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FAL.5/Circ.44
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IMO COMPENDIUM ON FACILITATION AND ELECTRONIC BUSINESS

1 The Facilitation Committee, at its forty-fifth session (1 to 7 June 2021)], approved the new version of the *IMO Compendium on facilitation and electronic business*, as set out in the annex.

2 The Committee recalled that this new version of the IMO Compendium refers to the data elements related to the FAL Convention, as well as data sets beyond those mandated by the FAL Convention.

3 Member States are invited to bring the IMO Compendium to the attention of all parties concerned.

4 Member States and international organizations are also invited to bring to the attention of the Committee, at the earliest opportunity, the results of the experience gained from the use of the Compendium for consideration of action to be taken.

5 This circular revokes FAL.5/Circ.43 issued on 23 October 2020.

6 The IMO Compendium is available on Excel and HTML formats* and includes the overview of changes from the last version.

* The Excel and HTML formats of the IMO Compendium are available from the IMO website ([The IMO Compendium on Facilitation and Electronic Business](#))

ANNEX

THE IMO COMPENDIUM FACILITATION AND ELECTRONIC BUSINESS

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Section 1 Purpose and use

A Purpose

1.1 The Compendium on Facilitation and Electronic Business (Compendium) serves as a reference manual for creating and harmonizing the systems needed to support transmission, receipt and response of information required for the arrival, stay and departure of the ship, persons and cargo via electronic data exchange. It addresses the following declarations required by the annex to the Convention on Facilitation of International Maritime Traffic (FAL Convention):

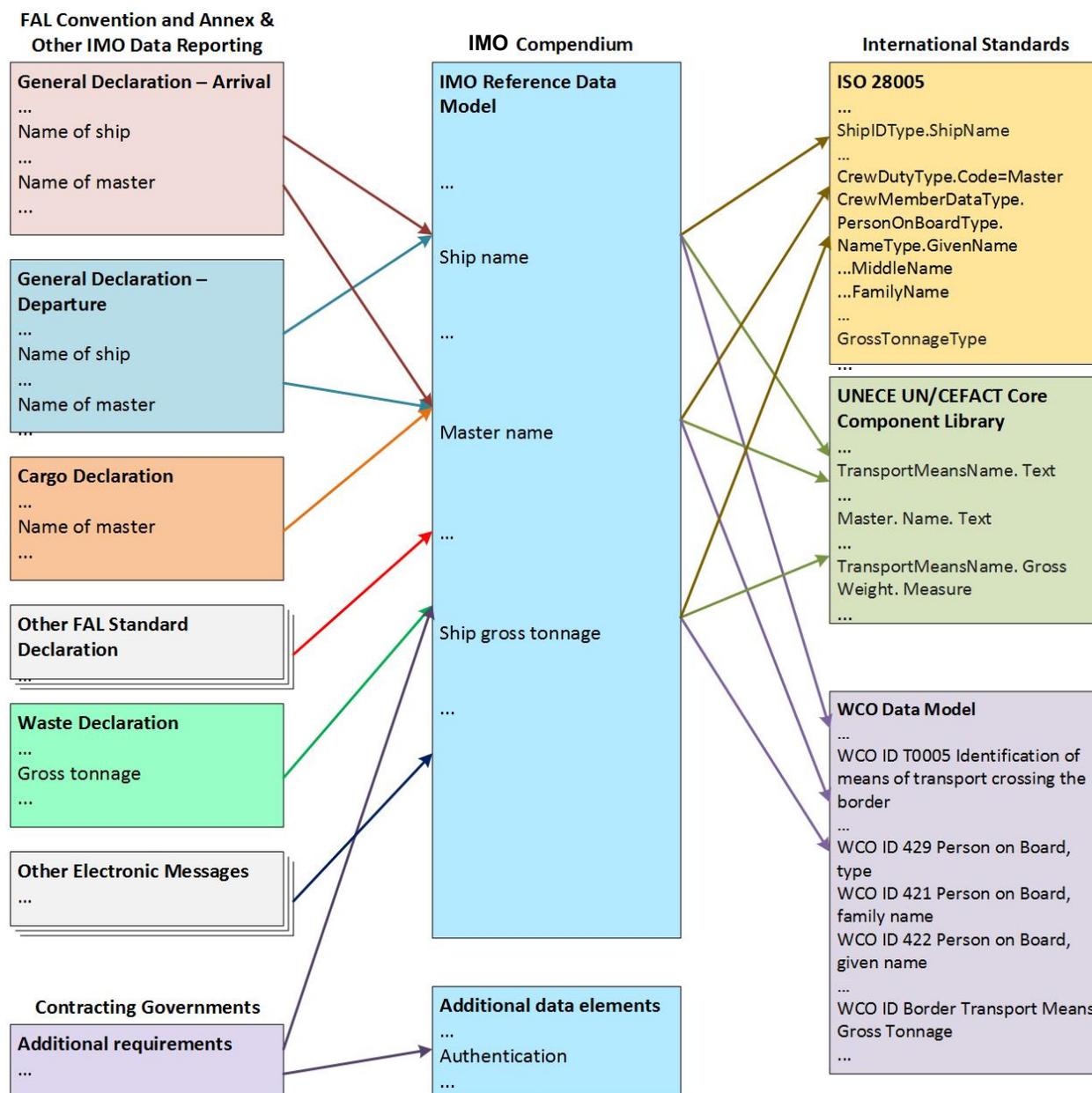
- .1 General Declaration;
- .2 Cargo Declaration;
- .3 Ship's Stores Declaration;
- .4 Crew's Effects Declaration;
- .5 Crew List;
- .6 Passenger List;
- .7 Dangerous Goods Manifest;
- .8 Security-related information as required under SOLAS regulation XI-2/9.2.2;
- .9 Advance Notification for Waste Delivery to Port Reception Facilities; and
- .10 Maritime Declaration of Health.

1.2 The Compendium, extended by FAL 42 to include additional e-business solutions beyond those related to the FAL Convention, also addresses port logistics operational data for digital exchange between the port and the ship.

1.3 In the Compendium, the Facilitation Committee constructs the IMO Data Set (see section 2) to identify and define all the data elements related to reporting information requirements and the IMO Reference Data Model (see section 3) to establish the underlying hierarchical data structure used in electronic data exchange.

1.4 The IMO Data Set combined with the IMO Reference Data Model promote harmonization among the relevant international standards used for electronic business from the World Customs Organization (WCO), the United Nations Economic Commission for Europe (UNECE), the International Organization for Standardization (ISO TC 8) and other organizations. Figure 1 illustrates the flow of reporting data and the interaction of the international standards. Harmonization stimulates implementation of the single window concept as a high-level priority of the Organization and supports interoperability among single window systems. Single window processes enhance efficient international trade by simplifying communications among stakeholders and creating an electronic information environment that promotes accountability, transparency and informed decision-making.

Figure 1: Relationships among the FAL Convention, the IMO Compendium and International Standards



1.5 The Facilitation Committee standardizes the nature and scope of information to be submitted and processed as required by the annex to the Convention on Facilitation of International Maritime Traffic, 1965 (Convention). The Maritime Safety Committee (MSC) standardizes the security-related information submitted as required in SOLAS regulation XI-2/9.2.2 through MSC/Circ.1305, *Revised guidance to masters, companies and duly authorized officers on the requirements relating to the submission of security-related information prior to the entry of a ship into port*. The Marine Environmental Protection Committee (MEPC) standardizes the information submitted for waste delivery in port through MEPC.1/Circ.834/Rev.1, appendix 2, *Standard format of the Advance Notification Form for waste delivery to port reception facilities*. The Compendium is a tool for efficient, electronic transmission of all this vital information in a way intended to minimize the burden on shippers, crews, agents, port authorities and other stakeholders.

1.6 Annexes 1 to 3 explain the mapping of the IMO Data Set and IMO Reference Data Model to the relevant international standards.

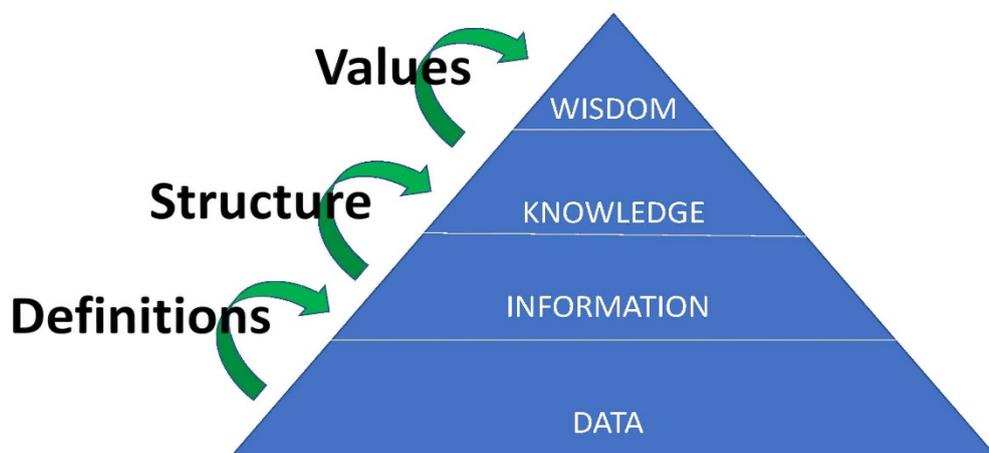
1.7 The Compendium does not serve as a reference manual for transmission and processing of ship, person and cargo information by facsimile, email, and other means independent from the common standard data models used for electronic business.

B Electronic data submission and collection

1.8 The Organization identifies electronic data exchange as the preferred method of communication through the annex to the Convention. This Compendium promotes and supports electronic data exchange conducted using standardized data models and their implementation guidelines.

1.9 Electronic business has clear, quantifiable benefits over a paper-based environment in most cases. These globally accepted benefits led to the requirements for electronic reporting in the annex to the Convention. The holistic value of electronic data exchange is an equally important part of the philosophy promoted in this Compendium. The Data-Knowledge-Information-Wisdom (DIKW) pyramid¹ demonstrates this concept. Figure 2 illustrates how the data submitted through electronic data exchange leads to wisdom, defined for the purposes of this Compendium as *the willingness and ability to take the most appropriate action based on what is known*. That is, data leads to good decision-making by the port authority, Administration or other organization that receives the data. This decision-making could relate to a range of topics beyond the usage in the Convention, such as targeting ships for port State control examinations, assigning resources, identifying trade trends, and developing public policy.

Figure 2: DIKW Pyramid



1.10 Figure 2 illustrates that applying definitions to data gives meaning and transforms data into information. Section 2 of this Compendium standardizes definitions of the data elements for the purpose of electronic data exchange. Similarly, applying structures reveals logical relationships and transforms information into knowledge. Section 3 of this Compendium standardizes the structure of the data elements. Lastly, values transform knowledge into the wisdom used to identify the most appropriate actions that support the data recipient's goals.

¹ Ackoff, R. (1989). *From data to wisdom*. Journal of Applied Systems Analysis, 16, 3-9.

1.11 Common definitions promote harmonization, ordering information with common structures promotes interoperability and directing knowledge with common values creates communities with shared goals. These communities might be the agencies in an Administration, collections of ports, or regional and international groups. Harmonization, interoperability and community are crucial to the Organization's goals of leveraging technology, minimizing burdens on mariners, promoting implementation of the single window and helping stakeholders meet international standards.

1.12 A paper-based communications system could accomplish all the processes described above. However, systems for electronic data exchange are inherently more efficient, continue to evolve and have a much greater potential for facilitation opportunities. Through this Compendium, the Organization seeks to facilitate trade by helping standardize electronic business processes used to comply with the Organization's data submission requirements while recognizing the responsibility to balance those requirements with the benefits they provide.

C Information security

1.13 Ship reporting necessitates electronic transmission of sensitive, private and proprietary information including, but not limited to, ship location and destination, cargo types and amounts, passenger names and identity data, and security-related information. This type of information could provide valuable intelligence for unauthorized persons seeking to conduct illegal or malicious acts.

1.14 Companies, ships' crews, agents, and port and Administration officials share the responsibilities to protect ship reporting information described in this Compendium. All persons involved in transmitting, receiving, responding, storing, analysing and protecting ship reporting information should be fluent in the information security and cyber-risk management techniques and requirements in, but not limited to:

- .1 national laws and regulations;
- .2 International Convention for the Safety of Life at Sea, as amended;
- .3 International Ship and Port Facility Security Code;
- .4 IMO MSC-FAL.1/Circ.1 – Securing and Facilitating International Trade;
- .5 IMO MSC-FAL.1/Circ.3 – Guidelines on Maritime Cyber Risk Management;
and
- .6 accepted national and international industry standards on information security.²

² Such as the World Customs Organization SAFE Framework of Standards and the International Organization for Standardization 28000 series of standards.

Section 2 The IMO Data Set

A *Standard IMO data elements*

2.1 The **IMO Data Set** shows the Organization's definitions for the data elements of the IMO Data Set. The Organization documents these definitions in the Compendium to promote harmonization among different data models and to help ensure accurate transmission, receipt and response of electronic data exchange. Each data element receives a unique identifier for reference purposes. In addition, the IMO Data Set shows the correlation between each data element and the legacy paper forms used to record the information in paragraph 1.1.4 with a notation of the relevant form cell number.

2.2 Mapping legacy paper forms to an electronic data exchange environment necessitates a number of decisions to represent and utilize the data most efficiently. For example, in the legacy paper forms, designed for completion by hand, several data elements often populate a single cell, such as the numerous characteristics or markings of a particular cargo. In the electronic environment, each data element is discriminated. In addition, paper forms do not accommodate the efficiency of using attributes to distinguish different types of similar data. For instance, a person's possible attributes include agent, crewmember, security officer or passenger. Furthermore, repeated information, such as the IMO number, ship name, ship type, and arrival time and date, can be stored and repeated in electronic data exchange, whereas it must be re-entered in each case on a paper form.

2.3 The IMO Data Set includes some data elements not found on the legacy paper forms but which are required for electronic data exchange, such as the message header date-time stamp, unique identifiers and other requirements for message tracking and machine-to-machine communications.

B *Using the IMO data set*

2.4 The *Change Indicator* column shows the status of the data element in that row to help maintain the history of changes to the data set. The change indicator meanings are:

- .1 a plus sign (+) for an addition to the data set since the last edition;
- .2 a minus sign (-) for a deletion from the data set since the last edition; and
- .3 an asterisk sign (*) for changes to a data element since the last edition.

2.5 The *Data Number* column shows the unique number assigned to each data element for reference. The "IMO" prefix identifies the source of the data element and distinguishes it from other data model elements.

2.6 The *Data Element* column shows the standard name of each data element.

2.7 The *Definition* column shows the standard definition of each data element. Note, these definitions seek to satisfy technical details. Therefore, instead of the traditional definition, some definitions refer to the information location so that the system or software designer can determine the specific format detail requirements.

2.8 The *Correlation to IMO Standard Reporting* columns show the location of each data element in the traditional paper versions of the FAL declarations by cell number or other reference. An "X" in this column indicates a data element not described in the annex to the Convention or other sources but commonly used in electronic data exchange. Dark grey cell shading identifies a data element needed to transmit electronic messages but not used in the traditional paper versions of the FAL declarations. Light grey cell shading identifies a data element not included in the data structure shown in section 3 because it derives from a combination of other data elements.

2.9 The *Format* column shows the required format of each data element for electronic data exchange purposes.

2.10 The format indicator meanings are:

- a alphabetic characters
- n numeric characters
- an alphanumeric characters
- a3 3 alphabetic characters, fixed length
- n3 3 numeric characters, fixed length
- an3 3 alphanumeric characters, fixed length
- a..3 up to 3 alphabetic characters
- n..3 up to 3 numeric characters
- an..3 up to 3 alphanumeric characters
- n..11,3 up to 11 numeric characters of which 3 positions for a decimal

Examples for a n..11,3 type:

- 12345678.123 (Valid)
- 123456789.123 (Invalid – too many digits before decimal point and too many digits in total)
- 12345678.1234 (Invalid – too many digits after decimal point and too many digits in total)

Numerical fields should be either a cardinal value (integer value) or a decimal value. The decimal separator is the decimal point "." and no other symbols are permitted as a decimal separator. The decimal notation (with the decimal point) should only be used to indicate required precision. Triad separators, such as a comma, should not be used.

2.11 The *Code Lists* column identifies the source of specific standardized codes for the data element in that row. For example, ISO standard 3166-1, Codes for the representation of names of countries and their subdivisions, contains the internationally agreed list of two-character country codes. In some cases, cells in this column contain the phrase "To be defined" to identify a standardized code list that is envisioned in future use. The Code Lists under the maintenance responsibility of IMO are set out in annex 4.

2.12 The *Business Rule* column identifies recommended procedures for satisfying specific data element formats and requirements by referencing a relevant business rule listed in section 4.

2.13 The link https://www.unece.org/cefact/recommendations/rec_index.html leads to the list of a list of UNECE trade facilitation recommendations.

Section 3 The IMO Reference Data Model

A *The UML class diagram*

3.1 The [UML class diagram](#) shows the structure and relationships of the standard data elements. Please note that in the UML class diagram, the combination of the class name (in red) plus the attribute name (in green) provides the name to link with the IMO Data Set.

B *Data structure report*

3.2 The [data structure report](#) shows the summary report of the reference data model structure.

Annex 1: **World Customs Organization (WCO) Data Mapping**

(To be developed)

Annex 2: **United Nations Economic Commission for Europe (UNECE) Data Mapping**

XLS Guideline Structure:

[https://service.unece.org/trade/uncefact/publication/Transport and Logistics/MMT IMO FAL Guide_UNECE/XLS/GuidelineStructure.xlsx](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/MMT%20IMO%20FAL%20Guide_UNECE/XLS/GuidelineStructure.xlsx)

XSD Schema:

[https://service.unece.org/trade/uncefact/publication/Transport and Logistics/MMT IMO FAL Guide_UNECE/XSD/Schema.zip](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/MMT%20IMO%20FAL%20Guide_UNECE/XSD/Schema.zip)

HTML Guideline:

[https://service.unece.org/trade/uncefact/publication/Transport and Logistics/MMT IMO FAL Guide_UNECE/HTML/index.htm](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/MMT%20IMO%20FAL%20Guide_UNECE/HTML/index.htm)

Executive Guide:

https://www.unece.org/fileadmin/DAM/cefact/GuidanceMaterials/ExecutiveGuides/IMO-eFAL-ExecGuide_Eng.pdf

Annex 3: **International Organization for Standardization (ISO) Data Mapping**

<https://standards.iso.org/iso/28005/-2/ed-2/en/>

Annex 4

Code lists to be maintained by IMO

Section 1 Code List for IMO0049 (*Dangerous goods IMO hazard class*) and IMO0058 (*Dangerous goods subsidiary risks, coded*)

The list for **Dangerous Goods Hazard Class Codes** is defined as follows:

Code	Item	Regulation
P	Product is included in code because of its pollution hazards	IBC
S	Product is included in code because of its safety hazards	IBC
S/P	Product is included in code because of its safety and pollution hazards	IBC
N.A.	Not Applicable	IBC
A	Cargo which may liquefy	IMSBC
A AND B	Cargoes which may liquefy and with chemical hazards	IMSBC
B	Cargoes with chemical hazards	IMSBC
1	Explosives	IMDG
1.1	Substances and articles which have a mass explosion hazard	IMDG
1.1A	Substances and articles which have a mass explosion hazard, compatibility group A	IMDG
1.1B	Substances and articles which have a mass explosion hazard, compatibility group B	IMDG
1.1C	Substances and articles which have a mass explosion hazard, compatibility group C	IMDG
1.1D	Substances and articles which have a mass explosion hazard, compatibility group D	IMDG
1.1E	Substances and articles which have a mass explosion hazard, compatibility group E	IMDG
1.1F	Substances and articles which have a mass explosion hazard, compatibility group F	IMDG
1.1G	Substances and articles which have a mass explosion hazard, compatibility group G	IMDG
1.1J	Substances and articles which have a mass explosion hazard, compatibility group J	IMDG
1.1L	Substances and articles which have a mass explosion hazard, compatibility group L	IMDG
1.2	Substances and articles which have a projection hazard but not a mass explosion hazard	IMDG
1.2B	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group B	IMDG
1.2C	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group C	IMDG
1.2D	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group D	IMDG
1.2E	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group E	IMDG
1.2F	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group F	IMDG

Code	Item	Regulation
1.2G	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group G	IMDG
1.2H	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group H	IMDG
1.2J	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group J	IMDG
1.2K	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group K	IMDG
1.2L	Substances and articles which have a projection hazard but not a mass explosion hazard, compatibility group L	IMDG
1.3	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard	IMDG
1.3C	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category C	IMDG
1.3F	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category F	IMDG
1.3G	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category G	IMDG
1.3H	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category H	IMDG
1.3J	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category J	IMDG
1.3K	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category K	IMDG
1.3L	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard, category L	IMDG
1.4	Substances and articles which present no significant hazard	IMDG
1.4B	Substances and articles which present no significant hazard, compatibility group B	IMDG
1.4C	Substances and articles which present no significant hazard, compatibility group C	IMDG
1.4D	Substances and articles which present no significant hazard, compatibility group D	IMDG
1.4E	Substances and articles which present no significant hazard, compatibility group E	IMDG
1.4F	Substances and articles which present no significant hazard, compatibility group F	IMDG
1.4G	Substances and articles which present no significant hazard, compatibility group G	IMDG
1.4S	Substances and articles which present no significant hazard, compatibility group S	IMDG
1.5	Very insensitive substances which have a mass explosion hazard	IMDG

Code	Item	Regulation
1.5D	Very insensitive substances which have a mass explosion hazard, compatibility group D	IMDG
1.6	Extremely insensitive articles which do not have a mass explosion hazard	IMDG
1.6N	Extremely insensitive articles which do not have a mass explosion hazard compatibility group N	IMDG
2	Gases	IMDG
2.1	Flammable gases	IMDG
2.2	Non-flammable, non-toxic gases	IMDG
2.3	Toxic gases	IMDG
3	Flammable liquids	IMDG
4	Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases	IMDG
4.1	Flammable solids, self-reactive substances and desensitized explosives	IMDG
4.2	Substances liable to spontaneous combustion	IMDG
4.3	Substances which, in contact with water, emit flammable gases	IMDG
5	Oxidizing substances and organic peroxides	IMDG
5.1	Oxidizing substances	IMDG
5.2	Organic peroxides	IMDG
6	Toxic and infectious substances	IMDG
6.1	Toxic substances	IMDG
6.2	Infectious substances	IMDG
7	Radioactive material	IMDG
8	Corrosive substances	IMDG
9	Miscellaneous dangerous substances and articles	IMDG

Section 2 Code List for IMO0051 (Dangerous goods marine pollutant type, coded)

The following table lists the code values and description for Dangerous Goods Marine Pollutant Type codes.

Code	Item	Regulation
P	Marine pollutant	IMDG
X	Category X	IBC
Y	Category Y	IBC
Z	Category Z	IBC
O	Other Substances (OS)	IBC

Section 3 Code List for IMO0183 (Waste type, coded)

The following table lists the code values and description for Waste Type codes as needed by MEPC.1/Circ.834/Rev.1. The codes are constructed with the MARPOL Annex number as the first digit, followed by a two-digit serial number. Other is assigned the code 999.

Code	Item
MARPOL Annex I – related	
101	Oily bilge water
102	Oily residues (sludge)
103	Oily tank washings (slops)
104	Dirty ballast water
105	Scale and sludge from tank cleaning
999	Other (please specify)
MARPOL Annex II – related	
201	Category X substance – Indicate the proper shipping name of the NLS involved
202	Category Y substance – Indicate the proper shipping name of the NLS involved
203	Category Z substance – Indicate the proper shipping name of the NLS involved
204	OS – other substances – Indicate the proper shipping name of the NLS involved
MARPOL Annex IV – related	
401	Sewage
MARPOL Annex V – related	
501	A. Plastics
502	B. Food wastes
503	C. Domestic wastes
504	D. Cooking oil
505	E. Incinerator ashes
506	F. Operational wastes
507	G. Animal carcasses
508	H. Fishing gear
509	I. E-waste
510	J. Cargo residues (non-HME) – Indicate the proper shipping name of the dry cargo
511	K. Cargo residues (HME) – Indicate the proper shipping name of the dry cargo
MARPOL Annex VI – related	
601	Ozone-depleting substances and equipment containing such substances
602	Exhaust gas-cleaning residues

Section 4 Code List for IMO0069 (Reason why ship has no valid ISSC or interim ISSC, coded)

The code list to indicate the reason why a ship has no valid ISSC or interim ISSC is based on the ISPS-Code International code for the security of ships and of port facilities (Part A, Section 19 of the Code/MS.C.196(80)).

The codes are listed in the following table:

Code	Item
101	The required intermediate and renewal verifications have not taken place
102	It has not been endorsed following an intermediate verification
103	A new shipping company takes over the operation of the ship
104	The ship changes its flag
105	The certificate is not issued in English, Spanish or French, and there is no translation into one of those languages

Section 5 Code List for IMO0150 (Ship security measures, coded) and IMO0133 (Ship additional security measures, coded)

The code list to represent a description of the security measures taken during ship-to-ship activity by the ship in lieu of the ship security procedures (IMO0150), or taken as special or additional security measures applied in lieu of those in the security plan (IMO0133), is listed in the following:

Code	Description
101	Ensure the performance of all security duties
102	Monitor restricted areas to ensure that only authorized personnel have access
103	Control access to port facility and ships
104	Monitor the port facility, including berthing areas and areas surrounding the ship
105	Handle cargo and unaccompanied baggage
106	Monitor the delivery of ships stores
107	Control the embarkation of persons and their effects
108	Ensure that security communications are readily available between the ship and the port facility

Section 6 Code List for IMO0149 (Ship security level in a previous port, coded) and IMO0137 (Ship current security level, coded)

The code list for the possible ship security levels as described by the ISPS-Code International code for the security of ships and of port facilities (MSC.196(80)), is as follows:

Code	Description
SL1	Security level 1
SL2	Security level 2
SL3	Security level 3

Section 7 Code List for IMO0274 (Ship satellite service provider, coded)

The code list for *Ship satellite service provider, coded* is defined as follows:

Code	Item
01	INMARSAT PLC
02	IRIDIUM SATELLITE LLC

APPENDIX

Amendments to the previous version of the IMO Compendium (FAL.5/Circ.43)

The changes made in respect to previous versions are set out in the [overview of changes](#).
