;
 - .2 the MIC ratio determination only has been made, and the ratio is between 0.45 and 0.50, when an MESH determination will be required; or
 - .3 the MESH only has been found, and is between 0.50 mm and 0.55 mm, when an MIC ratio determination will be required.

.3 **Column i''' Flashpoint:**

> 60°C	Yes
$\leq 60^\circ\text{C}$	No
Non-flammable	NF

21.4.10 Column j – Gauging

21.4.10.1 The gauging equipment is assigned according to the following criteria:

- Closed: Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4), unless in accordance with 21.7.12; and/or
Dermal $LD_{50}/ATE \leq 1000$ mg/kg (C2 = 2, 3 or 4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin (≤ 3 min exposure) (D1= 3C).
- Restricted: Inhalation $LC_{50}/ATE >2 - \leq 10$ mg/L/4h (C3 = 2), unless in accordance with 21.7.12; and/or
Special carriage control indicates inerting required; and/or
Highly corrosive to skin (> 3 min - ≤ 1 h exposure) (D1 = 3B); and/or
Flashpoint $\leq 60^\circ\text{C}$.
- Open: Any of the minimum safety or pollution criteria for bulk liquid cargoes subject to chapter 17 or the IBC Code not meeting the requirements for closed or restricted gauging.

21.4.11 Column k – Vapour detection

21.4.11.1 The vapour detection equipment is assigned according to the following criteria:

- Toxic (T): Inhalation $LC_{50}/ATE \leq 10$ mg/L/4h (C3 = 2, 3, or 4), unless in accordance with 21.7.12, and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I).

Flammable (F): Flashpoint $\leq 60^{\circ}\text{C}$
No (No): Where the above criteria do not apply

21.4.12 **Column l – Fire protection equipment**

21.4.12.1 The appropriate firefighting media are defined as being appropriate according to the following criteria related to the properties of the product:

Solubility > 10% (> 100000 mg/L)	A	Alcohol-resistant foam
Solubility $\leq 10\%$ (≤ 100000 mg/L)	A	Alcohol-resistant foam; and/or
	B	Regular foam
WRI = 0	C	Water spray (generally used as a coolant and can be used with A and/or B providing that the WRI = 0)
WRI ≥ 1	D	Dry chemical
	No	No requirements under this Code ⁴

Note: all appropriate media shall be listed.

21.4.13 **Column m – Deleted**

21.4.14 **Column n – Emergency equipment**

21.4.14.1 The requirement to have personnel emergency equipment on board is identified by "Yes" in *column n* according to the following criteria:

Inhalation $\text{LC}_{50}/\text{ATE} \leq 2$ mg/L/4h (C3 = 3 or 4); unless in accordance with 21.7.12 and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin (≤ 3 min exposure) (D1 = 3C); and/or
WRI = 2.

No: indicates that the above criteria do not apply.

21.5 **Column o – Criteria for special requirements in chapter 15**

21.5.1 The assignment of special requirements in *column o* shall normally follow clear criteria based on the data supplied in the reporting form. Where it is considered appropriate to deviate from such criteria, this shall be clearly documented in such a way that it can easily be retrieved on demand.

21.5.2 The criteria for making reference to the special requirements identified in chapters 15 and 16 are defined below with comments where relevant.

⁴ This applies where a product as identified as NF in column i" (see paragraph 21.4.9.1.3).

21.5.3 Paragraphs 15.2 to 15.10 and 15.20

21.5.3.1 Paragraphs 15.2 to 15.10 and 15.20 identify specific products by name with special carriage requirements that cannot be easily accommodated in any other way.

21.5.4 Paragraph 15.11 – Acids

21.5.4.1 Paragraph 15.11 applies to all acids unless they:

- .1 are organic acids – when only paragraphs 15.11.2 to 15.11.4 and paragraphs 15.11.6 to 15.11.8 apply; or
- .2 do not evolve hydrogen – when paragraph 15.11.5 need not apply.

21.5.5 Paragraph 15.12 – Toxic products

21.5.5.1 All of paragraph 15.12 is added to *column o* according to the following criteria:

Inhalation $LC_{50}/ATE \leq 2 \text{ mg/L/4h}$ ($C3 = 3$ or 4), unless in accordance with 21.7.12; and/or
the product is a respiratory sensitizer ($D3 = Sr$, see also paragraph 21.7.4); and/or
the product is toxic to mammals by prolonged exposure ($D3 = C, M, R, T, N, \text{ or } I$).

21.5.5.2 Paragraphs 15.12.3 and 15.12.4 are added to *column o* according to the following criterion:

Inhalation $LC_{50}/ATE > 2 - \leq 10 \text{ mg/L/4h}$ ($C3 = 2$), unless in accordance with 21.7.12.

21.5.5.3 Paragraph 15.12.3.2 is added to *column o* according to the following criteria:

Dermal $LD_{50}/ATE \leq 1000 \text{ mg/kg}$ ($C2 = 2, 3, \text{ or } 4$); and/or
Oral $LD_{50}/ATE \leq 300 \text{ mg/kg}$ ($C1 = 2, 3, \text{ or } 4$).

21.5.6 Paragraph 15.13 – Cargoes protected by additives

21.5.6.1 The requirement to assign paragraph 15.13 to *column o* is based on the information related to the product's tendency to polymerize, decompose, oxidize or undergo other chemical changes which may cause a hazard under normal carriage conditions, but which would be prevented by the addition of appropriate additives.

21.5.7 Paragraph 15.14 – Cargoes with a vapour pressure greater than atmospheric at 37.8°C

21.5.7.1 The requirement to assign paragraph 15.14 to *column o* is based on the following criterion:

Boiling point $\leq 37.8^\circ\text{C}$

21.5.8 Paragraph 15.16 – Cargo contamination

21.5.8.1 Paragraph 15.16.1 is deleted.

21.5.8.2 Paragraph 15.16.2 is added to *column o* according to the following criterion:
WRI > 1

21.5.9 Paragraph 15.17 – Increased ventilation requirements

21.5.9.1 Paragraph 15.17 shall be added to *column o* according to the following criteria:

Inhalation LC₅₀/ATE > 0.5 - ≤ 2 mg/L/4h (C3 = 3), unless in accordance with 21.7.12;
and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Toxic to mammals by prolonged exposure (D3 = C, M, R, T, N, or I); and/or
Highly to severely corrosive to skin (≤ 1h exposure time) (D1 = 3B or 3C).

21.5.10 Paragraph 15.18 – Special cargo pump-room requirements

21.5.10.1 Paragraph 15.18 shall be added to *column o* according to the following criterion:

Inhalation LC₅₀/ATE ≤ 0.5 mg/L/4h (C3 = 4), unless in accordance with 21.7.12

21.5.11 Paragraph 15.19 – Overflow control

21.5.11.1 Paragraph 15.19 shall be added to *column o* according to the following criteria:

Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4), unless in accordance with 21.7.12;
and/or
Dermal LD₅₀/ATE ≤ 1000 mg/kg (C2 = 2, 3, or 4); and/or
Oral LD₅₀/ATE ≤ 300 mg/kg (C1 = 2, 3, or 4); and/or
Respiratory sensitizer (D3 = Sr, see also paragraph 21.7.4); and/or
Severely corrosive to skin (≤ 3 min exposure) (D1 = 3C); and/or
Auto-ignition temperature ≤ 200°C; and/or
Explosive range ≥ 40% v/v in air and flashpoint < 23°C; and/or
Classified as ship type 1 on pollution grounds.

21.5.11.2 Only paragraph 15.19.6 shall apply if the product has any of the following properties:

Inhalation LC₅₀/ATE > 2 mg/L/4h - ≤10 mg/L/4h (C3 = 2), unless in accordance with 21.7.12; and/or
Dermal LD₅₀/ATE > 1000 mg/kg - ≤ 2000 mg/kg (C2 = 1); and/or
Oral LD₅₀/ATE > 300 mg/kg - ≤ 2000 mg/kg (C1 = 1); and/or
Skin sensitizer (D3=Ss); and/or
Highly corrosive to skin (> 3 min - ≤ 1h exposure) (D1 = 3B); and/or
Flashpoint ≤ 60°C; and/or
Classified as ship type 2 on pollution grounds; and/or
Pollution category X or Y.

21.5.12 Paragraph 15.21 –Temperature sensors

21.5.12.1 Paragraph 15.21 is added to *column o* according to the heat sensitivity of the product. This requirement is related to pumps in cargo pump-rooms only.

21.6 Column o – Criteria for special requirements in chapter 16.

21.6.1 Paragraphs 16.1 to 16.2.5 and 16.3 to 16.5

21.6.1.1 These apply to all cargoes and so are not referenced specifically in *column o*.

21.6.2 Paragraph 16.2.6

21.6.2.1 Paragraph 16.2.6 is added to *column o* for products, which meet the following criteria: Pollution Category X or Y and viscosity ≥ 50 mPa·s at 20°C.

21.6.3 Paragraph 16.2.9

21.6.3.1 Paragraph 16.2.9 is added to *column o* for products, which meet the following criterion: Melting point $\geq 0^\circ\text{C}$.

21.6.4 Paragraph 16.6 – Cargo not to be exposed to excessive heat

21.6.4.1 Paragraphs 16.6.2 to 16.6.4 are added to *column o* for products, which are identified as requiring temperature control during carriage.

21.6.5 Paragraph 16.2.7 – Persistent floaters

Paragraph 16.2.7 is added to *column o* for products which meet the following criteria: Pollution Category Y that are persistent floaters ($E2 = Fp$) with a viscosity greater than or equal to 50mPa·s at 20°C and/or with a melting point greater than or equal to 0°C.

21.7 Definitions

21.7.1 Acute mammalian toxicity

LC₅₀ is the concentration in air, LD₅₀ is the amount (dose) of test substance, which causes mortality to 50% of a test species. ATE refers to a dose (concentration) range or extrapolated dose (concentration) leading to lethal effects in mammals, equivalent to an LC₅₀ or LD₅₀.

21.7.1.1 Acutely toxic if swallowed

Oral toxicity (LD ₅₀ /ATE)		GESAMP Hazard Profile Rating C1
Hazard Level	mg/kg	
High	≤ 5	4
Moderately High	$> 5 - \leq 50$	3
Moderate	$> 50 - \leq 300$	2
Slight	$> 300 - \leq 2000$	1
Negligible	> 2000	0

21.7.1.2 Acutely toxic in contact with skin

Dermal toxicity (LD ₅₀ /ATE)		GESAMP Hazard Profile Rating C2
Hazard Level	mg/kg	
High	≤ 50	4
Moderately high	$> 50 - \leq 200$	3
Moderate	$> 200 - \leq 1000$	2
Slight	$> 1000 - \leq 2000$	1
Negligible	> 2000	0

21.7.1.3 Acutely toxic by inhalation⁵

Inhalation toxicity (LC ₅₀ /ATE)		GESAMP Hazard Profile Rating C3
Hazard level	mg/L/4h	
High	≤ 0.5	4
Moderately high	> 0.5 - ≤ 2	3
Moderate	> 2 - ≤ 10	2
Slight	> 10 - ≤ 20	1
Negligible	> 20	0

21.7.2 Toxic to mammals by prolonged exposure

21.7.2.1 A product is classified as *toxic to mammals by prolonged exposure* if it meets any of the following criteria: it is known to be, or suspected of being carcinogenic, mutagenic, reprotoxic, neurotoxic, immunotoxic or exposure below the lethal dose is known to cause Specific Target Organ Toxicity.

21.7.2.2 Such effects may be identified from the GESAMP Hazard Profile of the product (D3 = C, M, R, T, N, or I) or other recognized sources of such information.

21.7.3 Skin sensitization

21.7.3.1 A product is classified as a *skin sensitizer*:

- .1 if there is evidence in humans that the substance can induce sensitization by skin contact in a substantial number of persons; or
- .2 where there are positive results from an appropriate test.

21.7.3.2 Such effects are identified in the GESAMP Hazard Profile for the product (D3 = Ss).

21.7.4 Respiratory sensitization

21.7.4.1 A product is classified as a *respiratory sensitizer*:

- .1 if there is evidence in humans that the substance can induce specific respiratory hypersensitivity; and/or
- .2 where there are positive results from an appropriate test; and/or
- .3 where the product does not have a GESAMP Hazard Profile and is identified as a skin sensitizer and there is no evidence to show that it is not a respiratory sensitizer.

21.7.4.2 Such effects are identified in the GESAMP Hazard Profile for the product (D3 = Sr) or other recognized sources of such information, if no profile exists.

⁵ All inhalation toxicity data are assumed to be for vapours and not mists or sprays, unless otherwise indicated.

21.7.5 Corrosive to skin

Hazard Level	Exposure time to cause full thickness necrosis of skin	GESAMP Hazard Profile rating (D1)
Severely corrosive to skin	≤ 3 min	3C
Highly corrosive to skin	> 3 min - ≤ 1h	3B (3 ⁶)
Moderately corrosive to skin	> 1h - ≤ 4h	3A

21.7.6 Water reactive substances⁷

21.7.6.1 These are classified as follows:

Water Reactive Index (WRI)	Definition
3	Any chemical which is extremely reactive with water and produces large quantities of flammable, toxic or corrosive gas or aerosol
2	Any chemical which, in contact with water, may produce a toxic, flammable or corrosive gas or aerosol
1	Any chemical which, in contact with water, may generate heat or produce a non-toxic, non-flammable or non-corrosive gas
0	Any chemical which, in contact with water, would not undergo a reaction to justify a value of 1, 2 or 3

21.7.7 Air reactive substances

21.7.7.1 Air reactive substances are products that react with air to cause a potentially hazardous situation, e.g. the formation of peroxides that may cause an explosive reaction.

21.7.8 Electrical apparatus – Temperature class

(for products which either have a flashpoint of ≤ 60°C or are heated to within 15°C of their flashpoint)

21.7.8.1 The temperature class is defined by the International Electrotechnical Commission (IEC) as:

"The highest temperature attained under practical conditions of operation within the rating of the apparatus (and recognized overloads, if any, associated therewith) by any part of any surface, the exposure of which to an explosive atmosphere may involve a risk."

21.7.8.2 The temperature class of the electrical apparatus is assigned by selecting the Maximum Surface Temperature which is closest to, but less than, the product's auto-ignition temperature (see 21.4.9.1.1).

⁶ Note: A rating of 3 in the D1 column of the GESAMP Hazard Profile, without any additional letter notation (A, B or C), means that the severity of corrosivity has not been established. For such cases, a rating of 3 is understood to be equivalent to a rating of 3B for the purpose of assigning carriage requirements.

⁷ Products that are corrosive to skin are also deemed to be corrosive by inhalation.

21.7.9 Electrical apparatus – Apparatus group

(for products with a flashpoint of $\leq 60^{\circ}\text{C}$)

21.7.9.1 This refers to intrinsically safe and associated electrical apparatus for explosive gas atmospheres which the IEC divide into the following groups:

Group I: for mines susceptible to firedamp (not used by IMO); and

Group II: for applications in other industries – further sub-divided according to its Maximum Experimental Safe Gap (MESG) and/or the Minimum Igniting Current (MIC) of the gas/vapour into groups IIA, IIB and IIC.

21.7.9.2 This property cannot be determined from other data associated with the product; it has to be either measured or assigned by assimilation with related products in a homologous series.

21.7.10 Special carriage control conditions

21.7.10.1 Special carriage control conditions refer to specific measures that need to be taken in order to prevent a hazardous reaction. They include:

- .1 *Inhibition*: the addition of a compound (usually organic) that retards or stops an undesired chemical reaction such as corrosion, oxidation or polymerization.
- .2 *Stabilization*: the addition of a substance (stabilizer) that tends to keep a compound, mixture or solution from changing its form or chemical nature. Such stabilizers may retard a reaction rate, preserve a chemical equilibrium, act as antioxidants, keep pigments and other components in emulsion form or prevent the particles in colloidal suspension from precipitating.
- .3 *Inertion*: the addition of a gas (usually nitrogen) in the ullage space of a tank that prevents the formation of a flammable cargo/air mixture.
- .4 *Temperature control*: the maintenance of a specific temperature range for the cargo in order to prevent a hazardous reaction or to keep the viscosity low enough to allow the product to be pumped.
- .5 *Padding and venting*: only applies to specific products identified on a case by case basis.

21.7.11 Flammable cargoes

21.7.11.1 A cargo is defined as flammable according to the following criteria:

IBC Code descriptor	Flashpoint (degrees Centigrade)
Highly flammable	< 23
Flammable	≤ 60 but ≥ 23

21.7.11.2 It should be noted that flashpoints of mixtures and aqueous solutions need to be measured unless all of the components are non-flammable.

21.7.11.3 It should be noted that the carriage of bulk liquid cargoes that have a flashpoint of $\leq 60^{\circ}\text{C}$ are subject to other SOLAS regulations.

21.7.12 Application of the SVC/LC₅₀ ratio method

21.7.12.1 If the vapour pressure and the molecular weight of a substance are known, an estimate of the maximum vapour concentration in a closed compartment (e.g. a tank) can be calculated. This is called the saturated vapour concentration (SVC).

21.7.12.2 The hazard quotient SVC/LC₅₀⁸ is a substance specific value for the velocity of a vapour for achieving a hazardous concentration when emerging from a liquid source (e.g. leak, spillage or tank ventilation), and can be used in the assignment of specific carriage requirements related to inhalation toxicity.

21.7.12.3 If a solid substance is transported in an aqueous solution, the vapour pressure⁹ of this solid rather than that of water may be used in the calculation of the SVC/LC₅₀ ratio.

21.7.12.4 Application of the SVC/LC₅₀ ratio for assigning Ship Type and Tank type

21.7.12.4.1 For the assignment of ship type and tank type, as set out in paragraphs 21.4.5 and 21.4.6, the application of the SVC/LC₅₀ ratio method is optional. Should this method be used, the vapour pressure at 20°C shall be used when calculating the SVC/LC₅₀ ratio.

21.7.12.4.2 The SVC mg/L of a substance should be calculated as follows:

$$SVC(mg/L) = \left(\frac{\text{Vapour pressure @ } 20^{\circ} \text{ C (Pa)}}{101300 \text{ (Pa)}} \times 10^6 \right) \times \frac{M_w \left(\frac{g}{mol} \right)}{24(L/mol) \times 1000}$$

where M_w is the molecular weight of the substance.

21.7.12.4.3 The SVC/LC₅₀ ratio should be calculated as follows:

$$SVC/LC_{50} = \frac{SVC(mg/L)}{LC_{50}mg/L/4h}$$

21.7.12.5 Application of the SVC/LC₅₀ ratio for assigning carriage requirements

21.7.12.5.1 For the carriage requirements listed in 21.7.12.5.5, the application of the SVC/LC₅₀ ratio method is optional. If the SVC/LC₅₀ ratio method is used in the assignment of these carriage requirements, the vapour pressure at 40°C shall be used when calculating the SVC/LC₅₀ ratio. If the carriage temperature is higher than 40°C, then the SVC/LC₅₀ ratio should be calculated at that temperature.

21.7.12.5.2 The SVC (mg/l) of a substance should be calculated as follows:

$$SVC(mg/L) = \left(\frac{\text{Vapour pressure @ } 40^{\circ} \text{ C (Pa)}}{101300 \text{ (Pa)}} \times 10^6 \right) \times \frac{M_w \left(\frac{g}{mol} \right)}{[26](L/mol) \times 1000}$$

⁸ ATE values can be considered as equivalent to LC₅₀ values. See paragraph 21.7.1.

⁹ If this data is not available, an estimate may be used.

where M_w is the molecular weight of the substance.

21.7.12.5.3 The SVC/LC₅₀ ratio should be calculated as follows:

$$SVC / LC_{50} = \frac{SVC (mg / L)}{LC_{50} mg / L / 4h}$$

21.7.12.5.4 The SVC (mg/L) formula described in 21.7.12.5.2 is standardized for calculations at 40°C. When using the vapour pressure at higher temperatures in the calculations, the formula must be amended accordingly.

21.7.12.5.5 For the following carriage requirements, the SVC/LC₅₀ ratio method, calculated at 40°C or higher, may be used as an alternative to the acute inhalation toxicity criteria given in paragraphs 21.4 and 21.5:

.1 **Column g – Tank vents**

Assignment of controlled venting is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 10 mg/L/4h (C3 = 2, 3, or 4) and SVC/LC₅₀ < 0.2

.2 **Column j – Gauging**

Closed gauging is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4) and SVC/LC₅₀ < 0.2 but restricted gauging is required.

Restricted gauging is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE > 2 - ≤ 10 mg/L/4h (C3 = 2) and SVC/LC₅₀ < 0.2

.3 **Column k – Vapour detection**

Assignment of toxic vapour detection is not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 10 mg/L/4h (C3 = 2, 3, or 4) and SVC/LC₅₀ < 0.2

.4 **Column n – Emergency Equipment**

Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4) and SVC/LC₅₀ < 0.2

.5 **Column o – Special requirements in chapter 15**

15.12.1 and 15.12.2 are not required based on the inhalation hazard only, if:

Inhalation LC₅₀/ATE ≤ 2 mg/L/4h (C3 = 3 or 4) and SVC/LC₅₀ < 0.2

15.12.3 and 15.12.4 are not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2) and $SVC/LC_{50} < 0.2$

15.17 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 0.5$ mg/L/4h (C3 = 4) and $SVC/LC_{50} < 0.2$

15.18 is not required based on the inhalation hazard only if:

Inhalation $LC_{50}/ATE \leq 0.5$ mg/L/4h (C3 = 4) and $SVC/LC_{50} < 0.2$

15.19 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE \leq 2$ mg/L/4h (C3 = 3 or 4) and $SVC/LC_{50} < 0.2$, but
15.19.6 applies

15.19.6 is not required based on the inhalation hazard only, if:

Inhalation $LC_{50}/ATE > 2 - \leq 10$ mg/L/4h (C3 = 2) and $SVC/LC_{50} < 0.2$ "

ANNEX 5

DRAFT AMENDMENTS TO THE BCH CODE

CHAPTER IV SPECIAL REQUIREMENTS

- 1 A new section 4.24 is inserted after existing section 4.23:

"4.24 Hydrogen sulphide (H₂S) detection equipment for bulk liquids

Hydrogen sulphide (H₂S) detection equipment shall be provided on board ships carrying bulk liquids prone to H₂S formation. It should be noted that scavengers and biocides, when used, may not be a 100% effective in controlling the formation of H₂S."

CHAPTER V OPERATIONAL REQUIREMENTS

- 2 Paragraph 5.2.7 is replaced by the following:

"5.2.7 Where *column m** in the table of chapter VI refers to this paragraph, the cargo is subject to the prewash requirements in regulation 13.7.1.4 of Annex II of MARPOL"

CHAPTER VI SUMMARY OF MINIMUM REQUIREMENTS

IBC/BCH Codes cross-references to the requirements

- 3 The following cross-references are added under section "Special requirements (*column o*):

"15.15 4.24
16.2.7 5.2.7"

ANNEX 6

DRAFT AMENDMENTS TO THE LSA CODE

CHAPTER IV SURVIVAL CRAFT

4.4 General requirements for lifeboats

1 Paragraph 4.4.8.1 is replaced by the following:

".1 except for a lifeboat equipped with two independent propulsion systems, where the arrangement consists of two separate engines, shaft lines, fuel tanks, piping systems and any other associated ancillaries, and for a free fall lifeboat, sufficient buoyant oars to make headway in calm seas. Thole pins, crutches or equivalent arrangements shall be provided for each oar provided. Thole pins or crutches shall be attached to the boat by lanyards or chains."

CHAPTER VI LAUNCHING AND EMBARKATION APPLIANCES

6.1 Launching and embarkation appliances

2 Paragraph 6.1.1.3 is replaced by the following:

"6.1.1.3 A launching appliance shall not depend on any means other than gravity or stored mechanical power which is independent of the ship's power supplies to launch the survival craft or rescue boat it serves in the fully loaded and equipped condition and also in the light condition.

On cargo ships equipped with a rescue boat which is not one of the ship's survival craft, having a mass not more than 700 kg in fully equipped condition, with engine, but without the crew, the launching appliance of the boat does not need to be fitted with stored mechanical power. Manual hoisting from the stowed position and turning out to the embarkation position shall be possible by one person. The force on the crank handle shall not exceed 160 N at the maximum crank radius of 350 mm. Means shall be provided for bringing the rescue boat against the ship's side and holding it alongside so that persons can be safely embarked."

ANNEX 7

DRAFT AMENDMENTS TO CHAPTER 15 OF THE FSS CODE

CHAPTER 15 INERT GAS SYSTEMS

2 Engineering specifications

2.2 Requirements for all systems

2.2.3.2 Inert gas lines

1 Paragraph 2.2.3.2.1 is replaced by the following:

"2.2.3.2.1 The inert gas main may be divided into two or more branches downstream of the non-return devices required by paragraph 2.2.3.1."

2 Paragraph 2.2.3.2.6 is replaced by the following:

"2.2.3.2.6 Arrangements shall be provided to enable the inert gas main to be connected to an external supply of inert gas. The arrangements shall consist of a 250 mm nominal pipe size bolted flange, isolated from the inert gas main by a valve and located downstream of the non-return valve. The design of the flange should conform to the appropriate class in the standards adopted for the design of other external connections in the ship's cargo piping system."

2.2.4 Indicators and alarms

3 Paragraph 2.2.4.2 is replaced by the following:

"2.2.4.2 Instrumentation shall be fitted for continuously indicating and permanently recording, when inert gas is being supplied:

- .1 the pressure of the inert gas mains downstream of the non-return devices; and
- .2 the oxygen content of the inert gas."

ANNEX 8

**DRAFT AMENDMENTS TO THE APPENDIX (CERTIFICATES)
TO THE SOLAS CONVENTION**

**APPENDIX
CERTIFICATES**

**RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM E)**

3 Details of navigational systems and equipment

1 Item 8.1. is replaced as follows with the corresponding footnote:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{2 3}	.....

3 Delete as appropriate."

**RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY
(FORM C)**

5 Details of navigational systems and equipment

2 Item 8.1. is replaced as follows with the corresponding footnote:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{2 3}	.....

3 Delete as appropriate."

**RECORD OF EQUIPMENT FOR PASSENGER SHIP SAFETY
(FORM P)**

5 Details of navigational systems and equipment

3 Item 8.1. is replaced as follows:

"

	Item	Actual provision
8.1	Rudder, propeller, thrust, pitch and operational mode indicator ^{3 4}	.....

4 Delete as appropriate."

ANNEX 9

RESOLUTION MSC.455(100)
(adopted on 6 December 2018)

AMENDMENTS TO PART B OF THE 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 ALSO regulation I/1.2.4 of the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (the Convention), regarding the procedure for amendments to part B (recommendatory part) of the Seafarers' Training, Certification and Watchkeeping Code (STCW Code),

RECALLING FURTHER that it, by resolutions MSC.416(97) and MSC.417(97), adopted amendments to the Convention and to part A of the STCW Code, respectively, consequential to the adoption of the International Code for Ships Operating in Polar Waters (Polar Code) by resolutions MSC.385(94) and MEPC.264(68),

HAVING CONSIDERED, at its 100th session, amendments to part B of the STCW Code proposed by the Sub-Committee on Human Element, Training and Watchkeeping, at its fifth session,

- 1 ADOPTS amendments to part B of the STCW Code, the text of which is set out in the annex to the present resolution;
- 2 RECOMMENDS that Parties use the amendments to part B of the STCW Code as recommended guidance for the implementation, application and enforcement of measures to give the Convention full and complete effect in a uniform manner; and
- 3 DETERMINES that said amendments should become effective on 1 January 2019.

ANNEX

**AMENDMENTS TO PART B OF THE SEAFARERS' TRAINING,
CERTIFICATION AND WATCHKEEPING (STCW) CODE**

**CHAPTER V – Guidance regarding special training requirements for personnel on
certain types of ships**

- 1 "Section B-V/g" is renamed as "section B-V/4" and moved after existing section B-V/3.
- 2 The reference to "B-V/g" in the footnotes under sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e and B-V/f is deleted.
- 3 The footnote "Note there are no corresponding regulations in the Convention or sections in part A of the Code for sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, B-V/f and B-V/g." under renamed section B-V/4 is deleted.

ANNEX 10

DRAFT AMENDMENTS TO PARTS A AND A-1 OF THE IGF CODE

PART A

2 GENERAL

2.2 Definitions

1 The following new definition 2.2.42 is introduced after 2.2.41:

"2.2.42 *Ship constructed on or after [date of entry into force]* means:

- .1 for which the building contract is placed on or after *[date of entry into force]*;
- .2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after *[date of entry into force + six months]*; or
- .3 the delivery of which is on or after *[date of entry into force + 48 months]*."

PART A-1

SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

5 SHIP DESIGN AND ARRANGEMENT

5.3 Regulations – General

2 The text defining f_v in paragraph 5.3.4 is amended to read as follows:

" f_v is calculated by use of the formulations for factor v contained in SOLAS regulation II-1/7-2.6.1.1 and reflects the probability that the damage is ~~not~~ extending vertically above the lowermost boundary of the fuel tank. The formulations to be used are:"

6 FUEL CONTAINMENT SYSTEM

6.8 Regulations on loading limit for liquefied gas fuel tanks

3 The following regulation is added after existing 6.8.2:

"6.8.2**bis** For ships constructed on or after *[date of entry into force]*, in cases where the tank insulation and tank location make the probability very small for the tank contents to be heated up due to an external fire, special considerations may be made to allow a higher loading limit than calculated using the reference temperature, but never above 95%. ~~This also applies in cases where a second system for pressure maintenance is installed, (refer to 6.9). However, if the pressure can only be maintained / controlled by fuel consumers, the loading limit as calculated in 6.8.1 shall be used.~~"

9 FUEL SUPPLY TO CONSUMERS

9.5 Regulations for fuel distribution outside of machinery space

4 The following regulations are added after 9.5.2:

"9.5.3 The requirements in 9.5.4 to 9.5.7 shall apply to ships constructed on or after [date of entry into force] in lieu of the requirements in 9.5.1 and 9.5.2.

9.5.4 Where gaseous fuel pipes pass through enclosed spaces in the ship, they shall be protected by a secondary enclosure. This enclosure can be a ventilated duct or a double wall piping system. The duct or double wall piping system shall be mechanically underpressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 shall be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration.

9.5.5 The requirement in 9.5.4 need not be applied for fully welded fuel gas vent pipes led through mechanically ventilated spaces.

9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a fuel preparation room or a tank connection space, the Administration may waive this requirement.

The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

10 POWER GENERATION INCLUDING PROPULSION AND OTHER GAS CONSUMERS

10.3 Regulations for internal combustion engines of piston type

5 New regulation 10.3.1.1**bis** is added after existing 10.3.1.1 as follows:

"10.3.1.1**bis** For ships constructed on or after [date of entry into force], the exhaust system shall be equipped with explosion relief ~~ventilation sufficiently dimensioned to prevent excessive explosion pressures in the event of ignition failure of one cylinder followed by ignition of the unburned gas in the system.~~ systems unless designed to accommodate the worst case overpressure due to ignited gas leaks or justified by the safety concept of the engine. A detailed evaluation of the potential for unburnt gas in the exhaust system is to be undertaken covering the complete system from the cylinders up to the open end. This detailed evaluation shall be reflected in the safety concept of the engine."

11 FIRE SAFETY

11.3 Regulations for fire protection

6 Regulation 11.3.3 is amended as follows:

"11.3.3 The space containing the fuel containment system shall be separated from the machinery spaces of category A or other rooms with high fire risks. The separation shall be done by a cofferdam of at least 900 mm with insulation of A-60 class. When

determining the insulation of the space containing the fuel containment system from other spaces with lower fire risks, the fuel containment system shall be considered as a machinery space of category A, in accordance with SOLAS regulation II-2/9. ~~The boundary between spaces containing fuel containment systems shall be either a cofferdam of at least 900 mm or A-60 class division.~~ For type C tanks, the fuel storage hold space may be considered as a cofferdam.

- 7 The following new regulation 11.3.3*bis* is added after regulation 11.3.3:

11.3.3*bis* Notwithstanding 11.3.3, for ships constructed on or after [*date of entry into force*], for type C tanks, the fuel storage hold space may be considered as a cofferdam provided the type C tank is not located directly above machinery spaces of category A or other rooms with high fire risk. When the fuel storage hold space is considered as a cofferdam, the minimum distance to the A-60 boundary from the outer shell of the type C tank or the boundary of the tank connection space, if any, shall be at least 900 mm."

ANNEX 11

BIENNIAL STATUS REPORTS OF THE SUB-COMMITTEES

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3 (New)	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR				MSC 100/20, paragraphs 10.3 to 10.6, and 17.25
1. Improve implementation	1.30 (New)	Revision of the Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521)	2020	MSC	CCC				MSC 100/20, paragraph 17.16
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW / PPR / SDC / SSE	CCC	In progress		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2; CCC 5/13, section 3

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; CCC 5/13, section 8
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8
OW. Other work	OW 3	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing		CCC 5/13, section 6
OW. Other work	OW 9	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC		Ongoing		CCC 5/13, section 5

Sub-Committee on Carriage of Cargoes and Containers (CCC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	III	CCC	Ongoing		CCC 5/13, section 9
OW. Other work	OW 35	Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service	2020	MSC	CCC		In progress		MSC 96/25 paragraph 23.4; MSC 98/23, annex 38; MSC 100/20 paragraph 17.21; CCC 5/13, section 4
OW. Other work	OW 42	Amendments to the CSS Code with regard to weather-dependent lashing	2019	MSC	CCC		In progress		MSC 98/23, paragraph 20.7; CCC 5/13, section 7

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 100/20, paragraphs 10.3 to 10.6, and 17.25 HTW 5/16, section 3
1. Improve implementation	1.21	Guidance for STCW Code, section B-I/2	2019	MSC	HTW		Extended		MSC 98/23, paragraph 9.2; HTW 5/16, section 5
1. Improve implementation	1.22	Comprehensive review of the 1995 STCW-F Convention	2019	MSC	HTW		Extended		MSC 95/22, paragraph 19.3 and 19.4; MSC 96/25, paragraph 12.3; HTW 5/16, section 6

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.23	Revision of the Guidelines on fatigue	2018	MSC	HTW		Completed		MSC 94/21, paragraph 18.8; MSC 95/22, paragraph 9.18; MSC 98/23, paragraphs 9.8 and 9.11; MSC 100/20, paragraphs 10.7 and 10.8; HTW 5/16, section 8
1. Improve implementation	1.28 (New)	Development of amendments to the <i>Revised guidelines for the development, review and validation of model courses</i> (MSC-MEPC.2/Circ.15/Rev.1)	2020	MSC	HTW				MSC 100/20, paragraphs 17.7 and 17.7

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW / PPR / SDC / SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III / HTW / SDC	SSE	No work requested		MSC 98/23, paragraph 20.36
Notes:	Description amended and HTW was added as associated organ								
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW / SSE	NCSR	No work requested		MSC 98/23, paragraph 20.27

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
5. Enhance global facilitation and security of international trade	5.13 (New)	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW			MSC 100/20, paragraph 17.12
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8; HTW 5/16, section 7
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW / PPR / NCSR	III	No work requested		MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3

Sub-Committee on Human Element, Training and Watchkeeping (HTW)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 14	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW		Completed		MSC 83/28, paragraph 12.2; HTW 5/16, section 4
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2019	MSC	HTW / SSE	SDC	No work requested		MSC 95/22, paragraph 19.22
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2019	MSC	HTW	SSE	No work requested		MSC 89/25, paragraph 22.26; MSC 98/23, annex 38
OW. Other work	OW 36	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2019	MSC	HTW / SDC	SSE	No work requested		MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR				MSC 100/20, paragraphs 10.3 to 10.6, and 17.25
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assembly	MSC / MEPC / LEG / TCC / III	Council	Completed		MEPC 61/24, paragraph 11.14.1; MSC 88/26, paragraph 10.8; C 120/D, paragraphs 7.1 and 7.2
1. Improve implementation	1.5	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III		Completed		MEPC 64/23, paragraph 11.49; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.14	Revised guidance on ballast water sampling and analysis	2019	MEPC	PPR	III	No work requested		MEPC 68/21, paragraphs 7.14 and 17.26; MEPC 70/18, paragraph 4.47; MEPC 71/17, paragraph 4.45
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III / HTW / SDC	SSE	No work requested		MSC 98/23, paragraph 20.36
Notes:	Description amended and HTW was added as associated organ								
5. Enhance global facilitation and security of international trade	5.13 (New)	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW			MSC 100/20, paragraph 17.12

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		No work requested		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC / MEPC	III		Completed		MSC 92/26, paragraph 22.29
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC / MEPC	III		Completed		MSC 96/25, paragraph 23.13; MEPC 69/21, paragraph 19.11

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.7	Consideration and analysis of reports on alleged inadequacy of port reception facilities	Annual	MEPC	III		Completed		MEPC 69/21, paragraph 19.11
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW / PPR / NCSR	III	Ongoing		MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 16	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III		Completed		MEPC 68/21, paragraphs 14.5 and 14.6; FSI 12/22, paragraph 9.4; MSC 79/23, paragraphs 9.19 and 9.20
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	III	CCC	No work requested		
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	No work requested		MSC 98/23, paragraph 11.1
OW. Other work	OW 33	Finalization of a non-mandatory instrument on regulations for non-convention ships	2019	MSC	III		No work requested		MSC 96/25, paragraph 9.4

Sub-Committee on Implementation of IMO Instruments (III)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 49	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2018	MSC / MEPC	III		Completed		MSC 97/22, paragraph 19.7; III 5/15, paragraph 11.15

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR				MSC 100/20, paragraphs 10.3 to 10.6 and 17.25
2. Integrate new and advancing technologies in the regulatory framework	2.1	Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Annual	MSC	NCSR		Completed		MSC 99/22, paragraphs 12.11 to 12.15
2. Integrate new and advancing technologies in the regulatory framework	2.9	Application of the Indian Regional Navigation Satellite System (IRNSS) in the maritime field and development of performance standards for shipborne IRNSS receiver equipment	2019	MSC	NCSR		In progress		MSC 98/23, paragraphs 11.8 and 11.9; MSC 99/22, paragraph 12.7; resolution MSC.449(99)

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW / SSE	NCSR	In progress		MSC 98/23, paragraph 20.27; NCSR 5/23, section 11
2. Integrate new and advancing technologies in the regulatory framework	2.11	Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)	2019	MSC	NCSR		In progress		NCSR 5/23, section 8
2. Integrate new and advancing technologies in the regulatory framework	2.12	Guidelines on standardized modes of operation, S mode	2019	MSC	NCSR		In progress		NCSR 5/23, section 7
2. Integrate new and advancing technologies in the regulatory framework	2.15	Revised Performance Standards for EPIRBs operating on 406 MHz (resolution A.810(19)) to include Cospas-Sarsat MEOSAR and	2019	MSC	NCSR		Extended		NCSR 5/23, section 15

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
		second generation beacons							
2. Integrate new and advancing technologies in the regulatory framework	2.16	Guidelines for the harmonized display of navigation information received via communications equipment	2018	MSC	NCSR		Completed		MSC 99/22, paragraph 12.8; MSC.1/Circ.1593
2. Integrate new and advancing technologies in the regulatory framework	2.20	Revised General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity Testing (BIIT) for navigation equipment	2020	MSC	NCSR		In progress		MSC 95/22, paragraph 19.12.4

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
4. Engage in ocean governance	4.1	Designated Special Areas, Emission Control Areas and PSSAs and associated protective measures	Continuous	MEPC	NCSR		No work requested		
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		No work requested		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								
6. Ensure regulatory effectiveness	6.2	Developments in GMDSS satellite services	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.16 to 12.21; resolutions MSC.450(99) and MSC.451(99)
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8
OW. Other work	OW 1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraph 12.23; MSC.1/Circ.1594

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 4	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.1 to 12.4; COLREG.2/Circ.71; SN.1/Circ.336
OW. Other work	OW 5	Updates to the LRIT system	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.5 and 12.6; MSC.1/Circ.1376/Rev.3; MSC.1/Circ.1259/Rev.8; MSC.1/Circ.1294/Rev.6
OW. Other work	OW 6	Updating of the GMDSS Master Plan and guidelines on MSI (maritime safety information)	Continuous	MSC	NCSR		Ongoing		NCSR 5/23, section 9
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW / PPR / NCSR	III	No work requested		MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3

Sub-Committee on Navigation, Communications and Search and Rescue (NCSR)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 28	Further development of the provision of global maritime SAR services	2019	MSC	NCSR		In progress		NCSR 5/23, section 16
OW. Other work	OW 29	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2019	MSC	NCSR		In progress		NCSR 5/23, section 17
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	In progress		MSC 98/23, paragraph 11.1 NCSR 5/23, section 13
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2019	MSC	SSE / NCSR	SDC	In progress		MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25; NCSR 5/23, section 10

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3 (NEW)	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR	HTW			MSC 100/20, paragraphs 10.3 to 10.6, and 17.25
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW / PPR / SDC / SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2
2. Integrate new and advancing technologies in the regulatory framework	2.4	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2020	MSC	SDC		In progress		MSC 95/22, paragraph 19.25; MSC 96/25, paragraphs 7.10 and 7.12; MSC 97/22, paragraphs 6.22 and 6.23; MSC 99/22, paragraphs 10.17 and 10.18

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.6	Finalization of second generation intact stability criteria	2020	MSC	SDC		In progress		MSC 85/26, paragraphs 12.7 and 23.42; SDC 5/15, section 6
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III / HTW / SDC	SSE	No work requested		MSC 98/23, paragraph 20.36
Notes:	Description amended and HTW was added as associated organ								
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; SDC 5/15, section 9
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39; and annex 21; MSC 100/20, paragraph 10.8
OW. Other work	OW 2	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing		MSC 92/26, paragraph 13.31; SDC 5/15, section 8
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2019	MSC	HTW / SSE	SDC	In progress		MSC 95/22, paragraph 19.22; SDC 5/15, section 10
OW. Other work	OW 32	Amendments to SOLAS regulation II-1/8-1 on the availability of passenger ships' electrical power supply in cases of flooding from side raking damage	2019	MSC	SDC		Completed		MSC 85/26, paragraph 23.35; MSC 99/22, paragraphs 10.6 and 20.13.2

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 36	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2019	MSC	HTW / SDC	SSE	No work requested		MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42
OW. Other work	OW 37	Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships	2019	MSC	SDC	SSE	No work requested		MSC 95/22, paragraphs 19.20 and 19.32; MSC 98/23, annex 38
OW. Other work	OW 38	Guidelines for wing-in-ground craft	2019	MSC	SDC		Completed		MSC 99/22, paragraph 10.21
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	SDC		No work requested		MSC 98/23, paragraphs 10.29, 20.31.1 and 20.31.2, and annex 38; MSC 99/22, paragraphs 7.16 and 20.13.1

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 41	Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity	2020	MSC	SDC		In progress		MSC 96/25, paragraph 23.23; SDC 5/15, section 5
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2019	MSC	SSE / NCSR	SDC	No work requested		MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25
OW. Other work	OW 46	Computerized stability support for the master in case of flooding for existing passenger ships	2018	MSC	SDC		Completed		MSC 94/21, paragraph 18.20; and MSC 99/22, paragraphs 3.12, 3.81.6, 10.7 and 10.8

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.3 (NEW)	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC /SDC / SSE / NCSR				MSC 100/20, paragraphs 10.3 to 10.6, and 17.25
1. Improve implementation	1.20	Uniform implementation of paragraph 6.1.1.3 of the LSA Code	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.28; SSE 5/17, section 5; MSC 100/20, paragraph 9.5
1. Improve implementation	1.27	Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda)	2020	MSC	SSE				MSC 99/22, paragraphs 20.29 and 20.32
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW / PPR /SDC / SSE	CCC	No work requested		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2019	MSC	SSE		In progress		MSC 82/24, paragraph 3.92; MSC 98/23, annex 38; SSE 5/17, section 3
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III / HTW / SDC	SSE	In progress		MSC 98/23, paragraph 20.36; SSE 5/17, section 13
Notes:	Description amended and HTW was added as associated organ								
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW / SSE	NCSR	No work requested		MSC 98/23, paragraph 20.27

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.14	Amendments to regulation 14 of MARPOL Annex VI to require a dedicated sampling point for fuel oil	2019	MEPC	SSE	PPR	No work requested		
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC /SSE/NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12; SSE 5/17, section 12
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								
6. Ensure regulatory effectiveness	6.14	Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability	2019	MSC		SSE			MSC 99/22, paragraphs 20.24 and 20.32

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW			MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8
OW. Other work	OW 27	Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems 2021	2020	MSC	SSE		No work requested		MSC 98/23, paragraph 20.34; SSE 5/17, annex 7
Notes:	MSC 98 agreed to include this output in the provisional agenda for SSE 6								
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2019	MSC	HTW / SSE	SDC	No work requested		MSC 95/22, paragraph 19.22

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2019	MSC	HTW	SSE	In progress		MSC 89/25, paragraph 22.26; MSC 98/23, annex 38; SSE 5/17, section 10
OW. Other work	OW 36	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2019	MSC	HTW / SDC	SSE	In progress		MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42; SSE 5/17, section 7
OW. Other work	OW 37	Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships	2019	MSC	SDC	SSE	In progress		MSC 95/22, paragraphs 19.20 and 19.32; MSC 98/23, annex 38; SSE 5/17, section 11

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 39	Amendments to MSC.1/Circ.1315	2019	MSC	SSE		In progress		MSC 98/23, paragraph 20.37; SSE 5/17, section 9
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2019	MSC	SSE / NCSR	SDC	In progress		MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25; SSE 5/17, section 6

Sub-Committee on Ship Systems and Equipment (SSE)									
Reference to SD, applicable	Output if number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 47	Develop new requirements for ventilation of survival craft	2019	MSC	SSE		In progress		MSC 97/22, paragraph 19.22; SSE 5/17, section 4
OW. Other work	OW 48	Amendments to the FSS Code for CO2 pipelines in under-deck passageways	2018	MSC	SSE		Completed		MSC 96/25, paragraph 23.26; MSC 98/23, annex 38; SSE 5/17, section 8; SSE 5/17, section 8

ANNEX 12

PROVISIONAL AGENDAS OF THE SUB-COMMITTEES

PROVISIONAL AGENDA FOR CCC 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels (2.3)
 - 4 Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service (OW 35)
 - 5 Amendments to the IMSBC Code and supplements (OW 9)
 - 6 Amendments to the IMDG Code and supplements (OW 3)
 - 7 Amendments to the CSS Code with regard to weather-dependent lashing (OW 42)
 - 8 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)
 - 9 Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas (OW 19)
 - 10 Revision of the *Inspection programmes for cargo transport units carrying dangerous goods* (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521) (1.30)*
 - 11 Biennial status report and provisional agenda for CCC 7
 - 12 Election of Chair and Vice-Chair for 2020
 - 13 Any other business
 - 14 Report to the Committees

* Output number to be confirmed by the Council in due course.

PROVISIONAL AGENDA FOR HTW 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Validated model training courses (1.3)
 - 4 Reports on unlawful practices associated with certificates of competency (OW 14)
 - 5 Guidance for STCW Code, section B-I/2 (1.21)
 - 6 Comprehensive review of the 1995 STCW-F Convention (1.22)
 - 7 Role of the human element (6.15)
 - 8 Development of amendments to the *Revised guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15) (1.28)*
 - 9 Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers (5.13)*
 - 10 Biennial status report and provisional agenda for HTW 7
 - 11 Election of Chair and Vice-Chair for 2020
 - 12 Any other business
 - 13 Report to the Maritime Safety Committee

* Output number to be confirmed by the Council in due course.

PROVISIONAL AGENDA FOR III 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Consideration and analysis of reports on alleged inadequacy of port reception facilities (6.7)
 - 4 Lessons learned and safety issues identified from the analysis of marine safety investigation reports (6.4)
 - 5 Measures to harmonize port State control (PSC) activities and procedures worldwide (OW 10)
 - 6 Identified issues relating to the implementation of IMO instruments from the analysis of PSC data (6.5)
 - 7 Analysis of consolidated audit summary reports (1.4)
 - 8 Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC) (OW 16)
 - 9 Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code) (1.5)
 - 10 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)
 - 11 Finalization of a non-mandatory instrument on regulations for non-convention ships (OW 33)
 - 12 Biennial agenda and provisional agenda for III 7
 - 13 Election of Chairman and Vice-Chairman for 2020
 - 14 Any other business
 - 15 Report to the Committees

PROVISIONAL AGENDA FOR NCSR 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Routing measures and mandatory ship reporting systems (OW 4)
 - 4 Updates to the LRIT system (OW 5)
 - 5 Application of the "Indian Regional Navigation Satellite System (IRNSS)" in the maritime field and development of performance standards for shipborne IRNSS receiver equipment (2.9)
 - 6 Revised General requirements for shipborne radio equipment forming part of the GMDSS and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity testing (BIIT) for navigation equipment (2.20)
 - 7 Guidelines on standardized modes of operation, S-mode (2.12)
 - 8 Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs) (2.11)
 - 9 Updating of the GMDSS master plan and guidelines on MSI (maritime safety information) provisions (OW 6)
 - 10 Consequential work related to the new Polar Code (OW 43)
 - 11 Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments (2021) (2.10)
 - 12 Response to matters related to the Radiocommunication ITU R Study Group and ITU World Radiocommunication Conference (2.1)
 - 13 Measures to protect the safety of persons rescued at sea (OW 30)
 - 14 Developments in GMDSS satellite services (6.2)
 - 15 Revised Performance Standards for EPIRBs operating on 406 MHz (resolution A.810(19)) to include Cospas-Sarsat MEOSAR and second generation beacons (2.15)
 - 16 Further development of the provision of global maritime SAR services (OW 28)
 - 17 Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters (OW 29)
 - 18 Amendments to the IAMSAR Manual (OW 1)
 - 19 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)

- 20 Biennial status report and provisional agenda for NCSR 7
- 21 Election of Chair and Vice-Chair for 2020
- 22 Any other business
- 23 Report to the Maritime Safety Committee

PROVISIONAL AGENDA FOR SDC 6

- Opening of the session
- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships (OW 31)
- 4 Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity (OW 41)
- 5 Finalization of second generation intact stability criteria (2.6)
- 6 Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages (2.4)
- 7 Amendments to the 2011 ESP Code (OW 2)
- 8 Safety measures for non-SOLAS ships operating in polar waters (OW 40)
- 9 Unified interpretation to provisions of IMO safety, security, and environment-related conventions (6.1)
- 10 Biennial status report and provisional agenda for SDC 7
- 11 Election of Chair and Vice-Chair for 2020
- 12 Any other business
- 13 Report to the Maritime Safety Committee

PROVISIONAL AGENDA FOR SSE 6

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (2.5)
 - 4 Develop new requirements for ventilation of survival crafts (OW 47)
 - 5 Consequential work related to the new Code for ships operating in polar waters (OW 43)
 - 6 Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships (OW 36)
 - 7 Amendments to MSC.1/Circ.1315 (OW 39)
 - 8 Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems (OW 27)
 - 9 Requirements for onboard lifting appliances and anchor handling winches (OW 34)
 - 10 Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships (OW 37)
 - 11 Development of guidelines for cold ironing of ships and consideration of amendments to SOLAS chapters II-1 and II-2 (2.8)
 - 12 Unified interpretation of provisions of IMO safety, security, and environment-related conventions (6.1)
 - 13 Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability (6.14)
 - 14 Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda) (1.27)
 - 15 Biennial status report and provisional agenda for SSE 7
 - 16 Election of Chair and Vice-Chair for 2020
 - 17 Any other business
 - 18 Report to the Maritime Safety Committee

ANNEX 13

BIENNIAL STATUS REPORT OF THE MARITIME SAFETY COMMITTEE

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.2	Input on identifying emerging needs of developing countries, in particular SIDS and LDCs to be included in the ITCP	Continuous	TCC	MSC / MEPC / FAL / LEG				
1. Improve implementation	1.3	Validated model training courses	Continuous	MSC / MEPC	III / HTW / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 100/20 Paragraphs 10.3 to 10.6, and 17.25
1. Improve implementation	1.4	Analysis of consolidated audit summary reports	Annual	Assemb.	MSC / MEPC / LEG / TCC / III	Council			MEPC 61/24, paragraph 11.14.1; MSC 88/26, paragraph 10.8; C 120/D, paragraphs 7.1 and 7.2

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.5	Non-exhaustive list of obligations under instruments relevant to the IMO Instruments Implementation Code (III Code)	Annual	MSC / MEPC	III				MEPC 64/23, paragraph 11.49; MSC 91/22, paragraph 10.30; MEPC 52/24, paragraph 10.15
1. Improve implementation	1.7	Identify thematic priorities within the area of maritime safety and security, marine environmental protection, facilitation of maritime traffic and maritime legislation	Annual	TCC	MSC / MEPC / FAL / LEG				
1. Improve implementation	1.20	Uniform implementation of paragraph 6.1.1.3 of the LSA Code	2018	MSC	SSE				MSC 96/25, paragraph 23.28; MSC 98/23, paragraph 12.23
1. Improve implementation	1.21	Guidance for STCW Code, section B-I/2	2019	MSC	HTW		Extended		MSC 98/23, paragraph 9.2

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.22	Comprehensive review of the 1995 STCW-F Convention	2019	MSC	HTW		Extended		MSC 95/22, paragraph 19.3 and 19.4; MSC 96/25, paragraph 12.3
1. Improve implementation	1.23	Revision of the Guidelines on fatigue	2018	MSC	HTW		Completed		MSC 94/21, paragraph 18.8; MSC 95/22, paragraph 9.18; MSC 98/23, paragraphs 9.8 and 9.11; MSC 100/20, paragraphs 10.7 and 10.8
1. Improve implementation	1.27	Revision of the Standardized Life-Saving Appliance Evaluation and Test Report Forms (MSC/Circ.980 and addenda)	2020	MSC	SSE				MSC 99/22, paragraphs 20.29 and 20.32

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.28 (New)	Development of amendments to the <i>Revised guidelines for the development, review and validation of model courses</i> (MSC-MEPC.2/Circ.15/Rev.1)	2020	MSC	HTW				MSC 100/20, paragraphs 17.7 and 17.7
1. Improve implementation	1.29 (New)	Development of further measures to enhance the safety of ships relating to the use of fuel oil	2021	MSC					MSC 100/20, paragraphs 8.13 and 8.14
1. Improve implementation	1.30 (New)	Revision of the Inspection programmes for cargo transport units carrying dangerous goods (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521)	2020	MSC	CCC				MSC 100/20, paragraph 17.16

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.1	Response to matters related to the Radiocomm. ITU-R Study Group and ITU World Radiocomm. Conference	Annual	MSC	NCSR		Completed		MSC 99/22, paragraphs 12.11 to 12.15
2. Integrate new and advancing technologies in the regulatory framework	2.3	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW / PPR / SDC / SSE	CCC	In progress		MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; MSC 97/22, paragraph 19.2
2. Integrate new and advancing technologies in the regulatory framework	2.4	Mandatory instrument and/or provisions addressing safety standards for the carriage of more than 12 industrial personnel on board vessels engaged on international voyages	2020	MSC	SDC		In progress		MSC 95/22, paragraph 19.25; MSC 96/25, paragraphs 7.10 and 7.12; MSC 97/22, paragraphs 6.22 and 6.23; MSC 99/22, paragraphs 10.17 and 10.18

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2019	MSC	SSE				MSC 82/24, paragraph 3.92; MSC 98/23, annex 38
2. Integrate new and advancing technologies in the regulatory framework	2.6	Finalization of second generation intact stability criteria	2020	MSC	SDC		In progress		MSC 85/26, paragraphs 12.7 and 23.42
2. Integrate new and advancing technologies in the regulatory framework	2.7	Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)	2020	MSC					MSC 98/23, paragraph 20.2.11
2. Integrate new and advancing technologies in the regulatory framework	2.8	Development of guidelines for cold ironing of ships and of amendments to SOLAS chapters II-1 and II-2, if necessary	2020	MSC	III / HTW / SDC	SSE			MSC 98/23, paragraph 20.36

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
Notes:	Description amended and HTW was added as associated organ								
2. Integrate new and advancing technologies in the regulatory framework	2.9	Application of the Indian Regional Navigation Satellite System (IRNSS) in the maritime field and development of performance standards for shipborne IRNSS receiver equipment	2019	MSC	NCSR		In progress		MSC 98/23, paragraphs 11.8 and 11.9; MSC 99/22, paragraph 12.7 and resolution MSC.449(99)
2. Integrate new and advancing technologies in the regulatory framework	2.10	Revision of SOLAS chapters III and IV for Modernization of the GMDSS, including related and consequential amendments to other existing instruments	2021	MSC	HTW / SSE	NCSR	In progress		MSC 98/23, paragraph 20.27
2. Integrate new and advancing technologies in the regulatory framework	2.11	Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)	2019	MSC	NCSR		In progress		

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.12	Guidelines on standardized modes of operation, S mode	2019	MSC	NCSR		In progress		
2. Integrate new and advancing technologies in the regulatory framework	2.15	Revised Performance Standards for EPIRBs operating on 406 MHz (resolution A.810(19)) to include Cospas-Sarsat MEOSAR and second generation beacons	2019	MSC	NCSR		Extended		
2. Integrate new and advancing technologies in the regulatory framework	2.16	Guidelines for the harmonized display of navigation information received via communications equipment	2018	MSC	NCSR		Completed		MSC 99/22, paragraph 12.8 and MSC.1/Circ.1593

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.17	Consideration of development of goal-based ship construction standards for all ship types	2018	MSC / MEPC					
2. Integrate new and advancing technologies in the regulatory framework	2.20	Revised General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids (resolution A.694(17)) relating to Built-In Integrity Testing (BIIT) for navigation equipment	2020	MSC	NCSR				MSC 95/22, paragraph 19.12.4

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
4. Engage in ocean governance	4.2	Input to the ITCP on emerging issues relating to sustainable development and achievement of the SDGs	2019	TCC	MSC / MEPC / FAL / LEG				
5. Enhance global facilitation and security of international trade	5.2	Guidelines and guidance on the implementation and interpretation of SOLAS chapter XI-2 and the ISPS Code	Annual	MSC					
5. Enhance global facilitation and security of international trade	5.3	Consideration and analysis of reports on piracy and armed robbery against ships	Annual	MSC					
5. Enhance global facilitation and security of international trade	5.4	Revised guidance relating to the prevention of piracy and armed robbery to reflect emerging trends and behaviour patterns	Annual	MSC	LEG				

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
5. Enhance global facilitation and security of international trade	5.13 (New)	Development of amendments to the STCW Convention and Code for the use of electronic certificates and documents of seafarers	2020	MSC	III	HTW			MSC 100/20, paragraph 17.12
6. Ensure regulatory effectiveness	6.1	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 76/23, paragraph 20.3; MSC 78/26, paragraph 22.12
Notes:	A 28 expanded the output to include all proposed unified interpretations to provisions of IMO safety, security, and environment-related conventions								
6. Ensure regulatory effectiveness	6.2	Developments in GMDSS satellite services	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.16 to 12.21; and resolution MSC.450(99) and resolution MSC.451(99)
6. Ensure regulatory effectiveness	6.4	Lessons learned and safety issues identified from the analysis of marine safety investigation reports	Annual	MSC / MEPC	III				MSC 92/26, paragraph 22.29

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Ensure regulatory effectiveness	6.5	Identified issues relating to the implementation of IMO instruments from the analysis of PSC data	Annual	MSC / MEPC	III				MSC 96/25, paragraph 23.13; MEPC 69/21, paragraph 19.11
6. Ensure regulatory effectiveness	6.6	Consideration and analysis of reports and information on persons rescued at sea and stowaways	Annual	MSC / FAL					
6. Ensure regulatory effectiveness	6.14	Amendments to paragraph 4.4.7.6.17 of the LSA Code concerning single fall and hook systems with on-load release capability	2019	MSC		SSE			MSC 99/22, paragraphs 20.24 and 20.32
6. Ensure regulatory effectiveness	6.15	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MSC 89/25, paragraphs 10.10, 10.16 and 22.39, and annex 21; MSC 100/20, paragraph 10.8

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
7. Ensure organizational effectiveness	7.1	Endorsed proposals for the development, maintenance and enhancement of information systems and related guidance (GISIS, websites, etc.)	Continuous	Council	MSC/MSC/MEPC/FAL/LEG/TCC				
7. Ensure organizational effectiveness	7.9	Revised documents on organization and method of work, as appropriate	2019	Council	MSC / MEPC / FAL / LEG / TCC				
OW. Other work	OW 1	Amendments to the IAMSAR Manual	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraph 12.23; and MSC.1/Circ.1594
OW. Other work	OW 2	Amendments to the ESP Code	Continuous	MSC	SDC		Ongoing		MSC 92/26, paragraph 13.31
OW. Other work	OW 3	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing		
OW. Other work	OW 4	Routeing measures and mandatory ship reporting systems	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.1 to 12.4; COLREG.2/Circ.71 and SN.1/Circ.336

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 5	Updates to the LRIT system	Continuous	MSC	NCSR		Ongoing		MSC 99/22, paragraphs 12.5 and 12.6; MSC.1/Circ.1376/Rev.3, MSC.1/Circ.1259/Rev.8, MSC.1/Circ.1294/Rev.6
OW. Other work	OW 6	Updating of the GMDSS Master Plan and guidelines on MSI (maritime safety information)	Continuous	MSC	NCSR		Ongoing		
OW. Other work	OW 7	Verified goal-based new ship construction standards for tankers and bulk carriers	Continuous	MSC					
OW. Other work	OW 8	Review of FSA studies by the FSA Experts' Group	Continuous	MSC					
OW. Other work	OW 9	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC		Ongoing		

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 10	Measures to harmonize port State control (PSC) activities and procedures worldwide	Continuous	MSC / MEPC	HTW / PPR / NCSR	III			MEPC 66/21, paragraph 18.8; MSC 94/21, paragraph 18.2.1; MEPC 68/21, paragraph 17.3
OW. Other work	OW 13	Endorsed proposals for new outputs for the 2018-2019 biennium as accepted by the Committees	Annual	Council	MSC / MEPC / FAL / LEG / TCC				
OW. Other work	OW 14	Reports on unlawful practices associated with certificates of competency	Annual	MSC	HTW		Completed		MSC 83/28, paragraph 12.2
OW. Other work	OW 15	Reports to the MSC on information communicated by STCW Parties	Annual	MSC					

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 16	Updated Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)	Annual	MSC / MEPC	III				MEPC 68/21, paragraphs 14.5 and 14.6; FSI 12/22, paragraph 9.4; MSC 79/23, paragraphs 9.19 and 9.20
OW. Other work	OW 19	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC / MEPC	III	CCC			
OW. Other work	OW 23	Cooperate with the United Nations on matters of mutual interest, as well as provide relevant input/guidance	2019	Assembly	MSC/MEPC /FAL/LEG/ TCC	Council			C 120/D, paragraphs 17(a).1 to 17(a).5

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 24	Cooperate with other international bodies on matters of mutual interest, as well as provide relevant input/guidance	2019	Assembly	MSC / MEPC / FAL / LEG / TCC	Council			C 120/D, paragraphs 17(a).1 to 17(a).5
OW. Other work	OW 27	Amendments to chapter 9 of the FSS Code for fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems 2021	2020	MSC	SSE				MSC 98/23, paragraph 20.34
Notes:	MSC 98 agreed to include this output in the provisional agenda for SSE 6								
OW. Other work	OW 28	Further development of the provision of global maritime SAR services	2019	MSC	NCSR		In progress		

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 29	Guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2019	MSC	NCSR		In progress		
OW. Other work	OW 30	Measures to protect the safety of persons rescued at sea	2019	MSC	III	NCSR	In progress		MSC 98/23, paragraph 11.1
OW. Other work	OW 31	Revised SOLAS regulation II-1/3-8 and associated guidelines (MSC.1/Circ.1175) and new guidelines for safe mooring operations for all ships	2019	MSC	HTW / SSE	SDC	In progress		MSC 95/22, paragraph 19.22

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 32	Amendments to SOLAS regulation II-1/8-1 on the availability of passenger ships' electrical power supply in cases of flooding from side raking damage	2019	MSC	SDC		Completed		MSC 85/26, paragraph 23.35; MSC 93/22, paragraph 6.26.1; MSC 96/25, paragraph 11.9; MSC 98/23, paragraph 10.3; and MSC 99/22, paragraphs 10.6 and 20.13.2.
OW. Other work	OW 33	Finalization of a non-mandatory instrument on regulations for non-convention ships	2019	MSC	III				MSC 96/25, paragraph 9.4
OW. Other work	OW 34	Requirements for onboard lifting appliances and anchor handling winches	2019	MSC	HTW	SSE			MSC 89/25, paragraph 22.26; MSC 98/23, annex 38

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 35	Amendments to the IGC and IGF Codes to include high manganese austenitic steel and related guidance for approving alternative metallic material for cryogenic service	2020	MSC	CCC				MSC 96/25, paragraph 23.4; MSC 98/23, annex 38; MSC 100/20, paragraph 17.21
OW. Other work	OW 36	Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships	2019	MSC	HTW / SDC	SSE			MSC 97/22, paragraph 19.19; MSC 98/23, paragraph 12.42
OW. Other work	OW 37	Revised SOLAS regulations II-1/13 and II-1/13-1 and other related regulations for new ships	2019	MSC	SDC	SSE			MSC 95/22, paragraphs 19.20 and 19.32; MSC 98/23, annex 38

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 38	Guidelines for wing-in-ground craft	2019	MSC	SDC		Completed		MSC 88/26, paragraph 23.30; MSC 99/22, paragraph 10.21
OW. Other work	OW 39	Amendments to MSC.1/Circ.1315	2019	MSC	SSE				MSC 98/23, paragraph 20.37
OW. Other work	OW 40	Safety measures for non-SOLAS ships operating in polar waters	2021	MSC	SDC		In progress		MSC 98/23, paragraphs 10.29, 20.31.1 and 20.31.2, and annex 38; MSC 99/22, paragraphs 7.16 and 20.13.1
OW. Other work	OW 41	Review SOLAS chapter II-1, parts B-2 to B-4, to ensure consistency with parts B and B-1 with regard to watertight integrity	2020	MSC	SDC		In progress		MSC 96/25, paragraph 23.23
OW. Other work	OW 42	Amendments to the CSS Code with regard to weather-dependent lashing	2019	MSC	CCC				MSC 98/23, paragraph 20.7

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 43	Consequential work related to the new International Code for Ships Operating in Polar Waters	2019	MSC	SSE / NCSR	SDC	In progress		MSC 93/22, paragraphs 10.44, 10.50 and 20.12; MSC 96/25, paragraph 3.77; MSC 97/22, paragraphs 8.32 and 19.25
OW. Other work	OW 44	IMO's contribution to addressing unsafe mixed migration by sea	2019	MSC / FAL / LEG					FAL 41/17, paragraph 7.15; MSC 98/23, paragraph 16.14
OW. Other work	OW 46	Computerized stability support for the master in case of flooding for existing passenger ships	2018	MSC	SDC		Completed		MSC 94/21, paragraph 18.20; and MSC 99/22, paragraphs 3.12, 3.81.6, 10.7 and 10.8
OW. Other work	OW 47	Develop new requirements for ventilation of survival craft	2019	MSC	SSE				MSC 97/22, paragraph 19.22
OW. Other work	OW 48	Amendments to the FSS Code for CO ₂ pipelines in under-deck passageways	2018	MSC	SSE				MSC 96/25, paragraph 23.26; MSC 98/23, annex 38; SSE 5/17, section 8

Maritime Safety Committee (MSC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
OW. Other work	OW 49	Review the Model Agreement for the authorization of recognized organizations acting on behalf of the Administration	2018	MSC / MEPC	III				MSC 97/22, paragraph 19.7

ANNEX 14

POST-BIENNIAL AGENDA OF THE MARITIME SAFETY COMMITTEE

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post- biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
161	2018-2019	1	Revision of the Guidelines on places of refuge for ships in need of assistance (resolution A.949(23))	MSC	NCSR		2	MSC 100/20, paragraph 17.1
145	2016-2017	2	Amendments to the IMDG Code related to portable tanks with shells made of Fibre Reinforced Plastics (FRP) for multimodal transportation of dangerous goods	MSC	CCC		2	MSC 98/23, paragraph 20.11

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
150	2016-2017	2	Revision of SOLAS chapter III and the LSA Code to remove gaps, inconsistencies and ambiguities based on the safety objectives, functional requirements and expected performance for SOLAS chapter III, taking into account the Guidelines for development and application of IMO goal-based standards safety level approach including possible relocation of measures related to the various sequences of evacuation and rescue currently addressed in various chapters of SOLAS to avoid possible overlaps and inconsistencies	MSC	SSE		5	MSC 98/23, paragraph 20.41
152	2016-2017	2	Guidelines for use of Fibre Reinforced Plastics (FRP) within ship structures	MSC	SDC		2	MSC 98/23, paragraph 10.22

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
160	2018-2019	2	Recognition of the Japanese regional navigation satellite system Quasi-Zenith Satellite System (QZSS) and development of performance standards for shipborne satellite navigation system receiver equipment	MSC	NCSR		2	MSC 99/22, paragraph 20.11
156	2018-2019	6	Development of amendments to the LSA Code to revise the lowering speed of survival craft and rescue boats for cargo ships	MSC	SSE		2	MSC 99/22, paragraph 20.15
157	2018-2019	6	Revision of the Code of safety for diving systems (resolution A.831(19)) and the Guidelines and specifications for hyperbaric evacuation systems (resolution A.692(17))	MSC	SSE		2	MSC 99/22, paragraph 20.26

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
158	2018-2019	6	Amendments to SOLAS chapter III and chapter IV of the LSA Code to require the carriage of self-righting or canopied reversible liferafts for new ships	MSC	SSE		2	MSC 99/22, paragraphs 20.22 and 20.23
159	2018-2019	6	Revision of the Guidelines for Vessel Traffic Services (resolution A.857(20))	MSC	NCSR		1	MSC 99/22, paragraph 20.9
164	2018-2019	6	Revision of ECDIS Guidance for good practice (MSC.1/Circ.1503/Rev.1)	MSC	III	NCSR	2	MSC 100/20, paragraph 17.9
7	2012-2013	OW	Mandatory application of the Performance standard for protective coatings for void spaces on bulk carriers and oil tankers	MSC	SDC		2	MSC 76/23, paragraphs 20.41.2 and 20.48; DE 50/27, section 4
8	2012-2013	OW	Performance standard for protective coatings for void spaces on all types of ships	MSC	SDC		2	MSC 76/23, paragraphs 20.41.2 and 20.48

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post-biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
9	2012-2013	OW	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	SSE		1	MSC 86/26, paragraph 23.39
162	2018-2019	OW	Development of amendments to SOLAS chapter II-1 to include requirements for water level detectors on non-bulk carrier cargo ships with multiple cargo holds	MSC	SSE	SDC	2	MSC 100/20, paragraph 17.3
163	2018-2019	OW	Guidance on the training on and operation of Emergency Personal Radio Devices in multiple casualty situations	MSC	NCSR		1	MSC 100/20, paragraph 17.5
32	2012-2013	OW	Recommendations related to navigational sonar on crude oil tankers	MSC	SDC		1	MSC 91/22, paragraph 19.23
42	2012-2013	OW	Review of the 2009 Code on Alerts and Indicators	MSC	NCSR	SSE	2	MSC 89/25, paragraph 22.25

Maritime Safety Committee (MSC)								
Number	Biennium (when the output was placed on the post- biennial agenda)	Reference to strategic direction, if applicable	Description	Parent organ(s)	Associated organs(s)	Coordinating organ(s)	Timescale (sessions)	References
65	2012-2013	OW	Application of amendments to SOLAS and related codes and guidelines	MSC			2	MSC 91/22, paragraphs 3.16 to 3.35
90	2014-2015	OW	Amendments to the LSA Code for thermal performance of immersion suits	MSC	SSE		2	MSC 92/26, paragraph 13.34

ANNEX 15

SUBSTANTIVE ITEMS FOR INCLUSION IN THE AGENDAS FOR MSC 101 AND MSC 102

101st session of the Committee (5 to 14 June 2019)

Decisions of other IMO bodies

Consideration and adoption of amendments to mandatory instruments

Measures to enhance maritime security

Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)

Goal-based new ship construction standards

Safety measures for non-SOLAS ships operating in polar waters

Development of further measures to enhance the safety of ships relating to the use of fuel oil

Carriage of cargoes and containers (report of the fifth session of the Sub-Committee)

Implementation of IMO instruments (report of the fifth session of the Sub-Committee)

Navigation, communications and search and rescue (report of the sixth session of the Sub-Committee)

Ship design and construction (report of the sixth session of the Sub-Committee)

Pollution prevention and response (matters emanating from the sixth session of the Sub-Committee)

Ship systems and equipment (report of the sixth session of the Sub-Committee)

Implementation of the STCW Convention

Capacity-building for the implementation of new measures

Formal safety assessment

Piracy and armed robbery against ships

Unsafe mixed migration by sea

Application of the Committee's method of work

Work programme

Election of Chair and Vice-Chair for 2020

Any other business

102nd session of the Committee (May 2020)

Decisions of other IMO bodies

Consideration and adoption of amendments to mandatory instruments

Measures to enhance maritime security

Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)

Goal-based new ship construction standards

[Safety measures for non-SOLAS ships operating in polar waters]

Development of further measures to enhance the safety of ships relating to the use of fuel oil

Human element, training and watchkeeping (report of the sixth session of the Sub-Committee)

Implementation of IMO instruments (report of the sixth session of the Sub-Committee)

Carriage of cargoes and containers (report of the sixth session of the Sub-Committee)

Navigation, communications and search and rescue (report of the seventh session of the Sub-Committee)

Ship design and construction (report of the seventh session of the Sub-Committee)

[Pollution prevention and response (matters emanating from the seventh session of the Sub-Committee)]

Capacity-building for the implementation of new measures

Piracy and armed robbery against ships

[Unsafe mixed migration by sea]

Application of the Committee's method of work

Work programme

Any other business

ANNEX 16

STATEMENTS BY DELEGATIONS AND OBSERVERS*

AGENDA ITEM 1

Statement by the delegation of Tanzania

"On 20th September 2018, the United Republic of Tanzania suffered a fatal **MV Nyerere** passenger ferry accident in Lake Victoria inland waters at Ukara, Island. About 228 people perished in the tragic accident with only 41 survivors.

In his condolence message to the people and the Government of the United Republic of Tanzania, the Secretary General of the International Maritime Organization recalled another tragic accident in Lake Victoria involving **MV Bukoba** passenger ferry in 1996, and the expert assistance in the inquiry of the cause of accident. The report of the inquiry led to, inter alia, the establishment of the Maritime Administration Tanzania and The Lake Victoria Act, 2007.

The Government of the United Republic of Tanzania would like to express its appreciation of the Secretary General's deepest condolence to the Government and the victims of the **MV Nyerere** ferry accident who lost their loved ones.

IMO's readiness to offer any technical assistance that may be needed by the Government of the United Republic of Tanzania is yet another testament of its commitment to safety of human life in water bodies. The United Republic of Tanzania is also pleased to have received from the IMO Circular Letter No.3872/Add.1 dated 10 August 2018 with the objective of raising public awareness on ferry safety by means of a video. The Government is of the view that the video, together with other measures that are being taken, will help sensitize the people to take necessary precautions when travelling aboard ferries. The United Republic of Tanzania has observed gaps in its Ferry Safety Regulations and it is working to address the same and put in place corrective action to eliminate re-occurrence of similar tragedies. The full report of the measures underway will be uploaded to the GISIS as soon as it is ready."

Statement by the delegation of Ukraine

"The delegation of Ukraine wishes to take the floor to express its strong protest to the Russian Federation in connection with the recent armed attack and capture of the Ukrainian Navy ships **Berdyansk**, **Nikopol** and the tugboat **Yani Kapu**, as well as the wounding and capturing of 24 Ukrainian servicemen.

As we informed the Secretary-General last Monday, when three of Ukraine's naval vessels were in transit from one Ukrainian port in the Black Sea to another Ukrainian port in the Azov Sea on route, where they must enjoy full freedom of navigation, they were attacked, fired upon and captured by the Russian naval vessels.

We strongly condemn this unprovoked act of armed aggression by the Russian Federation. New facts relating to this act of aggression emerge which make very clear that at the time of the armed attack the Ukrainian vessels were bound back to the port of departure, they were in international waters, they did not respond to the use of different types of weapons by the attackers whereas the Russian attackers targeted their weapons not merely to disable the

* Statements have been included in this annex in the order in which they are listed in the report, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

Ukrainian vessels, but to kill the crews on board. This is convincingly proved by the impact area on the **Berdyansk** boat of higher caliber shells fired by the Russian naval vessels. Many sailors were very seriously injured and it was luck that no one died.

For the better understanding of the situation, I would like to present the main facts of what happened during those days.

First of all, in accordance with the United Nations Convention on the Law of the Sea and Article 2 of the Treaty between Ukraine and the Russian Federation on Cooperation in the Use of the Azov Sea and the Kerch Strait, Ukrainian Navy enjoys full freedom of navigation in the Kerch Strait and the Sea of Azov and, therefore, can pass through the Kerch Strait at any time. On 23 November, a Ukrainian Navy boat group (small armoured boats **Berdyansk** and **Nikopol** and a tugboat **Yani Kapu**) started a planned transfer from the port of Odesa (in the Black Sea) to the port of Mariupol (in the Azov Sea).

The route and procedure of this passage were the same as in September this year, when two Ukrainian naval vessels **Donetsk** and **Korets** sailed from Odesa to Mariupol.

On 24 November, during the naval march the commander of the Ukrainian naval group received a notice from the Russian authorities concerning the closure of navigation in the Kerch Strait area. However, the International Centre for Navigation Control (NAVAREA III Coordinator), located in Spain, did not confirm this notification. It means that the Russian Federation has declared suspension for the innocent passage of the foreign warships and other state vessels through the Kerch Strait actually ex post facto. Moreover, the Russian Federation has never provided the required information to Ukraine in a proper manner, as prescribed by SOLAS Regulation V/4 and section 3.6 of the Joint IMO/IHO/WMO Manual on Maritime Safety Information, for further promulgation via the Berdiansk NAVTEX station of Ukraine into the Sea of Azov and the Kerch Strait.

On 25 November, the Ukrainian commander requested twice the Russian maritime control services the passage through Kerch Strait. He did not receive the answer. Later the Russian maritime control officer directed the Ukrainian Navy boat group to the so-called area of waiting. It was stated that Ukrainian vessels would be soon informed on the Kerch Strait passage procedure. Approximately at 8:30-9:00am the same day a Russian coastguard ship made a ram attack against a tugboat **Yani Kapu** and damaged it. The video of this attack clearly shows that the Ukrainian boat was trying to avoid the collision, while the Russian ship was deliberately carrying out the attack. After the ramming the Russian vessels blocked the other two Ukrainian vessels from rendering assistance to a damaged vessel. All this time the Russian vessels were trying to provoke Ukrainian seamen to open fire. At 1:22pm, two Russian K-52 "Alligator" attack helicopters approached the Ukrainian cutters at their anchorage spot at the height of 50 m. They openly demonstrated their missile armaments and the laser aiming device. After completing the dangerous manoeuvring, the helicopters departed towards the Crimean peninsula. From 1:40pm Russia has physically blocked the passage beneath the so-called "Kerch bridge" having located there a tanker and later a cargo ship. After 7pm due to the impossibility to pass the Strait, the Ukrainian Navy ships headed back to exit a Kerch Strait. I repeat, they headed back, away from the Strait and towards the high seas. They were immediately followed by a group of about ten Coast Guard and Russian Black Sea fleet vessels. There are audio recordings of communications among the Russian vessel commanders regarding the orders on how to proceed. These recordings clearly demonstrate that the Russian military vessels were given orders to attack the Ukrainian vessels after the latter started to withdraw from the area. Approximately at 8:30pm the Russian side carried out the "shoot to kill" order. The vessels "Berdyansk" and "Nikopol" were damaged. After that Ukrainian vessels were forced to stop and they were seized by the Russian FSB Special

Forces. Ukrainian military suffered casualties: 6 wounded, 2 of them gravely, 1 in critical condition.

I would like to underline once again that at the time of the firing and detention the Ukrainian warships were in international waters. According to Article 95 of the UNCLOS warships on the high seas have complete immunity from the jurisdiction of any State other than the flag State. Throughout all these events, the Ukrainian side acted strictly in line with international law and the existing bilateral agreement with the Russian Federation.

Ukraine's right to cross the Kerch-Yenikale canal is guaranteed by para 1 of Article 2 of the Treaty between Ukraine and Russia on Cooperation and Use of the Sea of Azov and the Kerch Strait from 2003. The Treaty clearly provides for the freedom of navigation for both civil and military vessels of Ukraine and Russia in the Sea of Azov and the Kerch Strait. Secondly, the Russian Federation was duly and well in advance informed about passing of the Ukrainian Navy's group through the Kerch Strait. Thirdly, the Ukrainian Navy group strictly followed the orders of the traffic control service. As you can see there were no provocations whatsoever from Ukraine's part.

Nevertheless, the Russian Federation opted to purposefully block the passage of the Ukrainian ships, thus violating the freedom of navigation guaranteed by the Ukraine-Russia Cooperation Agreement in the Sea of Azov and the Kerch Strait. Moreover, Russia committed an act of open military aggression against Ukraine by targeting, firing on and capturing three military vessels.

I would like to remind everyone that Article 3 of the General Assembly Resolution 29/3314 of 14 December 1974 qualifies as an act of aggression: *An attack by the armed forces of a State on the land, sea or air forces, or marine and air fleets of another State*. Russia's recent belligerent acts constitute yet another violation of international law, including the UN Charter, the United Nations Convention on the Law of the Sea, the Budapest Memorandum of 1994, as well as existing bilateral agreements. This is a conscious provocation aimed at aggravation of the security situation in the region with the aim to establish its full control over the Sea of Azov and the Kerch Strait. Russia has *de facto* expanded its military aggression against Ukraine to the sea. The restraint reaction of Ukraine clearly demonstrates that we are committed to solve the current situation by peaceful means and in full compliance with international law and existing bilateral obligations.

On 27 November Ukraine took steps to alert the international tribunal that is considering Russia's violations of the UNCLOS in the Black Sea, Sea of Azov, and Kerch Strait, of recent actions by Russia that have significantly aggravated the parties' dispute. In a letter submitted to the tribunal, Ukraine described Russia's ongoing pattern of harassment against Ukrainian and international vessels seeking to transit the Kerch Strait and navigate to Mariupol, Berdyansk, and other Ukrainian ports.

Russia's latest actions, including firing and seizure of Ukrainian naval vessels, mark a serious escalation of a months'-long pattern, in which vessels flagged both to Ukraine and to third states have repeatedly faced obstacles to navigation, including extended stops that have caused significant economic losses. Only vessels heading to Ukrainian ports have been affected by such stops; vessels bound for Russian ports in the Sea of Azov have not reported similar interference.

In view of above, Ukraine demands the Russian side to release the captured vessels, their crew and equipment unconditionally and without delay. Before that happens, we categorically demand the Russian Federation to ensure in full all applicable rights of the captured Ukrainian servicemen as prescribed by 1949 Geneva Convention on treatment of prisoners of war.

Last but not least. Russia's aggressive actions on 25 November showed Russia's readiness for blockade of navigation and access to the Ukrainian sea ports. As of yesterday evening, the movement of above 30 commercial ships was blocked by Russia which allowed shipping only to the Russian ports in the Azov Sea. Therefore, Ukraine condemns the excessive stopping and inspection of commercial vessels, including both Ukrainian ships and those with flags of third-party states. Ukraine expects Russia to ensure unhindered and free passage through the Kerch strait to Ukrainian ports in the Azov Sea, in accordance with international law."

Statement by the delegation of the Russian Federation (Part 1)

"Инцидент 25 ноября 2018 г. в Керченском проливе

Инцидент, произошедший 25 ноября 2018 г. с участием военных кораблей ВМС Украины в территориальном море Российской Федерации в Черном море, не имеет отношения ни к кругу ведения КБМ, ни к компетенции ИМО в целом. Украинская сторона в очередной раз злоупотребляет площадкой ИМО, чтобы привлечь внимание к вопросам, не имеющим отношения к целям и задачам ИМО.

Однако для того, чтобы после выступления Украины у собравшихся здесь делегатов не сложилось ложного представления об инциденте 25 ноября с.г., хотели бы воспользоваться предоставленным словом и рассказать о том, что на самом деле произошло в тот день.

25 ноября три корабля ВМС Украины незаконно пересекли российскую государственную границу, взяли курс на Керченский пролив, не реагировали на законные требования кораблей и катеров погранслужбы ФСБ России и Черноморского флота России, проводили опасное маневрирование, создавая угрозу для нормального движения судов по акватории. Эти действия были совершены в нарушение Устава ООН, норм международного права, включая ст. 19 и 21 Конвенции ООН по морскому праву 1982 г., определяющих право прибрежного государства на обеспечение безопасности в морском пространстве, а также правил мирного прохода в территориальных водах Российской Федерации в Черном море. Расцениваем такие шаги как нарушение суверенитета России.

Противоправные действия вынудили российских пограничников применить силу. Благодаря их сдержанности и высокому профессионализму удалось избежать жертв. Троице пострадавшим в результате инцидента украинским военнослужащим оказана необходимая медицинская помощь, угрозы для их жизни нет. Ответственность за этот инцидент лежит на тех, кто отдал экипажам преступный приказ. Задержанные корабли-нарушители находятся в российском порту. Возбуждено уголовное дело. Очевидно, что инцидент 25 ноября в Черном море это – тщательно продуманная и спланированная провокация. Все это направлено на искусственное обострение российско-украинских противоречий, создание новых предлогов для введения новых санкций против России. До этой провокации никаких проблем с проходом через Керченский пролив не возникало, в том числе для военных кораблей. Так, в сентябре этого года корабли ВМС Украины беспрепятственно прошли из Одессы через Керченский пролив в Бердянск. В установленном порядке они направили уведомления нашей пограничной службе, им был предоставлен лоцман, что является обязательным условием движения через Керченский пролив. Иными словами порядок прохождения Керченского пролива украинцам хорошо известен и до сих пор ими соблюдался.

В заключение хотел бы подчеркнуть, что в настоящее время судоходство в Керченском проливе полностью восстановлено и функционирует в нормальном режиме.

Проверки судов в Азово-Керченской акватории

Решительно отвергаем любые обвинения в свой адрес относительно незаконных действий в Азовском море и Керченском проливе.

Азовское море – внутренние воды России и Украины, где свободой судоходства пользуются только российские и украинские суда. Керченский пролив никогда не являлся и не является международным по смыслу Конвенции ООН по морскому праву 1982 г., и к нему не применимы требования о праве транзитного или мирного прохода для иностранных судов, которые обязательны в отношении международных проливов. Проводимые там мероприятия соответствуют международному праву, направлены на обеспечение национальной безопасности и соразмерны угрозам, исходящим от экстремистов, в том числе украинских, в адрес России.

Осуществляемые Береговой охраной Пограничной службы ФСБ России проверки судов в Азово-Керченской акватории обоснованы и правомерны. Увеличение их числа с апреля 2018 г. вызвано усилением мер безопасности в Керченском проливе в связи с вводом в эксплуатацию первой очереди Крымского моста. Действия российских пограничников не носят дискриминационного характера. 48% судов (720 из 1492), осмотренных в апреле-октябре 2018 г., проследовали в российские порты или из них. Вопреки заявлениям Украины, суда под российским флагом также инспектируются. Подавляющее число проверок (93%) осуществляется в местах якорных стоянок на входе в Керченский пролив со стороны Черного или Азовского морей в момент формирования караванов для проводки судов по Керчь-Еникальскому каналу (КЕК). При этом сами осмотры, как правило, не превышают трех часов. Временные потери часто связаны с особым порядком плавания по КЕК, обусловленным его специфическими габаритами, сложными гидрометеорологическими и навигационными условиями. В самом Азовском море суда останавливаются для осмотра относительно редко и только при наличии веских оснований.

Крымский мост

Фарватерный участок Крымского моста спроектирован так, что обеспечивает беспрепятственный проход всех судов, формирующих судооборот, исторически сложившийся в портах Азово-Черноморского бассейна с учётом гидрологии Керченского пролива. В связи с тем, что Керченский пролив является мелководным, в нем проложен канал длиной 24 км. Глубина этого канала определяет максимально возможную осадку судов, которые могут пройти через пролив – это 8 метров. Этот показатель был установлен в 1970 г. после реконструкции канала. Усиление различных служб обеспечения безопасности мореплавания из-за ввода в строй Крымского моста позволило ослабить ограничения для судов, которые действовали до сих пор. Согласно обязательным постановлениям, в морском порту Керчь по каналу допускаются суда длиной до 252 метров (до 2014 года — до 215 метров). В этом году интенсивность судоходства через пролив даже выросла на 12% по сравнению с 2017-м до 16,7 тысячи судов. "

"Выступление делегации Российской Федерации по инциденту в Керченском проливе 25 ноября 2018 года, в ответ на заявление делегации Украины.

Наше выступление в ответ на заявление делегации Украины мы бы хотели разделить на две части.

1. Инцидент 25 ноября 2018 г.

Инцидент, произошедший 25 ноября 2018 г. с участием военных кораблей ВМС Украины в территориальном море Российской Федерации в Черном море, не имеет отношения ни к кругу ведения КБМ, ни к компетенции ИМО в целом. Украинская сторона в очередной раз злоупотребляет площадкой ИМО, чтобы привлечь внимание к вопросам, не имеющим отношения к целям и задачам ИМО.

Однако для того, чтобы после выступления Украины у собравшихся здесь делегатов не сложилось ложного представления об инциденте 25 ноября с.г., хотели бы воспользоваться предоставленным словом и рассказать о том, что на самом деле произошло в тот день. 25 ноября три корабля ВМС Украины незаконно пересекли российскую государственную границу, взяли курс на Керченский пролив, не реагировали на законные требования кораблей и катеров погранслужбы ФСБ России и Черноморского флота России, проводили опасное маневрирование, создавая угрозу для нормального движения судов по акватории. Эти действия были совершены в нарушение Устава ООН, норм международного права, включая ст. 19 и 21 Конвенции ООН по морскому праву 1982 г., определяющих право прибрежного государства на обеспечение безопасности в морском пространстве, а также правил мирного прохода в территориальных водах Российской Федерации в Черном море. Расцениваем такие шаги как нарушение суверенитета России.

Противоправные действия вынудили российских пограничников применить силу. Благодаря их сдержанности и высокому профессионализму удалось избежать жертв. Троиим пострадавшим в результате инцидента украинским военнослужащим оказана необходимая медицинская помощь, угрозы для их жизни нет. Ответственность за этот инцидент лежит на тех, кто отдал экипажам преступный приказ.

Задержанные корабли-нарушители находятся в российском порту. Возбуждено уголовное дело. Очевидно, что инцидент 25 ноября в Черном море это – тщательно продуманная и спланированная провокация. Все это направлено на искусственное обострение российско-украинских противоречий, создание новых предлогов для введения новых санкций против России. Кроме того, хотелось бы подчеркнуть одну достаточно важную деталь - украинская сторона нарушила нашу границу в том месте, которое еще до 2014 года было российской территорией. Украинцы при этом отказались от лоцмана и вероломно шли в Керченский пролив с юга. То есть налицо грубейшая провокация. Другой классификации данного события невозможно даже представить.

До этой провокации никаких проблем с проходом через Керченский пролив не возникало, в том числе для военных кораблей. Так, в сентябре этого года корабли ВМС Украины беспрепятственно прошли из Одессы через Керченский пролив в Бердянск. В установленном порядке они направили уведомления нашей пограничной службе, им был предоставлен лоцман, что является обязательным условием движения через Керченский пролив. Иными словами порядок прохождения Керченского пролива украинцам хорошо известен и до сих пор ими соблюдался. При этом, хочу обратить внимание, что речь не идет об ограничениях свободы судоходства, а о соблюдении соответствующего порядка прохода судов, в соответствии с которым уведомление о проходе должно направляться не менее, чем за 48 часов. Подобный срок обусловлен особым порядком плавания по КЕК (Керчь-Еникальскому каналу), связанным со специфическими габаритами канала, сложными гидрометеорологическими и навигационными условиями.

Хотел бы здесь подчеркнуть, что в настоящее время судоходство в Керченском проливе полностью восстановлено и функционирует в нормальном режиме.

2. Проверки судов в Азово-Керченской акватории

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Азовское море – внутренние воды России и Украины, где свободой судоходства пользуются только российские и украинские суда. Керченский пролив никогда не являлся и не является международным по смыслу Конвенции ООН по морскому праву 1982 г., и к нему не применимы требования о праве транзитного или мирного прохода для иностранных судов, которые обязательны в отношении международных проливов. Проводимые там мероприятия соответствуют международному праву, направлены на обеспечение национальной безопасности и соразмерны угрозам, исходящим от экстремистов, в том числе украинских, в адрес России.

Осуществляемые Береговой охраной Пограничной службы ФСБ России проверки судов в Азово-Керченской акватории обоснованы и правомерны. Увеличение их числа с апреля 2018 г. вызвано усилением мер безопасности в Керченском проливе в связи с вводом в эксплуатацию первой очереди Крымского моста. Действия российских пограничников не носят дискриминационного характера. 48% судов (720 из 1492), осмотренных в апреле-октябре 2018 г., проследовали в российские порты или из них. Вопреки заявлениям Украины, суда под российским флагом также инспектируются.

Подавляющее число проверок (93%) осуществляется в местах якорных стоянок на входе в Керченский пролив со стороны Черного или Азовского морей в момент формирования караванов для проводки судов по Керчь-Еникальскому каналу (КЕК). При этом сами осмотры, как правило, не превышают трех часов. Временные потери часто связаны с особым порядком плавания по КЕК, как уже было сказано. В самом Азовском море суда останавливаются для осмотра относительно редко и только при наличии веских оснований. В заключении еще раз обращаю внимание всех присутствующих, что судоходство в Керченском проливе в настоящее время полностью восстановлено и функционирует в нормальном режиме."

Statement by the delegation of the Russian Federation (Part 2)

"We have divided our statement in response of the statement by the delegation of Ukraine into two parts.

1. Incident on the 25th of November 2018

The incident occurred on the 25th of November 2018 in the territorial sea of the Russian Federation with the involvement of the Ukrainian navy ships neither relates to the scope of the Maritime Safety Committee nor to the mandate of the IMO as a whole. Ukrainian side repeatedly misuses the platform of the IMO to draw attention to matters that do not relate to the goals and tasks of the IMO.

However, in order that delegates do not get false understanding of the incident of the 25th of November following the statement by Ukraine, we would like to take the opportunity to clarify what in fact happened on that day.

On the 25th of November three ships of Ukrainian Navy illegally crossed the border line of the Russian Federation and set a course towards the Kerch Strait. The ships did not respond to the legal demands by the ships of the Russian Coast Guard and the Black Sea Navy of the Russian Federation, carried out dangerous maneuvering thus endangering normal vessel traffic in the water area. Such actions were conducted in violation of the UN Charter, provisions of international law, including Articles 19 and 21 of the UNCLOS, which defines the rights of

the coastal state to ensure maritime safety in the water area, as well as the rules for innocent passage in the territorial sea of the Russian Federation in the Black Sea. We consider such actions as a violation of the sovereignty of the Russian Federation.

Such illegal actions compelled the Russian Coast Guard to use force. Thanks to the Coast Guard's restraint and high professionalism it was possible to avoid casualties. Three Ukrainian military men wounded during the incident were provided with the required medical assistance, their lives are not in any danger. The responsibility for the incident lies with those who gave such criminal order to the crews of Ukrainian naval ships. The ships were detained and at the moment are in the Russian port. A criminal case was launched. Clearly, the incident taken place in the Black sea is a well-thought-out provocation aimed at artificial deepening of contradictions between Russia and Ukraine as well as a pretext for stepping up sanctions against Russia.

Besides, we would like to emphasize one important point – the Ukrainian ships crossed the border of the Russian Federation in the area, which had been the Russian territory even before 2014. Without pilot assistance, which is mandatory in that region, they treacherously proceeded towards the Kerch Strait from the south. In other words we faced a grave provocation, which cannot be classified otherwise.

Until the deliberate provocation by Kiev, there had been no problems with the passage of civilian or military ships, including Ukrainian ones, through the Kerch Strait. Back in September, Ukrainian warships transited from Odessa port through the Kerch Strait to the port of Berdyansk. They had sent a proper notification to our Coast Guard. They had been given a pilot, which is an obligatory condition for navigation in the Kerch Strait. In other words, Ukraine had been well informed about the required procedure and had strictly followed it.

Therefore, it is not a question of limitation of free shipping but simply of following the required procedure that requires the relevant notification to be sent 48 hours in advance. This term is set due to the specific rules for navigation in the Kerch-Yenikale Canal related to its particular dimensions and complex hydrometeorological and navigational conditions.

In conclusion, we would like to draw attention of the Committee to the fact that currently navigation in the Kerch Strait has been completely restored.

2. Inspections of ships in the Sea of Azov and the Kerch Strait

Russia roundly rejects any accusations of aggressive or illegal actions in the Sea of Azov and the Kerch Strait. The Sea of Azov is the internal waters of Russia and Ukraine, where only Russian and Ukrainian vessels enjoy the freedom of navigation. The Kerch Strait is not and has never been an international strait as per the spirit of the UN Convention on the Law of the Sea (1982), and therefore any claims concerning the right of transit or innocent passage for foreign vessels are inapplicable in the Strait.

The measures being taken in that region are fully in line with the international law, aimed at the protection of the national security and correspond to the threats to Russia including those coming from the Ukrainian side. The inspections of vessels conducted by the Russian Coast Guard in the Sea of Azov and the Kerch Strait are legitimate and justified. The increase in the number of these inspections since April 2018 is due to the need to tighten security in the Kerch Strait following the opening of the first stage of the Crimean Bridge.

The Russian Coast Guard's actions are not discriminatory: 48 percent of the vessels they inspected between April and October 2018, or 720 out of 1,492 vessels, were transiting to or from Russian ports. Contrary to what Ukraine says, the Russian Coast Guard also inspects

ships flying the Russian flag. The overwhelming majority of inspections – 93 percent – are conducted at the anchorages located near the entrance to the Kerch Strait from the Black Sea or the Sea of Azov at the time, when sea convoys are formed for transiting the Kerch-Yenikale Canal. As a rule, these inspections do not exceed three hours. Any possible loss of time relates to the specific procedure for sailing via the Kerch-Yenikale Canal, its size and complex hydrometeorological and navigation conditions. Vessels are rarely stopped for inspection in the Sea of Azov and then only for compelling reasons.

In conclusion we would like once again to draw attention of the Committee to the fact that currently navigation through the Kerch Strait has been completely restored."

Statement by the delegation of Australia

"Australia is concerned about the escalation of tensions in the Sea of Azov and the Kerch Strait and in particular, Russia's interception and seizure of Ukrainian naval vessels which were attempting to pass through the Kerch Strait on 25 November and continued restriction of strait traffic. Australia fully supports Ukraine's sovereignty and territorial integrity, including its navigational rights in its territorial waters. We condemn Russia's military build-up and aggressive actions in the region, which are further violations of Ukraine's sovereignty and territorial integrity, and reaffirm that we do not recognize Russia's purported annexation of Crimea. We urge Russia to release Ukraine's vessels and sailors, respect legitimate navigation rights, and restore unhindered access to Ukrainian ports."

Statement by the delegation of Canada

"Canada strongly condemns the Russian Federation's actions against Ukraine in the Kerch Strait and surrounding waters. There is no justification for Russia's use of military force against Ukrainian ships and naval personnel. We call on the Russian Federation to immediately de-escalate, release the detained crew and vessels and refrain from impeding passage through the Kerch Strait. The Government of Canada is unequivocal in its support for Ukraine and condemnation of the Russian Federation's illegal annexation and occupation of Crimea. Canada will always be a steadfast partner of the people of Ukraine, and we will continue to work with our allies to hold the Russian Federation to account for its unacceptable behaviour."

Statement by the delegation of Estonia

"Estonian delegation associated itself with the statement made by German delegation on behalf of the European Union and furthermore Estonian delegation reiterated its strong support for the independence, sovereignty and territorial integrity of Ukraine within its internationally recognised borders."

Statement by the delegation of France

"La France se joint à la déclaration prononcée par l'Allemagne au nom de l'UE.

La France considère certes que l'OMI, qui traite des questions techniques de sécurité de la navigation, n'est pas l'enceinte appropriée pour aborder des sujets relevant habituellement du Conseil de sécurité des Nations unies et nous ne pouvons soutenir ici cette déclaration d'ordre politique. Néanmoins, la France exprime sa vive préoccupation concernant les graves incidents maritimes survenus entre la Russie et l'Ukraine dans le détroit de Kertch. Les forces russes ont déclaré avoir percuté, puis arraisonné, en faisant usage de la force, trois navires de guerre ukrainiens qui entreprenaient de franchir cette voie maritime. Compte tenu de notre connaissance des faits à ce stade, rien ne paraît justifier cet emploi de la force par la Russie.

Cette situation est la conséquence directe de l'annexion de la Crimée par la Russie en mars 2014, en violation du droit international. Nous rappelons à ce titre que la France a condamné la construction du pont de Kertch par la Russie, qui contribue à priver l'Ukraine d'un plein accès à ses espaces maritimes en mer d'Azov. La France rappelle son engagement en soutien à la souveraineté et à l'intégrité territoriale de l'Ukraine dans ses frontières internationalement reconnues. La France en appelle aux parties pour qu'elles favorisent un apaisement de la situation et que chacun fasse preuve de retenue.

Les mesures d'arraisonnement et de vérification des navires mises en œuvre par la Russie depuis le printemps 2018 affectent le fret maritime et l'activité des ports ukrainiens. La France appelle la Russie à respecter la liberté de passage dans le détroit de Kertch ainsi que de navigation dans les eaux de la mer d'Azov. La remise en cause des frontières est contraire au droit international. Elle constitue une menace directe pour la sécurité maritime et entraîne de graves répercussions sur l'ordre international, qui protège l'unité et la souveraineté de tous les États. Quatre ans après l'annexion illégale de la Crimée par la Fédération de Russie, la France et l'Union européenne demeurent fermement attachées au plein rétablissement de la souveraineté et de l'intégrité territoriale de l'Ukraine dans ses frontières internationalement reconnues."

Statement by the delegation of Georgia

"This organisation is responsible for disseminating any information that jeopardises international shipping and its very existence in the Black Sea. Ukraine presented report which describes in details violations of, literally, all IMO conventions whether mandatory or non-mandatory. Nations present here today, cannot tolerate such actions.

Georgia strongly condemns the ongoing Russian aggression against Ukraine and the latest act of unprovoked armed aggression of the Russian Federation in the Sea of Azov and Kerch Strait which has led to the seizure of Ukrainian vessels and their crews by Russia. Georgia sees mentioned attack on Ukrainian vessels and their seizure as a blatant violation of international law, including the United Nations Convention on the Law of the Sea. Such cases of violations of international rules remains a direct and grave challenge to the international and Black Sea security, which poses a serious threat to the safe movement of vessels and people and adversely affects the economic development of the region, thus urging the Russian Federation to follow the principle of peaceful use of seas. Georgia reaffirms its full support for Ukraine's sovereignty and territorial integrity within international recognized borders as well as for its rights in Ukraine's territorial waters. We call upon Russia to stop its provocative actions undermining stability and security of Ukraine and a wider region of the Black Sea."

Statement by the delegation of Germany

"More than four years on from the illegal annexation of the Autonomous Republic of Crimea and the city of Sevastopol by the Russian Federation, the European Union remains firmly committed to Ukraine's sovereignty and territorial integrity. The European Union reiterates that it does not recognise and continues to condemn this violation of international law. It remains a direct challenge to international security, with grave implications for the international legal order that protects the unity and sovereignty of all states. The European Union remains committed to fully implementing its non-recognition policy, including through restrictive measures. The EU calls again on UN Member States to consider similar non-recognition measures in line with the UNGA Resolution 68/262."

Statement by the delegation of Iceland

"Thank you Chair. Iceland would like to associate itself with the statements by Germany, United States, United Kingdom and others on this matter."

Statement by the delegation of Ireland

"Ireland as a member state of the European Union would like to associate itself with the statement of Germany which expresses the EU's views and this could be added to the report of the Committee."

Statement by the delegation of Spain

"España se une a las muestras de preocupación manifestadas por el peligroso incremento de la tensión en el Mar de Azov y en el Estrecho de Kerch tras el último incidente acontecido días atrás. España, como país miembro de la Unión Europea, alienta a la Federación de Rusia al restablecimiento del libre tránsito por el Estrecho de Kerch de acuerdo con el derecho internacional. España, como país miembro de la Unión Europea, se suma lo manifestado por las delegaciones de Alemania, Reino Unido, Suecia y otros en cuanto al no reconocimiento de la anexión ilegal de la Península de Crimea por parte de Rusia."

Statement by the delegation of Sweden

"Sweden would like to associate itself with the statements by Germany, UK and others, stating that they are firmly committed to Ukraine's independence, sovereignty and territorial integrity within its internationally recognized borders, and their expresses on its utmost concern about the dangerous increase of tensions in the Azov Sea and Kerch Strait in recent days."

Statement by the delegation of the United Kingdom

"The United Kingdom, as a Member State of the European Union, expresses its utmost concern about the dangerous increase of tensions in the Azov Sea and Kerch Strait in recent days which has led to the seizure of Ukrainian vessels and their crews by Russia and shots being fired at them, wounding several Ukrainian servicemen. We are dismayed at this use of force by Russia which, against the backdrop of increasing militarisation in the area, is unacceptable. The United Kingdom, as a Member State of the European Union, expects Russia to ensure unhindered and free passage through the Kerch strait to and from the Azov Sea, in accordance with international law. We call on all for utmost restraint to de-escalate the situation immediately.

The illegal annexation of the Crimean peninsula by Russia in 2014 remains a direct challenge to international security, with grave implications for the international legal order that protects the unity and sovereignty of all States. We reconfirm our condemnation of this violation of international law. The construction of the Kerch bridge constitutes a further violation of Ukraine's sovereignty and territorial integrity. The United Kingdom, as a Member State of the European Union, reiterates its full support for the independence, sovereignty and territorial integrity of Ukraine within its internationally recognised borders. The United Kingdom, as a Member State of the European Union, does not and will not recognise the illegal annexation of the Crimean peninsula by Russia. The United Kingdom, as a Member State of the European Union, will continue to follow closely the situation and is determined to act appropriately, in close coordination with its international partners."

Statement by the delegation of the United States

"The United States expresses its deep concern over the incident in the Black Sea that occurred November 25 as Ukrainian vessels attempted to transit through the Kerch Strait. Reports that Russian vessels rammed and fired on the Ukrainian ships, injuring Ukrainian crewmen, before seizing three vessels, represent a dangerous escalation and a violation of international law. The United States condemns this aggressive Russian action. Let's be clear about what happened that day. Ukrainian ships set sail from one Ukrainian port to another Ukrainian port. They attempted to do so by the only possible way to go, through the Kerch Strait. Both Russia and Ukraine use the strait routinely. But this time, Russia decided to prevent passage of the Ukrainian ships, rammed them, and then opened fire on them. Blocking the Kerch Strait is a clear violation of international law. The United States calls on Russia to return to Ukraine the 24 crew members it detained and the three vessels it seized. We yet again call on Russia to respect Ukraine's sovereignty and territorial integrity within its internationally recognized borders, extending to its territorial waters. This is not simply a bilateral matter between Russia and Ukraine, but rather a violation of international law by Russia which should concern all of us as responsible members of the international community."

Statement by the EC observer

"Thank you, Chair and good morning distinguished delegates. In line with the recent statement on 28 November 2018 by the EU's High Representative, the European Commission expresses its utmost concern at the dangerous increase in tensions in the Azov Sea and Kerch Strait in recent days, which has led to the seizure of Ukrainian vessels and their crews by Russia and shots being fired at them, wounding several Ukrainian servicemen. We call on all for utmost restraint to de-escalate the situation immediately.

The European Commission is increasingly concerned at the deteriorating situation in the Azov Sea, including reports of interruptions to commercial shipping transiting through the Kerch Strait to and from Ukraine's ports and expects Russia to ensure unhindered and free passage through the Kerch Strait to and from the Azov Sea, in accordance with international law. In that respect we would also express our concern at the recently instituted abnormally lengthy Russian inspection regime for cargo vessels coming from Ukraine's ports. I would finish, Chair, by underlining that the European Commission and indeed the European Union does not and will not recognise the illegal annexation of the Crimean peninsula by Russia."

AGENDA ITEM 9

Statement by the delegation of the Cook Islands

"The International Convention for the Safety of Life at Sea (SOLAS), Chapter III Regulations 16 and 17 require the launching appliance for the rescue boat to comply with the requirements of Section 6.1 of the International Life-Saving Appliances Code (LSA Code). LSA Code Section 6.1.1.3 requires that a launching appliance shall not depend on any means other than gravity or stored mechanical power which is independent of the ship's power supplies to launch the survival craft or rescue boat it serves in the fully loaded and equipped conditions and also in the light condition.

The Government of the Cook Islands considers that the handling of light rescue boats, which is not one of the ship's survival craft, served by a crane which has to be slewed manually in the outboard position for lowering the boat into the water by gravity, could be regarded as an equivalent arrangement to the required stored mechanical power as required in paragraph 6.1.1.3 of the LSA Code. On ships equipped with a six persons rescue boat which is not one of the ship's survival craft, having a weight of less than 700 kg in fully equipped

condition, with engine but without the crew, the launching appliance of the boat does not need to be fitted with stored mechanical power. Manual hoisting from the stowed position and turning out to the embarkation position shall be possible by one person against adverse list of 20 degrees and a trim of 10 degrees. For the other aspects the launching appliance shall be in full compliance with paragraphs 6.1.1 and 6.1.2. of the LSA Code."

Statement by the delegation of the Russian Federation

"This delegation has already spoken on several occasions about proposals of such type and we would like to recall to the Committee once again that decisions which are taken in this room should be feasible and implementable, and when we take these decisions we have to be absolutely sure that the industry (i.e. manufacturers, shipowners and other parties) would be able to apply all our mandatory requirements by the date of entry into force. But for some reasons it becomes a practice for the Organization to take decisions which are binding and then by the time of their entry into force to invent a mechanism on how not to comply with those decisions previously taken. There are quite a few examples of this fact – Manila amendments to STCW Convention, certification and training in relation to security aspects and others. In this respect we would really urge this Committee to abstain from taking decisions which recommend to the Administrations not to fulfil the binding requirements. In particular for the Russian Federation, if we recommend to PSC inspector to "close the eyes" to the fact that some mandatory requirements aren't being implemented, this PSC inspector will go to court. The proposal in the document (MSC 100/9/4) is addressed to the Administrations, but what exactly Administrations should do is not clear (actually it's a mystery). We call upon everyone sitting in this room to think about the principles of our work and first of all not to take decisions which we can't implement and if we have taken the decision let's make sure that it can be implemented.

In conclusion, the Russian Federation is definitely not in position to support the proposed measures in the document and in particular the recommendations to the Administrations and their ROs as stated in para 9.2 of the document."

Statement by the delegation of Germany

"Germany thanks the submitters for their document and their proposal to further discuss the ventilation requirements for totally enclosed lifeboats. This document questions the basis of the decision taken by SSE 5. Germany is of the view that a discussion lasting 1 session of the Maritime Safety Committee, two sessions of the SSE Subcommittee and an intersessional correspondence group where at least eight submissions were discussed is a detailed and in-depth discussion. And regarding the proposed FSA study, Germany is of the view that the FSA guidelines do not require the application of FSA in all circumstances. Even more important, if we have a look on the FSA process, Germany is of the view that the requirements as proposed by the SSE Subcommittee have passed the five well-known steps – without calling it an FSA:

1. Identification of hazards: after the **MOL Comfort** accident, Bahamas and Japan proposed the new output regarding ventilation of totally enclosed lifeboats. Document MSC 97/19/8 contains an analysis of the accident as well as the results of a research project on microclimate inside totally enclosed lifeboats, carried out by Japan. So in our view, the hazards occurring in totally enclosed lifeboats without sufficient ventilation have been identified and confirmed by the Maritime Safety Committee.

2. Assessment of risks: The relevant risk factors – microclimate and atmosphere inside totally enclosed survival crafts – have been evaluated in the already mentioned research project and submitted to the Maritime Safety Committee as document MSC 97/INF.11.

3. Risk control options: There are few options to address the identified hazard of suffocation, and so the MSC tasked the SSE Subcommittee to develop requirements for ventilation to ensure survivability inside totally enclosed lifeboats (MSC 97/22). The risk control options have been discussed by SSE 4 and 5 and the background to these discussions was provided in documents SSE 4/14, SSE 4/14/1, SSE 5/4 and SSE 5/4/1. Additionally, document SSE 5/3 provides additional scientific background.

4. Cost benefit assessment: First parts regarding potential costs for measures addressing the identified hazards are already mentioned in MSC 97/INF.11. Further aspects regarding costs and consequential amendments are mentioned in documents SSE 4/14, SSE 4/14/1 and SSE 5/4 and were discussed by the LSA working group during SSE 4 and 5.

5. Recommendations: the experts on life saving appliances have met and discussed this issue during 2 SSE meetings and an intersessional correspondence group and came to the conclusion, that the draft amendments to the LSA code in front of us would address the identified hazards with reasonable efforts. SSE 5 confirmed this conclusion on 16 March 2018 and accordingly submitted the draft amendments to this session of the MSC, where the decision how to address the hazard of suffocation can be taken.

All in all, the SSE Sub-Committee prepared this decision on a sound basis of scientific research and extensive discussions of the worlds' experts on live saving appliances. The proposed draft amendments to the LSA Code are the best way forward to ensure survivability inside totally enclosed lifeboats with only small additional efforts for the industry. Accordingly, Germany wholeheartedly supports the draft amendments as contained in document SSE 5/17 and we cannot support the statements made in document MSC 100/9/10."

AGENDA ITEM 10

Statement by the delegation of Panama

"Gracias Señor Presidente, Agradecemos a la Federación Internacional de los Trabajadores del Transporte (ITF) por la presentación del documento en el que se pone de manifiesto la investigación realizada por ellos con el fin de averiguar si los capitanes de remolcadores del Canal de Panamá operaban conforme a horarios que pudieran causar fatiga y para determinar los efectos de la fatiga, de existir, en la salud de los capitanes. Con relación al contenido de este documento queremos enfocar la atención a tres puntos particulares:

El primero, sobre los sujetos en nombre de quienes se presenta la nota objeto de examen. Capitanes de remolcadores son el personal encargado de operar los remolcadores que asisten a los buques en las operaciones de tránsito a través de las esclusas del Canal de Panamá, cuyo régimen está definido por la Constitución Política de la República de Panamá, título XVI, la Ley Orgánica de la Autoridad del Canal de Panamá. Los decretos y reglamentos que incluyen el régimen laboral especial, como lo es el artículo 3 del Decreto Ejecutivo No. 86 de 22 de febrero de 2013, por medio del cual se reglamenta el Convenio sobre trabajo Marítimo de 2006 de la República de Panamá, establece que, no se considera gente de mar a los trabajadores sujetos al régimen laboral especial de la Autoridad del Canal de Panamá. El segundo punto es relativo al lugar de trabajo o área de operación de los capitanes de remolcadores. En este sentido debemos aclarar que las operaciones de los capitanes de los remolcadores de la Autoridad del Canal de Panamá se dan en Aguas del Canal, entiéndase aguas interiores de la República de Panamá, según la definición establecida por la Convención de las Naciones Unidas sobre el Derecho del Mar.

Lo que nos lleva a la tercera particularidad de la situación examinada y es que este Foro, es decir la Organización Marítima Internacional, carece de competencia reguladora en materia

de relaciones laborales relativas a los Capitanes de remolcadores del Canal de Panama, por lo que sobre el incidente concreto no tenemos, para este foro, mayores comentarios por las razones antes mencionadas, sin embargo manifestamos que el mismo fue atendido debidamente por las autoridades respectivas. Dicho lo anterior nos interesa dejar constancia que la República de Panamá y la Autoridad del Canal de Panamá, se enorgullecen de las políticas laborales que rigen a todos los trabajadores de esta institución nacional, las cuales permiten brindar el servicio de calidad internacional que ponemos a la disposición del mundo entero, pero al mismo tiempo, nos complacemos en dar la bienvenida a las recomendaciones propuestas en el documento, ya que éstas tienen la utilidad de complementar nuestras normas y políticas en continua renovación.

Debemos también indicar en este sentido que la Autoridad del Canal de Panamá ha tomado medidas como: Descontinuar, desde el 1 de julio de este año, la práctica temporal de asignar capitanes adicionales en sobretiempo en los remolcadores que asisten a buques por las nuevas esclusas. Aún cuando esta no fue la causa del accidente que se menciona. Indicamos así que las asignaciones de capitanes adicionales fue una medida temporal para asegurar que todos los capitanes fuesen debidamente capacitados y familiarizados con los procedimientos de las nuevas esclusas por un periodo de dos años. Una vez alcanzada la meta la practica fue descontinuada.

Salvo esta práctica temporal, los horarios de trabajo de los capitanes de remolcares en el Canal de Panamá son de 8 horas diarias a bordo. Estos horarios han sido los mismos por lo menos por los últimos 40 a 50 años y son el resultado de acuerdos entre la Administración y el sindicato de capitanes de remolcadores a través de convenciones colectivas y podemos asegurar que sus jornadas de descanso son tan respetadas como las de abordaje de los buques de navegación internacional que cumplen con las normas establecidas por el convenio del trabajo en el mar y el convenio STCW 78 enmendado."

AGENDA ITEM 14

Statement by the delegation of Nigeria

"The delegation of Nigeria wishes to express its deep concern and regret over the continued spate of piracy and armed robbery incidences within the Gulf of Guinea.

We appreciate that the IMO has in its document MSC 100/14 recognized the efforts of the coastal states of the Gulf of Guinea towards combating this ugly incidence. Nigeria will like to reiterate its commitment to combat and put an end to these incidences which have continued to threaten lives and property and drive the cost of shipping and related goods and services beyond the reach of most of its teeming population. While Nigeria like most countries of the world continues to spend a huge chunk of its budget combating terrorism from all fronts (coastal and hinterland) it has by no means relegated efforts to combat piracy and armed robbery to the back burner.

The Government has added 18 fast intervention boats to improve patrolling of its coast. It continues to maintain and improve 24-hour surveillance of its waters and beyond under collaborative efforts between its Maritime Administration and the Navy. To this end it has recently launched the Deep Blue Surveillance System – This is an Integrated National Surveillance and Waterways Protection Solution with command and control infrastructures domiciled in the Maritime Administration aimed at ensuring the security of the Gulf of Guinea. This project is to provide the platform for improved monitoring and enforcement within the Nigerian waters and its Exclusive Economic Zone (EEZ). The project involves positive policing of our waterways and EEZ with 24hrs intelligence and patrolling with no loll of lack of footprint which has hitherto been used by pirates to strike unsuspecting ship.

Under the Deep Blue Surveillance project there has been extensive training of security and patrol staff drawn from the Maritime Administration, the Navy and the Civil defence. While we await the enactment of the country's Piracy bill which we expect to be very soon, we are already collaborating with the Judiciary to share knowledge and adequately prepare for a robust prosecution of acts of pirates and armed robbery. As part of this exercise, a Maritime seminar for Judges organised by the Maritime Administration is scheduled for the 10th to 12th December 2018. Furthermore, while treading with caution, the Nigerian Government has approved a few privately contracted security companies who work with the Nigerian Navy for the security of vessels.

Nigeria continues to participate in the various regional collaborative platforms of the Gulf of Guinea with a shared objective of urgently combating piracy within the region, as we speak, the international Maritime Security operation from the United Kingdom is holding discussions with the Administration in Nigeria. Furthermore, Nigeria will appreciate if the International Maritime Bureau will in future take appropriate steps in ensuring that the data are not exaggerated by lumping up all maritime related attacks as piracy but noting the distinction between sea robbery and Piracy. Though the level of success is not as evident in clear terms, we must say that the above efforts have resulted in a good number of foiled pirates' attacks and helped in rescuing seafarers unharmed.

We will conclude by thanking the IMO, its Member States, regional and international organisations who have partnered with us to combat piracy as we remain committed and very positive that together we shall successfully stop piracy in the Gulf of Guinea. "

Statement by the delegation of Jordan

"The Hashemite Kingdom of Jordan strongly supports Oman in its appeal to exclude this area from High Risk Areas. This is in light of the procedures Oman has taken, particularly signing Djibouti code of conduct. Piracy and armed robbery against ships has decreased significantly in the previous few years in this area, and thus, it deserves to be removed from High Risk Areas."

Statement by the delegation of Oman

MSC 100/14/2
Oman



السيدرئيس الاجتماع سعادة/ كيتك ليم الأمين العام أصحاب
السعادة الأخوة والاخوات تحية طيبة,,, إن سلطنة عمان تتقدم بهذه الوثيقة (القرصنة
البحرية والسطو المسلح ضد السفن).

الوثيقة المطروحة أمامكم تبين مدى انخفاض عمليات القرصنة البحرية في شمال المحيط
وفق تعريف أفضل HRA الهندي وبحر العرب خاصة في المنطقة المحددة بمنطقة عالية الخطورة
الممارسات لحماية السفن ضد القرصنة البحرية في السواحل الصومالية.

الوثائق ذات الصلة منشور الرسالة رقم ٣٦٠٦ , MSC 4/Circ232 , MSCI/ Circ 1339 . MSC. 4/Circ . 258
MSC4Circ.245, BMP 5 . وكذلك

إن سلطنة عمان تدرك مدى خطورة المس بسلامة الأمن والبيئة البحرية خاصة بعد ارتفاع
عدد حالات القرصنة البحرية على السفن خلال عام ٢٠٠٨ م و٢٠٠٩ م وزادت عمليات
مهاجمة السفن التجارية بالسواحل الصومالية وخليج عدن في هذه الفترة وقد توسعت هذه
الهجمات لتصل إلى شمال الغربي من المحيط الهندي . وعليه تمت الإشارة وتحديد منطقة
عالية الخطورة (High Risk Area) .

إن سلطنة عمان تقدر كل الجهود التي بذلت من كل المعنيين في هذا الجانب والتي نتج عن إعادة
رسم وتحديد هذه المنطقة (High Risk Area) بإخراج بحر عمان من منطقة عالية الخطورة في
ديسمبر من عام ٢٠١٥ م.

إن النظرة العامة والمبنية على التقارير حول القرصنة البحرية والسطو المسلح ومن خلال نظام
(System Information Global Integrated Shipping) تظهر انخفاض ملحوظا ولم
تقع أية منها خلال عام ٢٠١٥ م وحتى الربع الأول من عام ٢٠١٨ م في بحر العرب.
إننا نود التأكيد بأدراكنا بمدى خطورة هذه الهجمات على السلامة البحرية إلا أن بقاء بحر العرب من
ظمن حدود هذه المنطقة وعدم وجود الأسباب التي تجعلها ضمن هذه المنطقة أساسا فإنا نرى
أهمية إعادة رسمها ، وقد كان الاجتماع الأخير لمجموعة الشيد (SHADE) والذي عقد بمملكة
البحرين الشقيقة وإستعرض التهديد من قبل القراصنة في هذه المنطقة والمناقشات البناءة
في هذا الموضوع والتجاوب الحسن من قبل المجتمعون خاصة من وفد الصناعيين
(INTERTANKO) وإننا نتوجه بشكر السلطنة لتفهمهم مطلبنا في إخراج بحر العرب من
منطقة عالية الخطورة ونقدر مدى تفهم هذا المطلب والذي يخدم جميع موانئ المنطقة
وليس حصراً على سلطنة عمان .

والمطلب من اللجنة وجميع الحاضرين هنا هو الأخذ علماً بالتوصيات بإخراج بحر العرب من منطقة
عالية الخطورة وإن لم يكن ذلك إخراج المنطقة المرسومة وفق الخارطة المرفقة متمنين للجميع
التوفيق .

Statement by the delegation of the United Arab Emirates

شكرا سيدي الرئيس"
بداية يود وفد دولة الإمارات العربية المتحدة أن ينتهز الفرصة بتهنئة أو استضافة قهوة
حيث نود أن نعرب عن شكرنا لوفد سلطنة عمان على الوثيقة بشأن المناطق عالية الخطورة High Risk Area، سيدي الرئيس ، نحن نعلم تماما بأن النطاق الجغرافي لتلك المناطق قد تم تحديده في وثيقة أفضل الممارسات الإدارية Best Management Practices BMP للحماية من أعمال القرصنة والتي تم وضعها ويقوم بتنفيذها عدة منظمات وجهات تمثل صناعة النقل البحري، والتي تقوم بمراجعة دورية ومستمرة مبنية على تقييم شامل للتهديدات في تلك المناطق.
حيث نود أن نشكر جهود تلك المنظمات والجهات لتحقيق رؤية المنظمة البحرية الدولية وبالأخص أمن وسلامة النقل البحري،
وفي هذا الإطار يود وفد دولة الإمارات تأييد طلب سلطنة عمان من استبعاد ورفع تصنيف منطقة بحر عمان من المناطق عالية الخطورة بسبب انحسار حالات القرصنة على السفن في منطقة بحر عمان وذلك حسب ما هو موضح في الملحق في هذه الوثيقة.
كما نود من لجنة السلامة البحرية حث تلك المنظمات والجهات التي تقوم بتنفيذ وثيقة أفضل الممارسات الإدارية BMP باستعراض تقرير مفصل بشأن المناطق عالية الخطورة تحت هذه الأجندة .
شكرا سيدي الرئيس"

AGENDA ITEM 15

Statement by the delegation of Italy

"During the fifth session of the Sub Committee on Navigation, Communication, Search and Rescue (NCSR), Italy provided information on the Libyan Maritime Rescue Coordination Project (LMRCC Project), an initiative run by the Italian Coast Guard and funded by the European Commission, with the aim of conducting a feasibility study in order to establish a Libyan MRCC and to support the Libyan authorities in identifying and declaring their search and rescue region, in accordance with international maritime laws and in cooperation with the neighbouring countries. The Sub-Committee expressed its appreciation for the information provided.

At MSC 99 the Secretary-General expressed his sincere appreciation for the LMRCC Project that was supporting the Libyan authorities as they established a rescue coordination centre in Tripoli (Libya) and declared their search and rescue region (SRR). As part of the Project, on 11 October 2018 an international event entitled "Mediterranean Maritime Search and Rescue Conference" was held in Rome. Its purpose was to discuss SAR activities and facilitate cooperation on search and rescue matters among the states involved. Representatives of SAR Organisations from Mediterranean States (Albania, Croatia, Egypt, France, Gibraltar, Greece, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Tunisia, Turkey), and Portugal attended the conference as participants.

Representatives from UN Agencies, including UNHCR, IOM, IMO, the World Food Programme (WFP), and the United Nation Office Drug and Crime (UNODC), as well as EU states and institutions attended the conference as observers. The conference was an opportunity to reflect on the current situation, bringing together representatives from all the Mediterranean coastal states in order to facilitate multilateral cooperation, seeking solutions to common problems by sharing expertise and best practices in a cooperative manner. The conference consisted of two main panel sessions:

- Panel 1: relevant instruments of search and rescue activities;
- Panel 2: SAR agreements.

During the discussions, it emerged that there was a need to better define "distress case" and "place of safety", in accordance with current IMO guidelines. It was also stressed that the Mediterranean SAR system has been recently put under serious strain and the international community therefore needs to find better ways of protecting the sustainability of that system, taking into account that all SAR operations (specifically in the Mediterranean) must also be fully compliant with international and EU human rights law. The conference also provided an excellent chance to call attention to local SAR agreements and further encourage regional SAR agreements that could, in the medium-to-long term, enhance the operational capability of the competent authorities in carrying out Search and Rescue services, aimed at increasing the safety of life at sea, as established by the SAR Convention.

The Mediterranean SAR authorities need to continue their efforts and ensure that no more lives will be lost at sea through the actions of smugglers who make a business out of people's misery, and must continue to work together to find a sustainable solution to the ongoing tragedies in the Mediterranean. The principles established in the UNCLOS, SOLAS and SAR Conventions therefore need to be adequately integrated with human rights law, refugee law, international humanitarian law, maritime law and security issues, which will result in greater protection of the maritime borders and will better mitigate the risks associated with illegal migration flows and terrorism. Finally, it may be time for a new type of international convention aimed at guaranteeing a fair balance between these demands/needs. The SAR conference also offered an occasion to meet the Libyan authorities and emphasise how important it is for them to declare their Search and Rescue Region (SRR), bearing in mind that SRRs need to be consistent with the real capabilities of coastal states in order to safely and effectively provide and coordinate SAR services.

In conclusion, the EU and Italy support the establishment of Libyan Maritime Rescue Coordination Centre as well as tailored training for the Libyan Coast Guard personnel in order to enable Libya to operate in its SRR according to international law. As information for the distinguished delegates an info paper regarding the project has already been submitted by this delegation to the forthcoming NCSR 6."

Statement by the delegation of Malta

"It will be recalled that at the MSC 98th session in April 2017, in considering the migrant crisis in the central Mediterranean region, Member States had also agreed that the way forward was to promote appropriate and effective action at the United Nations.

Malta believes that migration is a global challenge, and that efforts to tackle migration issues in their specific regional context need to be supported by global initiatives. It is in this spirit that Malta has been active and supportive in the process, which the UN General Assembly launched in April 2017, to develop a global compact for safe, orderly and regular migration. Completed in July this year, after 18 months of intensive discussions and negotiations, the

compact aims to build a new global migration governance architecture that allows for reacting decisively, managing collectively and responsibly, migratory issues based on the principle of international solidarity. Malta supports this compact. We look forward to participating in the Intergovernmental Conference being held in Morocco next week to formally adopt it. Malta regrets that a number of countries have declared that they do not intend to adopt the Compact. We recognise that the text is not perfect.

However it is clear that the final text was the best that could be achieved while maintaining general consensus. It constitutes an important first step in a difficult but necessary collective process which has the potential to provide the international community with a fresh approach to governing migration. Among its many important aspects we wish to highlight the emphasis made in the Compact on the nexus between migration and development and the way this can impact on the promotion of more regular and sustainable migration flows. At the same time we welcome the commitment to prevent, combat and eradicate the networks of smugglers of migrants and traffickers of human beings, which are at the heart of so much dislocation, suffering and tragedy.

In the context of the work in our Committee we note in particular Objective 8 of the Compact which speaks about the commitment to cooperate internationally to save lives and prevent migrant deaths and injuries through individual or joint search and rescue operations. We believe that the Compact will complement and reinforce our continuing efforts to deal with the migrant issue in our region of the central Mediterranean. Within the framework of the Valletta Action Plan adopted by the EU leaders in February 2017, and where they agreed on a set of concrete actions to better manage migration flows and save lives in the Central Mediterranean route, a total of 1252 initiatives have to date been implemented to a global value of €11.66bn. €116 million have been allocated specifically for a training package for Libya, under which a number of Libyan Navy and Coastguard officers have been trained in Malta by the AFM. Through its active involvement in this and other initiatives Malta shows its strong commitment to implement the Global Compact on Migration and looks forward to see it manifested globally with the international community, in the spirit of responsibility sharing."

Statement by the delegation of Spain

"Agradecemos a la secretaria, la información proporcionada en el documento que acaba de presentarse.

Distinguidos delegados, actualmente, más de 260 millones de migrantes, refugiados y desplazados viven en un estado distinto al de nacimiento. España comparte la visión del pacto mundial para una migración segura, ordenada y regular que será adoptado en la conferencia intergubernamental de Marrakech los próximos días 10 y 11 de diciembre. El compromiso de España con el pacto mundial para la migración, nace de nuestra apuesta por un multilateralismo eficaz. El pacto migratorio aspira a implicar a toda la comunidad internacional y a abordar el fenómeno migratorio con un enfoque global, como bien ha sido destacado por su alteza real en las palabras dirigidas a este comité, al apuntar hacia la búsqueda de soluciones internacionales como respuesta a este reto humanitario. 2018 está siendo un año especialmente complejo para el servicio de salvamento marítimo español como consecuencia de la crisis migratoria en el Mediterráneo occidental.

En este sentido, es importante destacar la excelente coordinación y colaboración prestada por el Reino de Marruecos para hacer frente a esta compleja labor. Hasta el pasado mes de octubre, hemos experimentado un aumento muy significativo en el número de operaciones llevadas a cabo por Salvamento Marítimo respecto de los dos años anteriores.

El número de personas rescatadas asciende a más de 59.300 personas, un 173% superior respecto a los dos últimos años. Las embarcaciones atendidas superan las 4.900 embarcaciones, lo que representa un incremento del 31% en comparación con dicho periodo. Y el número de fallecidos se situó en 358 personas, un 77% más que en los dos años anteriores. Por todo ello, alentamos a la OMI a que siga jugando un papel destacado ante el reto humanitario constante que implica la migración mixta en condiciones peligrosas por mar. Solicitamos que esta declaración figure en el informe final del comité."

Statement by the IOM observer

"It is an honour to represent the UN Migration Agency here as you mark the centennial session of IMO's Maritime Safety Committee. I would like to start by reconfirming the IOM views expressed by my colleagues at previous MSCs as well as the inter-agency meeting with the maritime industry on mixed migration kindly hosted by IMO in October 2017.

Large-scale movements of people, driven by diverse motivations, have posed increasing political and humanitarian challenges. In 2018, IOM has responded to a number of urgent, complex situations, working in cooperation with other partners to ensure basic immediate support for those affected while working towards more durable outcomes. IOM's Displacement Tracking Matrix (DTM), is a useful tool to gauge a real-time view of movements in specific parts of the world, including migrants crossing the Mediterranean who continue to face many vulnerable situations as they embark on their journeys, from human trafficking to smuggling to detention often in very inhumane conditions. As of yesterday, 4 December, IOM recorded 108,417 arrivals in Europe by sea, compared to 172,362 arrivals in 2017 and 364,008 arrivals in 2016. Alas, the number of migrant deaths remains high, and the Central Mediterranean continues to be the deadliest route with 2,123 deaths recorded this year.

The Central Mediterranean Route to Italy remains a key concerns in particular because of the bleak situation in Libya, with a significant number of migrants and refugees still held in detention, including all those returned by the Libyan Coast Guards – more than 15,000 this year. Migrants in detention are living in overcrowded and deteriorating conditions and exposed to serious protection risks, including allegations of serious reports of human rights abuses. IOM's position remains that Libya is not a safe port of return. IOM's priority in Libya continues to be first and foremost saving migrant lives and supporting the stabilization efforts in the country. Our support to migrants is focused on humanitarian life-saving interventions, immediate life-saving assistance, such as food, water, non-food items (NFIs), protection, and health services at disembarkation points, and voluntary return assistance from Libya to countries of origin.

While much work is being done to address short-term needs, the real linchpin is the stabilization of Libya. IOM takes a comprehensive approach to the migration challenges in Libya, including efforts to enhance migration governance through capacity building and trainings on international legal frameworks and standards to detention centre managers, port security and Libyan Coast Guards, among others. Longer term efforts to improve the national legal framework regarding migrants in Libya are also underway primarily on counter-trafficking and labour market integration as well as looking at assistance to those stranded in the desert. On 30 July, IOM and UNHCR co-chaired an informal senior officials meeting on Search and Rescue and Disembarkation in the Mediterranean Region involving 14 countries along the Mediterranean basin and relevant international organizations, including the International Maritime Organization (IMO), the African Union (AU), the European Union (EU), the International Chamber of Shipping (ICS), and the International Committee of the Red Cross (as observer). The meeting was convened in response to the challenges faced by coastal States in search-and-rescue (SAR) and subsequent disembarkation in the Mediterranean. The continued challenges over predictable SAR and disembarkation require the continued support

of IMO and others to put in place a functioning a regional agreement. Planning for a follow-up meeting are under considerations and we welcome IMO's continuous engagement in this regard.

As a consequence of the instabilities in Libya, we are seeing an increase in embarkations away from the Libyan shores. The number of migrants departing from Libya and landing in Italy has decreased by 87% compared to the same period between January and September last year. Whereas the number of arrivals from Tunisia to Italy has increased.

Available data from national authorities and IOM offices further suggest an increase in the use of the Western Mediterranean Route which leads to Spain, where 52,678 new sea arrivals were registered between January and November 2018. In September alone, a total of 8,399 migrants and refugees arrived in Spain by sea and land, almost four times the arrivals reported by the Spanish authorities for September 2017. Subsequently, new needs have arisen along the routes. IOM is working to address the immediate needs of the most vulnerable migrants by operating, among other activities, transit centres in Gao (Mali), Agadez (Niger) and Tambacounda (Senegal), which provide shelter and offer referral services. However, the risks remain significant. While the EU and its Member States have the right to protect its external borders, international law also requires the protection of human lives, their human rights and their dignity. In response to the growing concerns on the challenges posed by large flows over land and across seas in all regions of the globe, the 19 September 2016 UN General Assembly high-level summit to address large movements of refugees and migrants brought together Heads of State to approve the New York Declaration for Refugees and Migrants, leading to parallel processes over the past two years to draft two global compacts: one on refugees and the other for migration. Throughout the past months, IOM and IMO have coordinated closely on the Global Compact for Migration (GCM). IMO's Maritime Safety Committee submitted its record of views to the UN Special Representative of the Secretary-General for International Migration for consideration at the GCM stocktaking meeting held in Mexico last year.

The text of the GCM was finalized on 13 July 2018 following six rounds of inter-governmental negotiations in the UN General Assembly between February and July 2018, which followed the consultation and stocktaking phases that took place between April 2017 and January 2018. The text will be considered for adoption at an Intergovernmental Conference on International Migration next week in Marrakesh on 10-11 December, convened at the highest political level. Subsequently, the GCM will be presented for adoption by the UN General Assembly. The Global Compact recognizes that managing international migration is a shared responsibility of all countries, not just those countries to which people are migrating. It presents an opportunity to improve the governance of international migration and to address the benefits and challenges associated with today's migration. It can help to draw out the benefits of migration and to mitigate the risks. And it can be a resource in finding the right balance between the rights of individuals and the sovereignty of states. The Global Compact does not encourage migration, nor does it aim to stop it. Rather, it provides a 360 degree vision on safe, orderly and regular migration. It fully respects the sovereignty of states, and it is not a legally binding document. It provides a blueprint for how states can best manage migration and cooperate more effectively with one another. It also gives states the space and flexibility to do so on the basis of their own migration realities and capacities. Ultimately migration cannot be managed in isolation. It requires partnerships; foremost among States.

Of the 23 objectives in the document, highly relevant to this session's discussion are GCM Objective 8 "Save lives and establish coordinated international efforts on missing migrants" and Objective 9 "Strengthen the transnational response to smuggling of migrants". Both of these objectives aim to save lives and protect human rights through states' commitments to international cooperation. Implementation will require concerted and cooperative action not only by governments but also, in an inclusive spirit of partnership, by the many non-governmental actors who have an essential role to play in good migration governance, including civil society, cities and municipalities, the private sector, unions, migrant and diaspora organizations, academia and migrants themselves, amongst others.

A UN Network on Migration has replaced the Global Migration Group (GMG) and represents the UN system's support to GCM implementation, follow up and review. IOM is honoured to have been given, by the UN Secretary General, and endorsed by its Member States, the task of coordinating the Network and serving as its Secretariat. IOM is working closely with the Office of the Special Representative of the Secretary General on International Migration, Ms. Louise Arbour, on establishing the organization of work of this new Network to coordinate the UN system's support to Member States for effective implementation, follow up and review of the Global Compact. To be effective, the work of the new Network will need to be closely connected to the repositioning of the UN Development System, and to contribute to the achievement of the 2030 Agenda for Sustainable Development.

IOM is committed to pursuing its Network Coordinator and Secretariat role in a spirit of partnership and cooperation with its fellow UN agencies. IOM is also committed to keeping Member States and other relevant stakeholders – such as IMO – well-informed on the activities of the Network and to regularly seeking their views and suggestions. I thank IMO for its hospitality and look forward to our continued exchanges in this and other fora."

Statement by the UNHCR observer

"Thank you for the opportunity to address this Committee on behalf of the UN High Commissioner for Refugees. This item on unsafe mixed movements by sea is especially timely as we look towards the Intergovernmental Conference on the Global Compact on Migration next week in Marrakesh; as well as the high-level event in New York the following week, which will mark the validation by the UN General Assembly of the separate Global Compact on Refugees.

The two Compacts, though the products of separate processes over the past two years, and having different but coherent objectives, both address essential dimensions of the comprehensive, forward-looking approaches needed to reduce loss of life at sea in the Mediterranean and elsewhere, in the broader framework of a more equitable sharing of responsibility and cooperation.

Mr. Chairman, it is the first time I participate in the deliberations of this Committee, and I would like at the outset to strongly emphasize a point that my colleagues have often made during its previous sessions. We can all agree that the ultimate 'solutions' to the stark humanitarian challenges which result from – but also, in some cases, impel – the unsafe movement of large numbers of people by sea lie outside the search-and-rescue system. Again, the two Compacts provide important roadmaps for this. But whatever the context and whatever the causes, when human life is in peril at sea, our shared commitment to ensuring that SAR responses are swift, effective, and cooperative cannot be allowed to waiver. Nor can the fundamental principle that in cases where shipmasters are called to assist, they will be able to do so with full confidence that politics will be set aside to ensure that they will be relieved as soon as possible and no unnecessary obstacles will be placed in the way of delivering survivors to a place of safety.

The Global Compact on Refugees seeks to translate the longstanding principles of burden and responsibility sharing of the international refugee protection regime into concrete, practical arrangements that provide an architecture of support for host countries and communities affected by large refugee situations. [This architecture includes regular pledging by all UN Member States and other stakeholders towards the objectives of the Refugee Compact through Global Refugee Forums; as well as the possibility to seek activation of a "support platform" in response to particular situations, bringing together key States and other stakeholders.] Many of the areas in need of support flagged in the Refugee Compact's programme of action include assistance in terms of initial reception, screening and referral of new arrivals to appropriate procedures, as well as a renewed emphasis on solutions grounded in international cooperation. The re-commitment to international cooperation and burden and responsibility sharing that is at the heart of the Refugee Compact indeed recalls the requirements of international cooperation and coordination to ensure disembarkation in a place of safety that are fundamental to the SAR regime, and could serve as a model for what is needed to insulate questions of rescue, disembarkation, and protecting human life at sea from the vagaries of politics. The UNHCR-IOM proposal for a regional disembarkation mechanism in the Mediterranean, to which I will return shortly, goes precisely in this sense.

Mr. Chairman, the trends and concerns which were noted at your last Committee meeting have largely continued, and some respects sharpened, in the intervening months. The overall numbers of refugees and migrants crossing by sea to Europe have fallen significantly in 2018. This in large part of course reflects the changed situation in the central Mediterranean, where arrivals to Italy at the end of November stood at close to a fifth of those arriving in 2017. (Other routes – such as the sea route towards Spain – have seen a marked increase). Notwithstanding the decrease in overall numbers of people resorting to dangerous sea journeys, an appalling level of loss of life persists. More than 2,100 men, women and children have perished or gone missing so far this year in the Mediterranean.

The acute need for effective SAR cooperation could not be clearer. However, what we have seen recently has included some extremely worrying examples of rescued people, and those who selflessly came to their aid, remaining at sea for extended periods, waiting for States to provide assistance and a safe place for disembarkation.

Moreover, we have seen a few instances where, for lack of alternatives, rescued people have been returned to places where there was little possible doubt that instead of safety they would find arbitrary detention in atrocious conditions, if not far worse. I would like to pause here to draw attention in this context to the guidance provided in the IMO 2004 Guidelines on the Treatment of Persons Rescued at Sea, familiar to all, which note that risks to the lives or freedoms of asylum-seekers and refugees is a consideration in identifying a place of safety. It is timely to recall that, while the Guidelines themselves are not a binding instrument, their guidance on this point in fact reflects binding non-refoulement obligations under international law which coastal and flag states need to respect at all times.

On the other hand, we have also seen very encouraging examples of cooperation between coastal and other States to share responsibility for welcoming rescued people and providing access, where needed, to international protection. Such cooperation is indeed to be lauded. However if it must be negotiated anew on an ad hoc basis each time there is a crisis at sea, it cannot provide the certainty and predictability that is required to protect the SAR system, and the ancillary role of merchant shipping within it.

That is why UNHCR and IOM earlier this year put forward a Proposal for a regional cooperative arrangement ensuring predictable disembarkation and subsequent processing of persons rescued at sea, which was discussed by Mediterranean coastal States at an IOM/UNHCR jointly-convened meeting – with the valuable participation of IMO – on 30 July this year.

The Proposal does not seek to promote new regulations, but rather to support effective regional cooperative arrangements in line with existing international law and frameworks. We continue to believe that such arrangements are urgent. We stand ready to support Member States in taking this forward."

Statement by the EC observer

Thank you for giving EUNAVFOR MED the opportunity to update the Maritime Safety Committee at the 100th session.

EUNAVFOR MED (ENFM) is an EU Maritime Operation in the Central Mediterranean sea, part of the EU Common Security and Defence Policy. Since the beginning in June 2015, EUNAVFOR MED has been contributing – as part of the EU "Comprehensive Approach" – to disrupt the smugglers' business model (that is the "core task" of the operation), fighting illicit activities at sea and supporting the stabilization of Libya. The phenomenon of migration today cannot be separated from the many criminal activities, connected among them. Along with the core task (*today we have neutralised more than 500 boats, provided to the Italian judicial authorities 151 suspected smugglers*), since 2016 the operation is the only international actor implementing the UN arms embargo on the high seas off the coast of Libya seizing weapons in 2 occasions. The achieved deterrent effect has been recognized by the UN Security Council. Additionally, in October 2017 we have been mandated by the EU Member States to gather information on Oil smuggling from Libya.

Even if not part of our mandate, EUNAVFOR MED rescued almost 45.000 migrants which, by the way, represents less than 10% of total of migrants rescued in the same area since 2015. Another important task assigned to the operation is the training of the Military Libyan Coast Guard and Navy. Today I intend to draw your attention on the role played by them in saving lives at sea and fighting illicit activities in their areas of responsibilities. It is important to pay tribute to the effort made by this institution (recognized by the Libyan Government of National Accord as one of the 3 reliable institutions). The results achieved by the Libyan Coast Guard are even more relevant if we consider the several constraints they have to face on a daily basis. As a matter of fact, in 2017, the total amount of migrants attempting to cross the Mediterranean was in excess of 170,000, 67% of whom departing from Libya. This year, the total number of migrants arrivals in Europe is rating around 100.000 people with only 20% originating from the central Mediterranean Route and with an 87% decrease of the migrants coming from Libya. Moreover we witnessed a reduction of deaths along this route.

The continuously enhanced presence and effective role played at sea by the Military Libyan Coast Guard since July 2017 has achieved a twofold result: on one side, it has hampered the smugglers business model through a deterrent effect, with a relevant impact on their illegal profits, on the other hand it has discouraged migrants from using the central route to reach Europe therefore reducing the number of deaths at sea. The combination of training and equipment has proven to be the right way to support the Libyan Coast Guard to better fulfil its institutional responsibilities, fighting illicit activities and saving lives at sea. To date, the figures show that the Libyan Coast Guard saved more than 30,000 lives at sea since 2017 confirming their strong commitment and eagerness to be part of the migratory solution.

The Operation will continue to play its relevant role of EU maritime security provider in the Central Mediterranean, deterring and acting as necessary in the high sea. The mature level of cooperation and networking with civilian EU, UN and international stakeholders make this operation unique and has been internationally recognized as a "model" to be implemented to countering organized crimes. As an example, the recent institution of a Crime Information Cell, in cooperation with the European Police Agency (EUROPOL) and the EU border management Agency (FRONTEX), embedded on board of ENFM flagship at sea, ensures "operational

continuity" between activities carried out at sea by EUNAVFOR MED and law enforcement activities carried out ashore by the EU Member States national authorities. We believe that an important role at sea can also be played by the Shipping Companies. This is why we place particular significance also to our relationship with the Shipping industry: with the crucial support of the International Chamber of Shipping and the most relevant associations we are enhancing a mutual knowledge and understanding in the Central Mediterranean, thereby contributing to Maritime Situational Awareness and ultimately to a more secure Mediterranean Sea.

EUNAVFOR MED was born as an emergency response to a humanitarian crisis. Today SOPHIA represents a structured response as part of the EU integrated approach to tackle migration and to contribute to the stabilization of Libya. As reported by UNHCR and IOM, still 600.000 people of concern remain in Libya. Half of them could embark on the unsafe journey through the Mediterranean Sea if the condition ashore in Libya changes again. Therefore, it is necessary to maintain our attention in this region and a capable naval presence in the area able to enforce the rule of law and the freedom of navigation in the high seas, while contributing to the capacity building of the Libyan Coast Guard and Navy and consequently to the stabilization of Libya."

Statement by the ICS observer

"ICS thanks the Secretariat for providing an update on important international developments to address the fundamental challenges of international migration.

ICS further recalls the words of the Secretary General in his opening speech on Monday regarding the important work of the European Union and EUNAVFOR MED in capacity building efforts with the Libyan Coast Guard. 2018 has seen a reduction in the number of merchant ships called upon to discharge their moral and legal obligations for rescue at sea in the Central Mediterranean. But this headline does not reflect the emerging complexity of continuing merchant ship involvement or the continuing tragedy at sea. ICS has a growing concern regarding the complexity of resolving those rescues that do continue to happen. In particular, achieving prompt and predictable disembarkation in a place of safety for those rescued; without introducing safety and security risks for Masters and crews or compromising Companies' ability to meet their responsibilities towards their personnel.

Equally, we have concern regarding undue criticism of Companies and Masters conducting rescues in accordance with SOLAS. In particular, where there may be challenges in seeking disembarkation in a place of safety compatible with the principles of other international conventions which may apply to those rescued. Masters that have rescued persons at sea under the coordination of the coast guard of a Contracting Government should not be left to deal with this challenge, taking into account the responsibilities for Governments and MRCCs outlined in resolution MSC.167(78) on Guidelines on treatment of persons rescued at sea.

ICS appreciates that migration is a sensitive and complex issue. However, we would urge member States to consider the consequences for search and rescue coordination and cooperation created by any international and regional migration policy developments, and consequential uncertainties for merchant ships, Masters and crews. If we may request that the Committee takes an action in response to this statement, it is to: note the concern regarding the emerging complexity of rescue at sea in the Central Mediterranean and the consequential safety and security challenges for Companies and seafarers. It is further requested that this statement is appended to the report of the Committee."

AGENDA ITEM 19

Statement by the delegation of the Democratic People's Republic of Korea

"Firstly, regarding the UN Security Council Resolutions addressed in the document, those are inhumane resolutions which have blockaded all sections including the areas directly related to the livelihood of civilian population as well as shipping industry of our country. Actually, the resolutions have been affecting not only ensuring safety, security and marine environmental protection but also implementation of IMO instruments of the DPR Korea.

For example, since November 2017, the Kemilinks Communication Company has suspended its LRIT communication service to the DPR Korea flagged vessels under the instruction of its Government for implementation of UN secretary council resolutions against the DPR Korea. As a result, the DPR Korea has become unable to implement LRIT and currently failed to ensure safety, security and search and rescue of the DPR Korea flagged vessels as well as marine environmental protection. In addition, the UNSC resolutions have been affecting our country's capacity building for implementation of the IMO instruments as well as its commitment as a member state of the IMO. In particular, the DPR Korea seafarers' rights to serve on board vessel have been infringed by the inhumane UNSC resolutions against the DPR Korea. In this connection, this delegation insists that the UNSC resolutions are barriers to ensuring safety and security of the DPR Korea flagged vessels and implementation of the IMO instruments. The UN Security Council Resolutions mentioned in the document are not related with safety and security at sea. However, most of paragraphs in the document are addressing the political issue, like as implementation of the UN Security Council Resolutions against the DPR Korea, reproducing the contents of the Resolutions.

In addition, the document including draft circular annexed to it is addressing the navigational warning issue which has no connection with the raised issue. From the aforementioned, it could be concluded that the document has been prepared and submitted mainly for their political purpose against the DPR Korea rather than genuinely for the safety and security at sea. It is unquestionable that the document is beyond the mandate of the IMO including Maritime Safety Committee. And, such a discussion as dealing with political issue will decrease the efficiency of Maritime Safety Committee to discuss the urgent and serious issues related to safety and security at sea.

Furthermore, this delegation is of opinion that the draft circular suggested in the document is inappropriate and meaningless to be issued as a MSC circular, and it will result in confusion and complexity of the member states, because of its political feature and unreasonableness. We celebrated 70th anniversary of the IMO in September and commemorated 100th session of the Maritime Safety Committee this week.

Recalling the history of the IMO and Maritime Safety Committee, the DPR Korea strongly suggests that the IMO forum should not be used for the political purpose of specific countries against any member state beyond its mandate, and this document should not be approved by the Committee, because that will affect reputation and history of the IMO as a specialised technical and regulatory agency with impartiality."

Statement by the delegation of Indonesia

"With regard to document MSC 100/19/6 submitted by China, we want to appreciate their intention to promote improvement on safety standards of domestic passenger ships by proposing some possible measures. Indonesia take note on the proposal.

However, in that regard, Indonesia would like to underline the fact that geographical condition of countries will impact on how countries see, manage, and develop their national transportation. A continental state will have different challenges with archipelagic or island States. For example, Indonesia and other archipelagic and island States will always consider their domestic passenger ships as blood vein of the nations' livelihood. Those ships connecting thousands of inhabitant islands. They loop the archipelago not only to bridge the islands, but also circulating families, workers, and goods that run the economy of the nations. Against this backdrop, Indonesia has been continuously developing its regulations, infrastructure, and safety of its domestic passenger ships. Indonesia believes, any disruption to the ships, will also impact to the livelihood of the nations. In that spirit, Indonesia, up to present has developed 21 shipyard that already produced hundreds of ships in accordance with international standard. Some of those ships were exported to countries all around the world. Indonesia noted that there were several accidents happened in Indonesian waters involving our ferries. In that regard, however, Indonesia has taken strong measures to continuously improve safety of our ferries, including recently the government of Indonesia adopted 21 national measures to ensure safety in domestic passenger ships. In line with that, Indonesia also would like to inform that, thanks to IMO, in last week, 25-30 November 2018, Indonesia and IMO conduct Hazid scoping exercise on domestic ferry safety to identify the safety issues pertaining to passenger ships on non-international voyage in Indonesia.

In the regional and international level, Indonesia also has taken a strong leadership in this matter. In ASEAN regional, an MoU on the improvement of Safety Standard and Inspection for Non-Convention Ships (NCS) had been signed by the Ministers of Transport of ASEAN Member States. A long side with MoU, the Guidelines for Safety Standards for Non-Convention Ships also have been adopted. Both, the MoU and Guidelines will serve as a reference for cooperation among ASEAN member states in working on improvement of safety standards and Inspections of NCS. This delegation would like also to inform the meeting that ASEAN China workshop on Safety of Navigation and Communication in the South China Sea has successfully held in Manado, Indonesia, from 30th of November to 1st of December 2018. significant issues and challenges have been discussed on related matters concern and relevant views, approaches and significant proposals were introduced. Indonesia as host is very much appreciated for the active participation.

On behalf of the Government of the Republic of Indonesia, this delegation would also like to extend our appreciations to IMO secretariat in particular on the present and briefings given towards the representative from the Technical Cooperation Division. Some of the highlights are programs and initiatives were introduced that would reflect the enhancement of both safety of navigation and marine environmental protection towards lesson learned and best practices to be adapted and cooperated further. In the international level, Indonesia has the honour to inform this committee that in Manado City, Indonesia on 1 November 2018, 21 countries, led by Indonesia, had agreed to form Archipelagic and Island States (AIS) forum. The forum shall become a platform for archipelagic and island States to develop concrete cooperation. Improving capabilities to develop national connectivity infrastructure is one of the main AIS Forum future cooperation. Through AIS Forum, we believe that archipelagic and island States will have a platform to work together to become maritime powerhouses which includes not only natural requirement as a coastal states link directly to the oceans but also the ability to advance in maritime trade activity through ownership of sufficient vessels, world best port service capability, world best national ferries services, advanced shipping industry, strong seafaring culture, active participation in competent maritime organization, sustainable use of marine resources, robust maritime diplomacy, and strong maritime defence capability.

Under the said platform, Indonesia is happy to announce that Indonesia, in the 2nd Semester of 2019 will be hosting an international seminar on safety standards of domestic passenger ships. Hopefully the result of the Seminar will be reported to the Assembly meeting in 2019. Indonesia is looking forward to work closely with IMO and other member states."