ST. VINCENT AND THE GRENADINES

MARITIME ADMINISTRATION

CIRCULAR N° GEN 024 - Rev.3

SHIP RECYCLING

THE HONG KONG INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS (HONG KONG INTERNATIONAL CONVENTION), THE EU REGULATION No 1257/2013 (EU SRR) AND EUROPEAN WASTE SHIPMENT REGULATION NO. 1013/2006

TO:	**SHIP OWNERS/SHIP OPERATORS/MANAGERS, MASTERS AND RECOGNIZED ORGANIZATIONS**
APPLICABLE TO:	All ships of 500 GT and more
EFFECTIVE AS FROM:	EU SSR - 31 December 2020 Hong Kong International Convention - 26 June 2025

Date: 07 November 2024

1. The primary regulations impacting the inventory of hazardous materials are as follows:

a) The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 will enter into force on 26 June 2025, and

b) The European Regulation No. 1257/2013 on Ship Recycling (EU SRR), having already entered into force in December 2016, regulates the safe and environmentally sound recycling of EU flagged vessels but also expanding to cover non-EU flagged vessels of their last voyage from EU waters.

2. The Hong Kong International Convention covers the design, construction, operation and preparation of ships, to facilitate sustainable ship recycling without compromising safety and operational efficiency. EU SRR closely follows the text of Hong Kong International Convention and is designed to facilitate early adoption of the Convention.

3. The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships**.**

- Each ship of 500 GT and above shall have a certified Inventory of Hazardous Materials (IHM)
- Ship Recycling Facilities (SRF) shall be authorized by their competent authorities and shall only accept ships that comply with the Hong Kong International Convention requirements

Ships in service shall comply with this requirement by 26 June 2030, or, before going to recycling, if this is earlier.

New ships contracted for construction on or after 26 June 2025, shall comply with this requirement upon delivery.

4. This Administration recommends the early preparation of the IHM in order to smoothly implement the requirements of the Convention after its entry into force. IHM Part I should be completed taking into account the relevant IMO guidelines and it should be verified by Recognized Organizations to this Administration.

4.1 The IHM consists of three parts:

- Part I: Hazardous materials contained in the ship's structure and equipment
- Part II: Operationally generated wastes
- Part III: Stores

The IHM Part I is prepared either during the construction of the ship or while the vessel is in operation. IHM Part II and III shall be prepared by the shipowner once the decision is given to send the ship for recycling.

4.2 The Hong Kong International Convention and the IMO Guidelines for Inventory Development (Resolution MEPC.379(80)) for the maintenance and management of IHM refer to the following key points:

- The Hong Kong International Convention states that Part I of the Inventory of Hazardous Materials shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing Hazardous Materials listed in Appendix 2 and relevant changes in ship structure and equipment, taking into account the guidelines developed by the Organization.

- Resolution MEPC.379(80) Annex, 2023 Guidelines for the development of the inventory of hazardous materials, requires that Part I of the Inventory should be appropriately maintained and updated, especially after any repair or conversion or sale of a ship. It also requires that Part I of the Inventory should be appropriately maintained and updated, especially after any repair or conversion or sale of a ship. It should belong to the ship and the continuity and conformity of the information it contains should be confirmed, especially if the flag, owner or operator of the ship changes. In addition, Ship Owners should implement the following measures in order to ensure the conformity of Part I of the Inventory:
  - to designate a person as responsible for maintaining and updating the Inventory (the designated person may be employed ashore or on board);
  - the designated person, in order to implement paragraph 4.3.2, should establish and supervise a system to ensure the necessary updating of the Inventory in the event of new installation;
  - to maintain the Inventory including dates of changes or new deleted entries and the signature of the designated person; and
  - to provide related documents as required for the survey or sale of the ship

5. Saint Vincent and the Grenadines is not a signatory to the Hong Kong International Convention. However, its Recognized Organizations are authorized to survey vessels and issue a Statement of Compliance on its behalf when requested by the Ship Owners.

6. Essential to the implementation scheme of the Hong Kong Convention and the EU SRR is the development and maintenance of a document referred to as the Inventory IHM, listing the type and amount of hazardous materials and their location on board. An IHM must be thorough and ship specific and updated throughout the life of a vessel to support an effective plan to discard hazardous materials.

7. The EU Regulation No 1257/2013 on Ship Recycling (EU SRR)

8. EU adopted Regulation (EU) No. 1257/2013 which brings into force an early implementation of the requirements of the Hong Kong Convention for the development and maintaining IHM, including requirements for foreign or non-EU flagged ships.

The EU SRR will affect the owners of non-EU-flagged vessels calling at EU ports or anchorage earlier than the Hong Kong Convention.

9. This requires a foreign or **non-EU-flagged vessels** of 500 GT and more, including submersibles, Floating crafts, Floating platforms, Self-elevating platforms, Floating storage units (FSUs), and Floating Production Storage and Offloading Units (FPSOs), including a vessel stripped of equipment or being towed, **calling at EU ports or anchorages, to have onboard a verified IHM, that identifies at least the hazardous materials required by the EU Regulation**, **and a Statement of Compliance at the earliest by 31 December 2020.**

10. It is important to note that, currently, any non-EU flagged vessel having a last voyage that either starts from an EU port, or transits through an EU port, is subject to EU Waste Shipment Regulation (and not the EU SRR). Therefore owners are advised to contact relevant EU port authorities well in advance of the last voyage their vessel for further information.

11. Ship Owners/ Ship Operators/Managers and Masters are required to take note of the above. It is strongly recommended that owners and operators of existing vessels with IHMs start planning to comply with EU SRR well ahead of **December 2020** in order to avoid delays.

12. Please find annexed "Guidelines on the enforcement of obligations under the EU Ship Recycling Regulation relating to the Inventory of Hazardous Materials of vessels operating in European waters" dated 20 October 2020 which is self explanatory. This Administration hereby highlights that it will be up to the PSCOs to decide whether they accept the evidence provided or not in case of non-compliance with the EU Regulation as of 1 January 2021. This Administration is not able to issue any type of extension from application of EU SRR requirements to the ships.

13. Recognized Organizations to this Administration are authorized to survey the vessels in accordance with Article 12 paragraph 6 of Regulation (EU) 1257/2013 and to issue on SVG behalf the corresponding documents accordingly.
IHM should comply with the applicable requirements of Regulation (EU) 1257/2013 and it should be verified by Recognized Organizations to this Administration

Annexes to this circular:

- Hong Kong International Convention for the safe and environmentally sound recycling of ships, 2009
- Regulation (EU) No 1257/2013 of the European Parliament and of the Council
- Resolution MEPC.269(68) 2015 Guidelines for the development of the inventory of hazardous materials
- EMSA guidance on inventory of the hazardous materials
- Guidelines on the enforcement of obligations under the EU Ship Recycling Regulation relating to the Inventory of Hazardous Materials of vessels operating in European waters
- Resolution MEPC.379(80) IMO Guidelines for Inventory Development for the maintenance and management of IHM

Revision History: Rev 1; Paragraphs 2,3,4,6,7,8,9 and 10 have been revised
Rev 2: Paragraph 6 has been revised, paragraphs 12 and 13 and the Annexes have been added
Rev 3: Paragraph 1,3,4,5 and 6 have been revised and Resolution MEPC.379(80) has been added in the Annex

INTERNATIONAL MARITIME ORGANIZATION

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INTERNATIONAL CONFERENCE ON THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS
Agenda item 8

SR/CONF/45
19 May 2009
Original: ENGLISH

ADOPTION OF THE FINAL ACT AND ANY INSTRUMENTS, RECOMMENDATIONS AND RESOLUTIONS RESULTING FROM THE WORK OF THE CONFERENCE

HONG KONG INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS, 2009

Text adopted by the Conference

1 As a result of its deliberations, as recorded in the Record of Decisions of the Plenary (SR/CONF/RD/2) and the Final Act of the Conference (SR/CONF/46), the Conference adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009.

2 The above-mentioned Convention, as adopted by the Conference, is annexed hereto.

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ANNEX

HONG KONG INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS, 2009

THE PARTIES TO THIS CONVENTION,

NOTING the growing concerns about safety, health, the environment and welfare matters in the ship recycling industry,

RECOGNIZING that recycling of ships contributes to sustainable development and, as such, is the best option for ships that have reached the end of their operating life,

RECALLING resolution A.962(23), adopted by the Assembly of the International Maritime Organization (Guidelines on Ship Recycling); amendments to the Guidelines adopted by resolution A.980(24); Decision VI/24 of the Sixth Meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which adopted Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships; and the Guidelines approved by the 289th session of the Governing Body of the International Labour Office (Safety and Health in Shipbreaking: Guidelines for Asian countries and Turkey),

RECALLING ALSO resolution A.981(24), by which the Assembly of the International Maritime Organization requested the Organization's Marine Environment Protection Committee to develop a legally-binding instrument on ship recycling,

NOTING ALSO the role of the International Labour Organization in protecting the occupational safety and health of workers involved in ship recycling,

NOTING FURTHER the role of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in protecting human health and the environment against the adverse effects which may result from such wastes,

MINDFUL of the precautionary approach set out in Principle 15 of the Rio Declaration on Environment and Development and referred to in resolution MEPC.67(37), adopted by the Organization's Marine Environment Protection Committee on 15 September 1995,

MINDFUL ALSO of the need to promote the substitution of hazardous materials in the construction and maintenance of ships by less hazardous, or preferably, non-hazardous materials, without compromising the ships' safety, the safety and health of seafarers and the ships' operational efficiency,

RESOLVED to effectively address, in a legally-binding instrument, the environmental, occupational health and safety risks related to ship recycling, taking into account the particular characteristics of maritime transport and the need to secure the smooth withdrawal of ships that have reached the end of their operating lives,

CONSIDERING that these objectives may best be achieved by the conclusion of an International Convention for the Safe and Environmentally Sound Recycling of Ships,

HAVE AGREED as follows:

ARTICLE 1
General obligations

1 Each Party to this Convention undertakes to give full and complete effect to its provisions in order to prevent, reduce, minimize and, to the extent practicable, eliminate accidents, injuries and other adverse effects on human health and the environment caused by Ship Recycling, and enhance ship safety, protection of human health and the environment throughout a ship's operating life.

2 No provision of this Convention shall be interpreted as preventing a Party from taking, individually or jointly, more stringent measures consistent with international law, with respect to the safe and environmentally sound recycling of ships, in order to prevent, reduce or minimize any adverse effects on human health and the environment.

3 Parties shall endeavour to co-operate for the purpose of effective implementation of, compliance with and enforcement of this Convention.

4 The Parties undertake to encourage the continued development of technologies and practices which contribute to safe and environmentally sound Ship Recycling.

5 The Annex to this Convention forms an integral part of it. Unless expressly provided for otherwise, a reference to this Convention constitutes at the same time a reference to its Annex.

ARTICLE 2
Definitions

For the purposes of this Convention, unless expressly provided otherwise:

1 "Convention" means the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009.

2 "Administration" means the Government of the State whose flag the ship is entitled to fly, or under whose authority it is operating.

3 "Competent Authority(ies)" means a governmental authority or authorities designated by a Party as responsible, within specified geographical area(s) or area(s) of expertise, for duties related to Ship Recycling Facilities operating within the jurisdiction of that Party as specified in this Convention.

4 "Organization" means the International Maritime Organization.

5 "Secretary-General" means the Secretary-General of the Organization.

6 "Committee" means the Marine Environment Protection Committee of the Organization.

7 "Ship" means a vessel of any type whatsoever operating or having operated in the marine environment and includes submersibles, floating craft, floating platforms, self elevating platforms, Floating Storage Units (FSUs), and Floating Production Storage and Offloading Units (FPSOs), including a vessel stripped of equipment or being towed.

8 "Gross tonnage" means the gross tonnage (GT) calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurement of Ships, 1969, or any successor convention.

9 "Hazardous Material" means any material or substance which is liable to create hazards to human health and/or the environment.

10 "Ship Recycling" means the activity of complete or partial dismantling of a ship at a Ship Recycling Facility in order to recover components and materials for reprocessing and re-use, whilst taking care of hazardous and other materials, and includes associated operations such as storage and treatment of components and materials on site, but not their further processing or disposal in separate facilities.

11 "Ship Recycling Facility" means a defined area that is a site, yard or facility used for the recycling of ships.

12 "Recycling Company" means the owner of the Ship Recycling Facility or any other organization or person who has assumed the responsibility for operation of the Ship Recycling activity from the owner of the Ship Recycling Facility and who on assuming such responsibility has agreed to take over all duties and responsibilities imposed by this Convention.

ARTICLE 3
Application

1 Unless expressly provided otherwise in this Convention, this Convention shall apply to:

.1 ships entitled to fly the flag of a Party or operating under its authority;

.2 Ship Recycling Facilities operating under the jurisdiction of a Party.

2 This Convention shall not apply to any warships, naval auxiliary, or other ships owned or operated by a Party and used, for the time being, only on government non-commercial service. However, each Party shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent with this Convention, so far as is reasonable and practicable.

3 This Convention shall not apply to ships of less than 500 GT or to ships operating throughout their life only in waters subject to the sovereignty or jurisdiction of the State whose flag the ship is entitled to fly. However, each Party shall ensure, by the adoption of appropriate measures, that such ships act in a manner consistent with this Convention, so far as is reasonable and practicable.

4 With respect to ships entitled to fly the flag of non-Parties to this Convention, Parties shall apply the requirements of this Convention as may be necessary to ensure that no more favourable treatment is given to such ships.

ARTICLE 4
Controls related to Ship Recycling

1 Each Party shall require that ships entitled to fly its flag or operating under its authority comply with the requirements set forth in this Convention and shall take effective measures to ensure such compliance.

2 Each Party shall require that Ship Recycling Facilities under its jurisdiction comply with the requirements set forth in this Convention and shall take effective measures to ensure such compliance.

ARTICLE 5
Survey and certification of ships

Each Party shall ensure that ships flying its flag or operating under its authority and subject to survey and certification are surveyed and certified in accordance with the regulations in the Annex.

ARTICLE 6
Authorization of Ship Recycling Facilities

Each Party shall ensure that Ship Recycling Facilities that operate under its jurisdiction and that recycle ships to which this Convention applies, or ships treated similarly pursuant to Article 3.4 of this Convention, are authorized in accordance with the regulations in the Annex.

ARTICLE 7
Exchange of information

For the Ship Recycling Facilities authorized by a Party, such Party shall provide to the Organization, if requested, and to those Parties which request it, relevant information, in regard to this Convention, on which its decision for authorization was based. The information shall be exchanged in a swift and timely manner.

ARTICLE 8
Inspection of ships

1 A ship to which this Convention applies may, in any port or offshore terminal of another Party, be subject to inspection by officers duly authorized by that Party for the purpose of determining whether the ship is in compliance with this Convention. Except as provided in paragraph 2, any such inspection is limited to verifying that there is on board either an International Certificate on Inventory of Hazardous Materials or an International Ready for Recycling Certificate, which, if valid, shall be accepted.

2 Where a ship does not carry a valid certificate or there are clear grounds for believing that:

.1 the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate, and/or Part I of the Inventory of Hazardous Materials; or

.2 there is no procedure implemented on board the ship for the maintenance of Part I of the Inventory of Hazardous Materials;

a detailed inspection may be carried out taking into account guidelines developed by the Organization.

ARTICLE 9
Detection of violations

1 Parties shall co-operate in the detection of violations and the enforcement of the provisions of this Convention.

2 When there is sufficient evidence that a ship is operating, has operated or is about to operate in violation of any provision in this Convention, a Party holding the evidence may request an investigation of this ship when it enters the ports or offshore terminals under the jurisdiction of another Party. The report of such an investigation shall be sent to the Party requesting it, to the Administration of the ship concerned and to the Organization, so that action may be taken as appropriate.

3 If the ship is detected to be in violation of this Convention, the Party carrying out the inspection may take steps to warn, detain, dismiss, or exclude the ship from its ports. A Party taking such action shall immediately inform the Administration of the ship concerned and the Organization.

4 If a request for an investigation is received from any Party, together with sufficient evidence that a Ship Recycling Facility is operating, has operated or is about to operate in violation of any provision of this Convention, a Party should investigate this Ship Recycling Facility operating under its jurisdiction and make a report. The report of any such investigation shall be sent to the Party requesting it, including information on action taken or to be taken, if any, and to the Organization for appropriate action.

ARTICLE 10
Violations

1 Any violation of the requirements of this Convention shall be prohibited by national laws and:

.1 in the case of a ship, sanctions shall be established under the law of the Administration, wherever the violation occurs. If the Administration is informed of such a violation by a Party, it shall investigate the matter and may request the reporting Party to furnish additional evidence of the alleged violation. If the

Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken as soon as possible, in accordance with its law. The Administration shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken. If the Administration has not taken any action within one year after receiving the information, it shall inform the Party which reported the alleged violation, and the Organization, of the reasons why no action has been taken;

.2 in the case of a Ship Recycling Facility, sanctions shall be established under the law of the Party having jurisdiction over the Ship Recycling Facility. If the Party is informed of such a violation by another Party, it shall investigate the matter and may request the reporting Party to furnish additional evidence of the alleged violation. If the Party is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken as soon as possible, in accordance with its law. The Party shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken. If the Party has not taken any action within one year after receiving the information, it shall inform the Party which reported the alleged violation, and the Organization, of the reasons why no action has been taken.

2 Any violation of the requirements of this Convention within the jurisdiction of any Party shall be prohibited and sanctions shall be established under the law of that Party. Whenever such a violation occurs, that Party shall either:

.1 cause proceedings to be taken in accordance with its law; or

.2 furnish to the Administration of the ship such information and evidence as may be in its possession that a violation has occurred.

3 The sanctions provided for by the laws of a Party pursuant to this Article shall be adequate in severity to discourage violations of this Convention wherever they occur.

ARTICLE 11
Undue delay or detention of ships

1 All possible efforts shall be made to avoid a ship being unduly detained or delayed under Article 8, 9 or 10 of this Convention.

2 When a ship is unduly detained or delayed under Article 8, 9 or 10 of this Convention, it shall be entitled to compensation for any loss or damage suffered.

ARTICLE 12
Communication of information

Each Party shall report to the Organization and the Organization shall disseminate, as appropriate, the following information:

.1 a list of Ship Recycling Facilities authorized in accordance with this Convention and operating under the jurisdiction of that Party;

.2 contact details for the Competent Authority(ies), including a single contact point, for that Party;

.3 a list of the recognized organizations and nominated surveyors which are authorized to act on behalf of that Party in the administration of matters relating to the control of Ship Recycling in accordance with this Convention, and the specific responsibilities and conditions of the authority delegated to the recognized organizations or nominated surveyors;

.4 an annual list of ships flying the flag of that Party to which an International Ready for Recycling Certificate has been issued, including the name of the Recycling Company and location of the Ship Recycling Facility as shown on the certificate;

.5 an annual list of ships recycled within the jurisdiction of that Party;

.6 information concerning violations of this Convention; and

.7 actions taken towards ships and Ship Recycling Facilities under the jurisdiction of that Party.

ARTICLE 13
Technical assistance and co-operation

1 Parties undertake, directly or through the Organization and other international bodies, as appropriate, in respect of the safe and environmentally sound recycling of ships, to provide support for those Parties which request technical assistance:

.1 to train personnel;

.2 to ensure the availability of relevant technology, equipment and facilities;

.3 to initiate joint research and development programmes; and

.4 to undertake other actions aimed at the effective implementation of this Convention and of guidelines developed by the Organization related thereto.

2 Parties undertake to co-operate actively, subject to their national laws, regulations and policies, in the transfer of management systems and technology in respect of the safe and environmentally sound recycling of ships.

ARTICLE 14
Dispute settlement

Parties shall settle any dispute between them concerning the interpretation or application of this Convention by negotiation or any other peaceful means agreed upon by them, which may include enquiry, mediation, conciliation, arbitration, judicial settlement, or resort to regional agencies or arrangements.

ARTICLE 15
Relationship with international law and other international agreements

1 Nothing in this Convention shall prejudice the rights and obligations of any State under the United Nations Convention on the Law of the Sea, 1982, and under the customary international law of the sea.

2 Nothing in this Convention shall prejudice the rights and obligations of Parties under other relevant and applicable international agreements.

ARTICLE 16
Signature, ratification, acceptance, approval and accession

1 This Convention shall be open for signature by any State at the Headquarters of the Organization from 1 September 2009 to 31 August 2010 and shall thereafter remain open for accession by any State.

2 States may become Parties to this Convention by:

.1 signature not subject to ratification, acceptance, or approval; or

.2 signature subject to ratification, acceptance, or approval, followed by ratification, acceptance or approval; or

.3 accession.

3 Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General.

4 If a State comprises two or more territorial units in which different systems of law are applicable in relation to matters dealt with in this Convention, it may at the time of signature, ratification, acceptance, approval, or accession declare that this Convention shall extend to all its territorial units or only to one or more of them and may modify this declaration by submitting another declaration at any time.

5 A declaration under paragraph 4 shall be notified to the Secretary-General in writing and shall state expressly the territorial unit or units to which this Convention applies.

6 A State at the time it expresses its consent to be bound by this Convention shall declare whether it requires explicit or tacit approval of the Ship Recycling Plan before a ship may be recycled in its authorized Ship Recycling Facility(ies). This declaration may be revised thereafter by notification to the Secretary-General. Such revision shall specify the effective date of the revision.

ARTICLE 17
Entry into force

1 This Convention shall enter into force 24 months after the date on which the following conditions are met:

.1 not less than 15 States have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 16;

.2 the combined merchant fleets of the States mentioned in paragraph 1.1 constitute not less than 40 per cent of the gross tonnage of the world's merchant shipping; and

.3 the combined maximum annual ship recycling volume of the States mentioned in paragraph 1.1 during the preceding 10 years constitutes not less than 3 per cent of the gross tonnage of the combined merchant shipping of the same States.

2 For States which have deposited an instrument of ratification, acceptance, approval or accession in respect of this Convention after the requirements for entry into force thereof have been met, but prior to the date of entry into force, the ratification, acceptance, approval or accession shall take effect on the date of entry into force of this Convention, or three months after the date of deposit of the instrument, whichever is the later date.

3 Any instrument of ratification, acceptance, approval or accession deposited after the date on which this Convention enters into force shall take effect three months after the date of deposit.

4 After the date on which an amendment to this Convention is deemed to have been accepted under Article 18, any instrument of ratification, acceptance, approval or accession deposited shall apply to the Convention, as amended.

ARTICLE 18
Amendments

1 This Convention may be amended by either of the procedures specified in the following paragraphs.

2 Amendments after consideration within the Organization:

.1 Any Party may propose an amendment to this Convention. A proposed amendment shall be submitted to the Secretary-General, who shall then circulate it

to the Parties and Members of the Organization at least six months prior to its consideration.

.2 An amendment proposed and circulated as above shall be referred to the Committee for consideration. Parties, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Committee for consideration and adoption of the amendment.

.3 Amendments shall be adopted by a two-thirds majority of the Parties present and voting in the Committee, on condition that at least one-third of the Parties shall be present at the time of voting.

.4 Amendments adopted in accordance with subparagraph 3 shall be communicated by the Secretary-General to the Parties for acceptance.

.5 An amendment shall be deemed to have been accepted in the following circumstances:

.5.1 An amendment to an article of this Convention shall be deemed to have been accepted on the date on which two-thirds of the Parties have notified the Secretary-General of their acceptance of it.

.5.2 An amendment to the Annex shall be deemed to have been accepted at the end of a period to be determined by the Committee at the time of its adoption, which period shall not be less than ten months after the date of adoption. However, if by that date more than one-third of the Parties notify the Secretary-General that they object to the amendment, it shall be deemed not to have been accepted.

.6 An amendment shall enter into force under the following conditions:

.6.1 An amendment to an article of this Convention shall enter into force, for those Parties that have declared that they have accepted it, six months after the date on which it is deemed to have been accepted in accordance with subparagraph .5.1.

.6.2 An amendment to the Annex shall enter into force with respect to all Parties six months after the date on which it is deemed to have been accepted, except for any Party that has:

.6.2.1 notified its objection to the amendment in accordance with subparagraph .5.2 and that has not withdrawn such objection; or

.6.2.2 notified the Secretary-General, prior to the entry into force of such amendment, that the amendment shall enter into force for it only after a subsequent notification of its acceptance.

.6.3 A Party that has notified an objection under subparagraph .6.2.1 may subsequently notify the Secretary-General that it accepts the amendment. Such amendment shall enter into force for such Party six months after the

date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.

.6.4 If a Party that has made a notification referred to in subparagraph .6.2.2 notifies the Secretary-General of its acceptance with respect to an amendment, such amendment shall enter into force for such Party six months after the date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.

3 Amendment by a Conference:

.1 Upon the request of a Party concurred in by at least one-third of the Parties, the Organization shall convene a Conference of Parties to consider amendments to this Convention.

.2 An amendment adopted by such a Conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary-General to all Parties for acceptance.

.3 Unless the Conference decides otherwise, the amendment shall be deemed to have been accepted and shall enter into force in accordance with the procedures specified in paragraphs 2.5 and 2.6 respectively.

4 Any Party that has declined to accept an amendment to the Annex shall be treated as a non-Party only for the purpose of application of that amendment.

5 Any notification under this Article shall be made in writing to the Secretary-General.

6 The Secretary-General shall inform the Parties and Members of the Organization of:

.1 any amendment that enters into force and the date of its entry into force generally and for each Party; and

.2 any notification made under this Article.

ARTICLE 19
Denunciation

1 This Convention may be denounced by any Party at any time after the expiry of two years from the date on which this Convention enters into force for that Party.

2 Denunciation shall be effected by written notification to the Secretary-General, to take effect one year after receipt or such longer period as may be specified in that notification.

ARTICLE 20
Depositary

1 This Convention shall be deposited with the Secretary-General, who shall transmit certified copies of this Convention to all States which have signed this Convention or acceded thereto.

2 In addition to the functions specified elsewhere in this Convention, the Secretary-General shall:

.1 inform all States that have signed this Convention, or acceded thereto, of:

.1.1 each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;

.1.2 the date of entry into force of this Convention;

.1.3 the deposit of any instrument of denunciation from this Convention, together with the date on which it was received and the date on which the denunciation takes effect; and

.1.4 other declarations and notifications received pursuant to this Convention; and

.2 as soon as this Convention enters into force, transmit the text thereof to the Secretariat of the United Nations, for registration and publication in accordance with Article 102 of the Charter of the United Nations.

ARTICLE 21
Languages

This Convention is established in a single original in the Arabic, Chinese, English, French, Russian and Spanish languages, each text being equally authentic.

DONE AT HONG KONG, CHINA, this fifteenth day of May, two thousand and nine.

IN WITNESS WHEREOF the undersigned, being duly authorized by their respective Governments for that purpose, have signed this Convention.

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ANNEX

REGULATIONS FOR SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS

CHAPTER 1 – GENERAL PROVISIONS

Regulation 1 – Definitions

For the purposes of this Annex:

1 "Competent person" means a person with suitable qualifications, training, and sufficient knowledge, experience and skill, for the performance of the specific work. Specifically, a Competent person may be a trained worker or a managerial employee capable of recognizing and evaluating occupational hazards, risks, and employee exposure to potentially Hazardous Materials or unsafe conditions in a Ship Recycling Facility, and who is capable of specifying the necessary protection and precautions to be taken to eliminate or reduce those hazards, risks, or exposures. The Competent Authority may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.

2 "Employer" means a natural or legal person that employs one or more workers engaged in Ship Recycling.

3 "Existing ship" means a ship which is not a new ship.

4 "New ship" means a ship:

.1 for which the building contract is placed on or after the entry into force of this Convention; or

.2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after six months after the entry into force of this Convention; or

.3 the delivery of which is on or after 30 months after the entry into force of this Convention.

5 "New installation" means the installation of systems, equipment, insulation, or other material on a ship after the date on which this Convention enters into force.

6 "Safe-for-entry" means a space that meets the following criteria:

.1 the oxygen content of the atmosphere and the concentration of flammable vapours are within safe limits;

.2 any toxic materials in the atmosphere are within permissible concentrations; and

.3 any residues or materials associated with the work authorized by the Competent person will not produce uncontrolled release of toxic materials or an unsafe concentration of flammable vapours under existing atmospheric conditions while maintained as directed.

7 Safe-for-hot work means a space that meets the following criteria:

.1 a safe, non-explosive condition, including gas-free status, exists for the use of electric arc or gas welding equipment, cutting or burning equipment or other forms of naked flame, as well as heating, grinding, or spark generating operations;

.2 Safe-for-entry requirements of regulation 1.6 are met;

.3 existing atmospheric conditions will not change as a result of the hot work; and

.4 all adjacent spaces have been cleaned, or inerted, or treated sufficiently to prevent the start or spread of fire.

8 "Shipowner" means the person or persons or company registered as the owner of the ship or, in the absence of registration, the person or persons or company owning the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship. However, in the case of a ship owned by a State and operated by a company which in that State is registered as the ship's operator, "owner" shall mean such company. This term also includes those who have ownership of the ship for a limited period pending its sale or handing over to a Ship Recycling Facility.

9 "Site inspection" means an inspection of the Ship Recycling Facility confirming the condition described by the verified documentation.

10 "Statement of Completion" means a confirmatory statement issued by the Ship Recycling Facility that the Ship Recycling has been completed in accordance with this Convention.

11 "Tanker" means an oil tanker as defined in MARPOL Annex I or an NLS tanker as defined in MARPOL Annex II.

12 "Worker" means any person who performs work, either regularly or temporarily, in the context of an employment relationship including contractor personnel.

Regulation 2 – General applicability

Unless expressly provided otherwise, the design, construction, survey, certification, operation and recycling of ships shall be conducted in accordance with the provisions of this Annex.

Regulation 3 – Relationship with other standards, recommendations and guidance

Parties shall take measures to implement the requirements of the regulations of this Annex, taking into account relevant and applicable standards, recommendations and guidance developed by the International Labour Organization and the relevant and applicable technical standards, recommendations and guidance developed under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

CHAPTER 2 – REQUIREMENTS FOR SHIPS

Part A – Design, construction, operation and maintenance of ships

Regulation 4 – Controls of ships' Hazardous Materials

In accordance with the requirements specified in Appendix 1 to this Convention each Party:

.1 shall prohibit and/or restrict the installation or use of Hazardous Materials listed in Appendix 1 on ships entitled to fly its flag or operating under its authority; and

.2 shall prohibit and/or restrict the installation or use of such materials on ships, whilst in its ports, shipyards, ship repair yards, or offshore terminals,

and shall take effective measures to ensure that such ships comply with those requirements.

Regulation 5 – Inventory of Hazardous Materials

1 Each new ship shall have on board an Inventory of Hazardous Materials. The Inventory shall be verified either by the Administration or by any person or organization authorized by it taking into account guidelines, including any threshold values and exemptions contained in those guidelines, developed by the Organization. The Inventory of Hazardous Materials shall be specific to each ship and shall at least:

.1 identify as Part I, Hazardous Materials listed in Appendices 1 and 2 to this Convention and contained in ship's structure or equipment, their location and approximate quantities; and

.2 clarify that the ship complies with regulation 4.

2 Existing ships shall comply as far as practicable with paragraph 1 not later than 5 years after the entry into force of this Convention, or before going for recycling if this is earlier, taking into account the guidelines developed by the Organization and the Organization's Harmonized System of Survey and Certification. The Hazardous Materials listed in Appendix 1, at least, shall be identified when the Inventory is developed. For existing ships a plan shall be prepared describing the visual/sampling check by which the Inventory of Hazardous Materials is developed, taking into account the guidelines developed by the Organization.

3 Part I of the Inventory of Hazardous Materials shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing Hazardous Materials listed in Appendix 2 and relevant changes in ship structure and equipment, taking into account the guidelines developed by the Organization.

4 Prior to recycling the Inventory shall, in addition to the properly maintained and updated Part I, incorporate Part II for operationally generated wastes and Part III for stores, and be verified either by the Administration or by any person or organization authorized by it, taking into account the guidelines developed by the Organization.

Regulation 6 – Procedure for proposing amendments to Appendices 1 and 2

1 Any Party may propose an amendment to Appendix 1 and/or Appendix 2 in accordance with this regulation. The proposed amendment shall be considered within the Organization under Article 18 paragraph 2 and this regulation.

2 When the Organization receives a proposal, it shall also bring the proposal to the attention of the United Nations and its Specialized Agencies, intergovernmental organizations having agreements with the Organization and non-governmental organizations in consultative status with the Organization and shall make it available to them.

3 The Committee shall establish a technical group in accordance with regulation 7 to review proposals submitted in accordance with paragraph 1 of this regulation.

4 The technical group shall review the proposal along with any additional data, including decisions adopted by other international bodies regarding their lists of materials or hazardous substances, submitted by any interested entity, and shall evaluate and report to the Committee whether the Hazardous Material in question is likely, in the context of this Convention, to lead to significant adverse effects on human health or the environment such that the amendment of Appendix 1 or Appendix 2 is warranted. In this regard:

.1 The technical group's review shall include:

.1.1 an evaluation of the association between the Hazardous Material in question and the likelihood, in the context of this Convention, that it will lead to significant adverse effects on human health or the environment based on the submitted data or other relevant data brought to the attention of the group;

.1.2 an evaluation of the potential risk reduction attributable to the proposed control measures and any other control measures that may be considered by the technical group;

.1.3 consideration of available information on the technical feasibility of control measures;

.1.4 consideration of available information on other effects arising from the introduction of such control measures relating to:

- the environment;

- human health and safety including that of seafarers and workers; and

- the cost to international shipping and other relevant sectors.

.1.5 consideration of the availability of suitable alternatives to the Hazardous Material to be controlled, including a consideration of the potential risks of alternatives;

.1.6 consideration of the risks posed by the Hazardous Material during the recycling process; and

.1.7 consideration of suitable threshold values and any useful or necessary exemptions.

.2 If the technical group finds that the Hazardous Material in question is likely, in the context of this Convention, to lead to significant adverse effects on human health or the environment, lack of full scientific certainty shall not be used as a reason to prevent the group from proceeding with an evaluation of the proposal.

.3 The technical group's report shall be in writing and shall take into account each of the evaluations and considerations referred to in subparagraph .1, except that the technical group may decide not to proceed with the evaluations and considerations described in subparagraphs .1.2 to .1.7 if it determines after the evaluation in subparagraph .1.1 that the proposal does not warrant further consideration.

.4 The technical group's report shall include, *inter alia*, a recommendation on whether international controls pursuant to this Convention are warranted on the Hazardous Material in question, on the suitability of the specific control measures suggested in the comprehensive proposal, or on other control measures which it believes to be more suitable.

5 The Committee shall decide whether to approve any proposal to amend Appendix 1 or Appendix 2, and any modifications thereto, if appropriate, taking into account the technical group's report. Any proposed amendment shall specify the application of the amendment for ships certified in accordance with this Convention before the entry into force of the amendment. If the report finds that the Hazardous Material in question is likely, in the context of this Convention, to lead to significant adverse effects on human health or the environment, lack of full scientific certainty shall not be used as a reason to prevent a decision from being taken to list a Hazardous Material in Appendix 1 or Appendix 2. A decision not to approve the proposal shall not preclude future submission of a new proposal with respect to a particular Hazardous Material if new information comes to light.

Regulation 7 – Technical Groups

1 The Committee may establish one or more technical groups pursuant to regulation 6 as needed. The technical group may comprise representatives of the Parties, Members of the Organization, the United Nations and its Specialized Agencies, intergovernmental organizations having agreements with the Organization, and non-governmental organizations in consultative status with the Organization, which should preferably include representatives of institutions and laboratories with expertise in environmental fate and effects of substances, toxicological effects, marine biology, human health, economic analysis, risk management, shipbuilding, international shipping, occupational health and safety or other fields of expertise necessary to objectively review the technical merits of a proposal.

2 The Committee shall decide on the terms of reference, organization, participation and operation of the technical groups. Such terms shall provide for protection of any confidential information that may be submitted. Technical groups may hold such meetings as required, but shall endeavour to conduct their work through written or electronic correspondence or other media as appropriate.

3 Only the representatives of Parties may participate in formulating any recommendation to the Committee pursuant to regulation 6. A technical group shall endeavour to achieve unanimity among the representatives of the Parties. If unanimity is not possible, the technical group shall communicate any minority views of such representatives.

Part B – Preparation for Ship Recycling

Regulation 8 – General requirements

Ships destined to be recycled shall:

.1 only be recycled at Ship Recycling Facilities that are:

.1 authorized in accordance with this Convention; and

.2 fully authorized to undertake all the ship recycling which the Ship Recycling Plan specifies to be conducted by the identified Ship Recycling Facility(ies);

.2 conduct operations in the period prior to entering the Ship Recycling Facility in order to minimize the amount of cargo residues, remaining fuel oil, and wastes remaining on board;

.3 in the case of a tanker, arrive at the Ship Recycling Facility with cargo tanks and pump room(s) in a condition that is ready for certification as Safe-for-entry, or Safe-for-hot work, or both, according to national laws, regulations and policies of the Party under whose jurisdiction the Ship Recycling Facility operates;

.4 provide to the Ship Recycling Facility all available information relating to the ship for the development of the Ship Recycling Plan required by regulation 9;

.5 complete the Inventory required by regulation 5; and

.6 be certified as ready for recycling by the Administration or organization recognized by it, prior to any recycling activity taking place.

Regulation 9 – Ship Recycling Plan

A ship-specific Ship Recycling Plan shall be developed by the Ship Recycling Facility(ies) prior to any recycling of a ship, taking into account the guidelines developed by the Organization. The Ship Recycling Plan shall:

.1 be developed taking into account information provided by the shipowner;

.2 be developed in the language accepted by the Party authorizing the Ship Recycling Facility, and if the language used is not English, French or Spanish, the Ship Recycling Plan shall be translated into one of these languages, except where the Administration is satisfied that this is not necessary;

.3 include information concerning *inter alia*, the establishment, maintenance, and monitoring of Safe-for-entry and Safe-for-hot work conditions and how the type and amount of materials including those identified in the Inventory of Hazardous Materials will be managed;

.4 in accordance with the declaration deposited pursuant to Article 16.6, be either explicitly or tacitly approved by the Competent Authority authorizing the Ship Recycling Facility. The Competent Authority shall send written acknowledgement of receipt of the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration within three (3) working days of its receipt in accordance with regulation 24. Thereafter:

.1 where a Party requires explicit approval of the Ship Recycling Plan, the Competent Authority shall send written notification of its decision to approve or deny the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration; and

.2 where a Party requires tacit approval of the Ship Recycling Plan, the acknowledgment of receipt shall specify the end date of a 14-day review period. The Competent Authority shall notify any written objection to the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration within this 14-day review period. Where no such written objection has been notified, the Ship Recycling Plan shall be deemed to be approved.

.5 once approved in accordance with paragraph .4, be made available for inspection by the Administration, or any nominated surveyors or organization recognized by it; and

.6 where more than one Ship Recycling Facility is used, identify the Ship Recycling Facilities to be used and specify the recycling activities and the order in which they occur at each authorized Ship Recycling Facility.

Part C – Surveys and certification

Regulation 10 – Surveys

1 Ships to which this Convention applies shall be subject to the surveys specified below:

.1 an initial survey before the ship is put in service, or before the International Certificate on Inventory of Hazardous Materials is issued. This survey shall verify that Part I of the Inventory required by regulation 5 is in accordance with the requirements of this Convention;

.2 a renewal survey at intervals specified by the Administration, but not exceeding five years. This survey shall verify that Part I of the Inventory of Hazardous Materials required by regulation 5 complies with the requirements of this Convention;

.3 an additional survey, either general or partial, according to the circumstances, may be made at the request of the shipowner after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material. The survey shall be such as to ensure that any such change, replacement, or significant repair has been made in the way that the ship continues to comply with the requirements of this Convention, and that Part I of the Inventory is amended as necessary; and

.4 a final survey prior to the ship being taken out of service and before the recycling of the ship has started. This survey shall verify:

.1 that the Inventory of Hazardous Materials as required by regulation 5.4 is in accordance with the requirements of this Convention taking into account the guidelines developed by the Organization;

.2 that the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials as required by regulation 5.4 and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions; and

.3 that the Ship Recycling Facility(ies) where the ship is to be recycled holds a valid authorization in accordance with this Convention.

2 Surveys of ships for the purpose of enforcement of the provisions of this Convention shall be carried out by officers of the Administration, taking into account the guidelines developed by the Organization. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it.

3 An Administration nominating surveyors or recognizing organizations to conduct surveys, as described in paragraph 2 shall, as a minimum, empower such nominated surveyors or recognized organizations to:

.1 require a ship that they survey to comply with the provisions of this Convention; and

.2 carry out surveys and inspections if requested by the appropriate authorities of a port State that is a Party.

4 In every case, the Administration concerned shall be responsible to ensure the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

5 The initial and renewal surveys should be harmonized with the surveys required by other applicable statutory instruments of the Organization.

Regulation 11 – Issuance and endorsement of certificates

1 An International Certificate on Inventory of Hazardous Materials shall be issued either by the Administration or by any person or organization authorized by it after successful completion of an initial or renewal survey conducted in accordance with regulation 10, to any ships to which regulation 10 applies, except for existing ships for which both an initial survey and a final survey are conducted at the same time, taking into account the guidelines developed by the Organization.

2 The International Certificate on Inventory of Hazardous Materials issued under paragraph 1, at the request of the shipowner, shall be endorsed either by the Administration or by any person or organization authorized by it after successful completion of an additional survey conducted in accordance with regulation 10.

3 Notwithstanding regulation 14.2 and the requirements of regulation 10.1.2, when the renewal survey is completed within three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.

4 When the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing certificate.

5 When the renewal survey is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

6 If a certificate is issued for a period of less than five years, the Administration may extend the validity of the certificate beyond the expiry date to the maximum period specified in regulation 10.1.2.

7 If a renewal survey has been completed and a new certificate cannot be issued or placed on board the ship before the expiry date of the existing certificate, the person or organization authorized by the Administration may endorse the existing certificate and such a certificate shall be accepted as valid for a further period which shall not exceed five months from the expiry date.

8 If a ship at the time when a certificate expires is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed and then only in cases where it appears proper and reasonable to do so. No certificate shall be extended for a period longer than three months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new certificate. When the renewal survey is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

9 A certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey

is completed, the new certificate shall be valid to a date not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

10 In special circumstances, as determined by the Administration, a new certificate need not be dated from the date of expiry of the existing certificate as required by paragraph 4, 8 or 9 of this regulation. In these special circumstances, the new certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.

11 An International Ready for Recycling Certificate shall be issued either by the Administration or by any person or organization authorized by it, after successful completion of a final survey in accordance with the provisions of regulation 10, to any ships to which regulation 10 applies, taking into account the authorization of the Ship Recycling Facility and the guidelines developed by the Organization.

12 A certificate issued under the authority of a Party shall be accepted by the other Parties and regarded for all purposes covered by this Convention as having the same validity as a certificate issued by them. Certificates shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it. In every case, the Administration assumes full responsibility for the certificate.

Regulation 12 – Issuance or endorsement of a certificate by another Party

1 At the request of the Administration, another Party may cause a ship to be surveyed and, if satisfied that the provisions of this Convention are complied with, shall issue or authorize the issuance of a certificate to the ship, and where appropriate, endorse or authorize the endorsement of that certificate on the ship, in accordance with this Annex.

2 A copy of the certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

3 A certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a certificate issued by the Administration.

4 No certificate shall be issued to a ship entitled to fly the flag of a State which is not a Party.

Regulation 13 – Form of the certificates

The certificates shall be drawn up in an official language of the issuing Party, in the form set forth in Appendices 3 and 4. If the language used is not English, French or Spanish, the text shall include a translation into one of these languages. The Administration may, however, issue the International Certificate on Inventory of Hazardous Materials drawn up only in an official language of the issuing Party to ships not engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to this Convention and the International Ready for Recycling Certificate drawn up only in an official language of the issuing Party to ships recycled in Ship Recycling Facilities under the jurisdiction of the issuing Party.

Regulation 14 – Duration and validity of the certificates

1 An International Certificate on Inventory of Hazardous Materials issued under regulation 11 or 12 shall cease to be valid in any of the following cases:

.1 if the condition of the ship does not correspond substantially with the particulars of the certificate, including where Part I of the Inventory of Hazardous Materials is not properly maintained and updated, reflecting changes in ship structure and equipment, in accordance with the guidelines developed by the Organization;

.2 upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Party issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of regulation 10. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports;

.3 if the renewal survey is not completed within the periods specified under regulations 10.1 and 11; or

.4 if the certificate is not endorsed in accordance with regulation 11 or 12.

2 An International Certificate on Inventory of Hazardous Materials shall be issued for a period specified by the Administration, which shall not exceed five years.

3 An International Ready for Recycling Certificate shall be issued for a period specified by the Administration that shall not exceed three months.

4 An International Ready for Recycling Certificate issued under regulation 11 or 12 shall cease to be valid if the condition of the ship does not correspond substantially with the particulars of the certificate.

5 The International Ready for Recycling Certificate may be extended by the Administration or by any person or organization authorized by it for a single point to point voyage to the Ship Recycling Facility.

CHAPTER 3 – REQUIREMENTS FOR SHIP RECYCLING FACILITIES

Regulation 15 – Controls on Ship Recycling Facilities

1 Each Party shall establish legislation, regulations, and standards that are necessary to ensure that Ship Recycling Facilities are designed, constructed, and operated in a safe and environmentally sound manner in accordance with the regulations of this Convention.

2 Each Party shall establish a mechanism for authorizing Ship Recycling Facilities with appropriate conditions to ensure that such Ship Recycling Facilities meet the requirements of this Convention.

3 Each Party shall establish a mechanism for ensuring that Ship Recycling Facilities comply with the requirements of this chapter including the establishment and effective use of inspection, monitoring and enforcement provisions, including powers of entry and sampling. Such a mechanism may include an audit scheme to be carried out by the Competent Authority(ies) or an organization recognized by the Party, taking into account guidelines developed by the Organization, and the results of these audits should be communicated to the Organization.

4 Each Party shall designate one or more Competent Authorities and the single contact point to be used by the Organization, Parties to this Convention and other interested entities, for matters related to Ship Recycling Facilities operating within the jurisdiction of that Party.

Regulation 16 – Authorization of Ship Recycling Facilities

1 Ship Recycling Facilities which recycle ships to which this Convention applies, or ships treated similarly pursuant to Article 3.4, shall be authorized by a Party taking into account the guidelines developed by the Organization.

2 The authorization shall be carried out by the Competent Authority(ies) and shall include verification of documentation required by this Convention and a site inspection. The Competent Authority(ies) may however entrust the authorization of Ship Recycling Facilities to organizations recognized by it.

3 The Party shall notify the Organization of the specific responsibilities and conditions of the authority delegated to the recognized organizations, for circulation to Parties. In every case, the Competent Authority(ies) retains full responsibility for the authorization issued.

4 The authorization shall be drawn up in the form set forth in Appendix 5. If the language used is not English, French or Spanish, the text shall include a translation into one of these languages.

5 The authorization shall be valid for a period specified by the Party but not exceeding five years. The Party shall identify the terms for which the authorization will be issued, withdrawn, suspended, amended and renewed, and communicate these terms to the Ship Recycling Facilities. If a Ship Recycling Facility refuses inspection by the Competent Authority(ies) or the recognized organization operating on its/their behalf, the authorization shall be suspended or withdrawn.

6 If incidents or actions taken at the Ship Recycling Facility have the effect that the conditions for the authorization are no longer fulfilled, the Ship Recycling Facility shall inform the Competent Authority(ies). The Competent Authority(ies) may accordingly decide to suspend or withdraw the authorization, or require corrective actions by the Ship Recycling Facility.

Regulation 17 – General requirements

1 Ship Recycling Facilities authorized by a Party shall establish management systems, procedures and techniques which do not pose health risks to the workers concerned or to the population in the vicinity of the Ship Recycling Facility and which will prevent, reduce, minimize and to the extent practicable eliminate adverse effects on the environment caused by Ship Recycling, taking into account guidelines developed by the Organization.

2 Ship Recycling Facilities authorized by a Party shall, for ships to which this Convention applies, or ships treated similarly pursuant to Article 3.4:

.1 only accept ships that:

.1 comply with this Convention; or

.2 meet the requirements of this Convention;

.2 only accept ships which they are authorized to recycle; and

.3 have the documentation of its authorization available if such documentation is requested by a shipowner that is considering recycling a ship at that Ship Recycling Facility.

Regulation 18 – Ship Recycling Facility Plan

Ship Recycling Facilities authorized by a Party shall prepare a Ship Recycling Facility Plan. The Plan shall be adopted by the board or the appropriate governing body of the Recycling Company, and shall include:

.1 a policy ensuring workers' safety and the protection of human health and the environment, including the establishment of objectives that lead to the minimization and elimination to the extent practicable of the adverse effects on human health and the environment caused by Ship Recycling;

.2 a system for ensuring implementation of the requirements set out in this Convention, the achievement of the goals set out in the policy of the Recycling Company, and the continuous improvement of the procedures and standards used in the Ship Recycling operations;

.3 identification of roles and responsibilitilies for employers and workers when conducting Ship Recycling operations;

.4 a programme for providing appropriate information and training of workers for the safe and environmentally sound operation of the Ship Recycling Facility;

.5 an emergency preparedness and response plan;

.6 a system for monitoring the performance of Ship Recycling;

.7 a record-keeping system showing how Ship Recycling is carried out;

.8 a system for reporting discharges, emissions, incidents and accidents causing damage, or with the potential of causing damage, to workers' safety, human health and the environment; and

.9 a system for reporting occupational diseases, accidents, injuries and other adverse effects on workers' safety and human health,

taking into account guidelines developed by the Organization.

Regulation 19 – Prevention of adverse effects to human health and the environment

Ship Recycling Facilities authorized by a Party shall establish and utilize procedures to:

.1 prevent explosions, fires, and other unsafe conditions by ensuring that Safe-for-hot work conditions and procedures are established, maintained and monitored throughout Ship Recycling;

.2 prevent harm from dangerous atmospheres and other unsafe conditions by ensuring that Safe-for-entry conditions and procedures are established, maintained, and monitored in ship spaces, including confined spaces and enclosed spaces, throughout Ship Recycling;

.3 prevent other accidents, occupational diseases and injuries or other adverse effects on human health and the environment; and

.4 prevent spills or emissions throughout Ship Recycling which may cause harm to human health and/or the environment,

taking into account guidelines developed by the Organization.

Regulation 20 – Safe and environmentally sound management of Hazardous Materials

1 Ship Recycling Facilities authorized by a Party shall ensure safe and environmentally sound removal of any Hazardous Material contained in a ship certified in accordance with regulation 11 or 12. The person(s) in charge of the recycling operations and the workers shall be familiar with the requirements of this Convention relevant to their tasks and, in particular, actively use the Inventory of Hazardous Materials and the Ship Recycling Plan, prior to and during the removal of Hazardous Materials.

2 Ship Recycling Facilities authorized by a Party shall ensure that all Hazardous Materials detailed in the Inventory are identified, labelled, packaged and removed to the maximum extent possible prior to cutting by properly trained and equiped workers, taking into account the guidelines developed by the Organization, in particular:

.1 hazardous liquids, residues and sediments;

.2 substances or objects containing heavy metals such as lead, mercury, cadmium and hexavalent chromium;

.3 paints and coatings that are highly flammable and/or lead to toxic releases;

.4 asbestos and materials containing asbestos;

.5 PCB and materials containing PCBs, ensuring that heat inducing equipment is avoided during such operations;

.6 CFCs and halons; and

.7 other Hazardous Materials not listed above and that are not a part of the ship structure.

3 Ship Recycling Facilities authorized by a Party shall provide for and ensure safe and environmentally sound management of all Hazardous Materials and wastes removed from the ship recycled at that Ship Recycling Facility. Waste management and disposal sites shall be identified to provide for the further safe and environmentally sound management of materials.

4 All wastes generated from the recycling activity shall be kept separate from recyclable materials and equipment, labelled, stored in appropriate conditions that do not pose a risk to the workers, human health or the environment and only transferred to a waste management facility authorized to deal with their treatment and disposal in a safe and environmentally sound manner.

Regulation 21 – Emergency preparedness and response

Ship Recycling Facilities authorized by a Party shall establish and maintain an emergency preparedness and response plan. The plan shall be made having regard to the location and environment of the Ship Recycling Facility, and shall take into account the size and nature of activities associated with each Ship Recycling operation. The plan shall furthermore:

.1 ensure that the necessary equipment and procedures to be followed in the case of an emergency are in place, and that drills are conducted on a regular basis;

.2 ensure that the necessary information, internal communication and coordination are provided to protect all people and the environment in the event of an emergency at the Ship Recycling Facility;

.3 provide for communication with, and information to, the relevant Competent Authority(ies), the neighbourhood and emergency response services;

.4 provide for first-aid and medical assistance, fire-fighting and evacuation of all people at the Ship Recycling Facility, pollution prevention; and

.5 provide for relevant information and training to all workers of the Ship Recycling Facility, at all levels and according to their competence, including regular exercises in emergency prevention, preparedness and response procedures.

Regulation 22 – Worker safety and training

1 Ship Recycling Facilities authorized by a Party shall provide for worker safety by measures including:

.1 ensuring the availability, maintenance and use of personal protective equipment and clothing needed for all Ship Recycling operations;

.2 ensuring that training programmes are provided to enable workers to safely undertake all Ship Recycling operations they are tasked to do; and

.3 ensuring that all workers at the Ship Recycling Facility have been provided with appropriate training and familiarization prior to performing any Ship Recycling operation.

2 Ship Recycling Facilities authorized by a Party shall provide and ensure the use of personal protective equipment for operations requiring such use, including:

.1 head protection;

.2 face and eye protection;

.3 hand and foot protection;

.4 respiratory protective equipment;

.5 hearing protection;

.6 protectors against radioactive contamination;

.7 protection from falls; and

.8 appropriate clothing.

3 Ship Recycling Facilities authorized by a Party may co-operate in providing for training of workers. Taking into account the guidelines developed by the Organization, the training programmes set forth in paragraph 1.2 of this regulation shall:

.1 cover all workers including contractor personnel and employees in the Ship Recycling Facility;

.2 be conducted by Competent persons;

.3 provide for initial and refresher training at appropriate intervals;

.4 include participants' evaluation of their comprehension and retention of the training;

.5 be reviewed periodically and modified as necessary; and

.6 be documented.

Regulation 23 – Reporting on incidents, accidents, occupational diseases and chronic effects

1 Ship Recycling Facilities authorized by a Party shall report to the Competent Authority(ies) any incident, accident, occupational diseases, or chronic effects causing, or with the potential of causing, risks to workers safety, human health and the environment.

2 Reports shall contain a description of the incident, accident, occupational disease, or chronic effect, its cause, the response action taken and the consequences and corrective actions to be taken.

CHAPTER 4 – REPORTING REQUIREMENTS

Regulation 24 – Initial notification and reporting requirements

1 A shipowner shall notify the Administration in due time and in writing of the intention to recycle a ship in order to enable the Administration to prepare for the survey and certification required by this Convention.

2 A Ship Recycling Facility when preparing to receive a ship for recycling shall notify in due time and in writing its Competent Authority(ies) of the intent. The notification shall include at least the following ship details:

.1 name of the State whose flag the ship is entitled to fly;

.2 date on which the ship was registered with that State;

.3 ship's identification number (IMO number);

.4 hull number on new-building delivery;

.5 name and type of the ship;

.6 port at which the ship is registered;

.7 name and address of the Shipowner as well as the IMO registered owner identification number;

.8 name and address of the company as well as the IMO company identification number;

.9 name of all classification society(ies) with which the ship is classed;

.10 ship's main particulars (Length overall (LOA), Breadth (Moulded), Depth (Moulded), Lightweight, Gross and Net tonnage, and engine type and rating);

.11 Inventory of Hazardous Materials; and

.12 draft ship recycling plan for approval pursuant to regulation 9.

3 When the ship destined to be recycled has acquired the International Ready for Recycling Certificate, the Ship Recycling Facility shall report to its Competent Authority(ies) the planned start of the Ship Recycling. The report shall be in accordance with the reporting format in Appendix 6, and shall at least include a copy of the International Ready for Recycling Certificate. Recycling of the ship shall not start prior to the submission of the report.

Regulation 25 – Reporting upon completion

When the partial or complete recycling of a ship is completed in accordance with the requirements of this Convention, a Statement of Completion shall be issued by the Ship Recycling Facility and reported to its Competent Authority(ies). This report must be compiled as

shown in appendix 7. The Competent Authority(ies) shall send a copy of the Statement to the Administration which issued the International Ready for Recycling Certificate for the ship. The Statement shall be issued within 14 days of the date of partial or completed Ship Recycling in accordance with the Ship Recycling Plan and shall include a report on incidents and accidents damaging human health and/or the environment, if any.

APPENDIX 1

CONTROLS OF HAZARDOUS MATERIALS

Hazardous Material	Definitions	Control measures
Asbestos	Materials containing asbestos	For all ships, new installation of materials which contain asbestos shall be prohibited.
Ozone-depleting substances	Ozone-depleting substances means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A,B,C or E to the said Protocol in force at the time of application or interpretation of this Annex. Ozone-depleting substances that may be found on board ship include, but are not limited to: Halon 1211 Bromochlorodifluoromethane Halon 1301 Bromotrifluoromethane Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2) CFC-11 Trichlorofluoromethane CFC-12 Dichlorodifluoromethane CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane CFC-115 Chloropentafluoroethane	New installations which contain ozone-depleting substances shall be prohibited on all ships, except that new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020.
Polychlorinated biphenyls (PCB)	"Polychlorinated biphenyls" means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to ten chlorine atoms	For all ships, new installation of materials which contain Polychlorinated biphenyls shall be prohibited.
Anti-fouling compounds and systems	Anti-fouling compounds and systems regulated under Annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention) in force at the time of application or interpretation of this Annex.	1. No ship may apply anti-fouling systems containing organotin compounds as a biocide or any other anti-fouling system whose application or use is prohibited by the AFS Convention. 2. No new ships or new installations on ships shall apply or employ anti-fouling compounds or systems in a manner inconsistent with the AFS Convention.

APPENDIX 2

MINIMUM LIST OF ITEMS FOR THE INVENTORY OF HAZARDOUS MATERIALS

Any Hazardous Materials listed in Appendix 1
Cadmium and Cadmium Compounds
Hexavalent Chromium and Hexavalent Chromium Compounds
Lead and Lead Compounds
Mercury and Mercury Compounds
Polybrominated Biphenyl (PBBs)
Polybrominated Diphenyl Ethers (PBDEs)
Polychlorinated Naphthalenes (more than 3 chlorine atoms)
Radioactive Substances
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)

APPENDIX 3

FORM OF THE INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

(Note: This certificate shall be supplemented by Part I of the Inventory of Hazardous Materials)

(Official seal) *(State)*

Issued under the provisions of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of

.....
(*Full designation of the country*)

by .....
(*Full designation of the person or organization authorized under the provisions of the Convention*)

Particulars of the Ship

Name of Ship	
Distinctive number or letters	
Port of Registry	
Gross tonnage	
IMO number	
Name and address of shipowner	
IMO registered owner identification number	
IMO company identification number	
Date of Construction	

Particulars of Part I of the Inventory of Hazardous Materials

Part I of the Inventory of Hazardous Materials identification/verification number: .....

Note: Part I of the Inventory of Hazardous Materials, as required by regulation 5 of the Annex to the Convention, is an essential part of the International Certificate on Inventory of Hazardous Materials and must always accompany the International Certificate on Inventory of Hazardous Materials. Part I of the Inventory of Hazardous Materials should be compiled on the basis of the standard format shown in the guidelines developed by the Organization.

THIS IS TO CERTIFY:

1. that the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention; and
2. that the survey shows that Part I of the Inventory of Hazardous Materials fully complies with the applicable requirements of the Convention.

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

This certificate is valid until ..... (dd/mm/yyyy)

Issued at .....
(*Place of issue of certificate*)

(dd/mm/yyyy) ....
(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

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

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN FIVE YEARS WHERE REGULATION 11.6 APPLIES*

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 11.6 of the Annex to the Convention, be accepted as valid until (dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place:

Date: (dd/mm/yyyy)

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION 11.7 APPLIES*

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 11.7 of the Annex to the Convention, be accepted as valid until (dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

* This page of the endorsement at survey shall be reproduced and added to the certificate as considered necessary by the Administration.

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 11.8 OR 11.9 APPLIES*

This certificate shall, in accordance with regulation 11.8 or 11.9** of the Annex to the Convention, be accepted as valid until (dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT FOR ADDITIONAL SURVEY*

At an additional survey in accordance with regulation 10 of the Annex to the Convention, the ship was found to comply with the relevant provisions of the Convention.

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

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* This page of the endorsement at survey shall be reproduced and added to the certificate as considered necessary by the Administration.

** Delete as appropriate.

APPENDIX 4

FORM OF THE INTERNATIONAL READY FOR RECYCLING CERTIFICATE

INTERNATIONAL READY FOR RECYCLING CERTIFICATE

(Note: This certificate shall be supplemented by the Inventory of Hazardous Materials and the Ship Recycling Plan)

(Official seal) *(State)*

Issued under the provisions of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of

.....
(*Full designation of the country*)

by .....
(*Full designation of the person or organization authorized under the provisions of the Convention*)

Particulars of the Ship

Name of Ship	
Distinctive number or letters	
Port of Registry	
Gross tonnage	
IMO number	
Name and address of shipowner	
IMO registered owner identification number	
IMO company identification number	
Date of Construction	

Particulars of the Ship Recycling Facility(ies)

Name of Ship Recycling Facility	
Distinctive Recycling Company identity number*	
Full address	
Date of expiry of DASR	

* This number is based on the Document of Authorization to conduct Ship Recycling (DASR).

Particulars of the Inventory of Hazardous Materials

Inventory of Hazardous Materials identification/verification number: .....

Note: The Inventory of Hazardous Materials, as required by regulation 5 of the Annex to the Convention, is an essential part of the International Ready for Recycling Certificate and must always accompany the International Ready for Recycling Certificate. The Inventory of Hazardous Materials should be compiled on the basis of the standard format shown in the guidelines developed by the Organization.

Particulars of the Ship Recycling Plan

Ship Recycling Plan identification/verification number: .....

Note: The Ship Recycling Plan, as required by regulation 9 of the Annex to the Convention, is an essential part of the International Ready for Recycling Certificate and must always accompany the International Ready for Recycling Certificate.

THIS IS TO CERTIFY:

1 that the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention;

2 that the ship has a valid Inventory of Hazardous Materials in accordance with regulation 5 of the Annex to the Convention;

3 that the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials as required by regulation 5.4 and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions; and

4 that the Ship Recycling Facility(ies) where this ship is to be recycled holds a valid authorization in accordance with the Convention.

This certificate is valid until (dd/mm/yyyy) .....
(Date)

Issued at .....
(*Place of issue of certificate*)

(dd/mm/yyyy) ....
(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

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

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF THE SHIP RECYCLING FACILITY FOR A PERIOD OF GRACE WHERE REGULATION 14.5 APPLIES*

This certificate shall, in accordance with regulation 14.5 of the Annex to the Convention, be accepted as valid for a single point to point voyage

from the port of: .....

to the port of: .....

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

* This page of the endorsement shall be reproduced and added to the certificate as considered necessary by the Administration.

APPENDIX 5

FORM OF THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

Document of Authorization to conduct Ship Recycling (DASR) in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

Issued under the provision of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of:

……...
(Full designation of the country)

by……..
(Full designation of the Competent Authority under the Convention)

Name of Ship Recycling Facility	
Distinctive Recycling Company identity No.	
Full address of Ship Recycling Facility	
Primary contact person	
Phone number	
E-mail address	
Name, address, and contact information of ownership company	
Working language(s)	

This is to verify that the Ship Recycling Facility has implemented management systems, procedures and techniques in accordance with Chapters 3 and 4 to the Annex to the Convention.

This authorization is valid until ……. and is subject to the limitations identified in the attached supplement.

This authorization is subject to amendment, suspension, withdrawal, or periodic renewal in accordance with regulation 16 of the Annex to the Convention.

Issued at .....
(*Place of issue of the authorization*)

(dd/mm/yyyy) ....
(*Date of issue*) (*Signature of duly authorized official issuing the authorization*)

.....
(Typed name and title of duly authorized official issuing the authorization)

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

SUPPLEMENT TO:

Document of Authorization to undertake Ship Recycling (DASR) in accordance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

Notes:

1 This record shall be permanently attached to the DASR. The DASR shall be available at the Ship Recycling Facility at all times.

2 All procedures, plans and other documents produced by the Ship Recycling Facility and required under the terms to which the DASR has been issued shall be available in the working language of the Ship Recycling Facility and in either English, French or Spanish.

3 The authorization is subject to the limitations defined by this supplement.

1 GENERAL TERMS

1.1 Requirements of the Convention

The Ship Recycling Facility meets the requirements that it be designed, constructed, and operated in a safe and environmentally sound manner in accordance with the Convention, including meeting the relevant requirements of:

Regulation 16 – Authorization of Ship Recycling Facilities
Regulation 17 – General requirements
Regulation 18 – Ship Recycling Facility Plan
Regulation 19 – Prevention of adverse effects to human health and the environment
Regulation 20 – Safe and environmentally sound management of Hazardous Materials
Regulation 21 – Emergency preparedness and response
Regulation 22 – Worker safety and training
Regulation 23 – Reporting on incidents, accidents, occupational diseases and chronic effects
Regulation 24 – Initial notification and reporting requirements
Regulation 25 – Reporting upon completion

These requirements are imposed on the Ship Recycling Facility by way of

.....
(Identify the permit, licence, authorization, legal standards, or other mechanism that applies)

Ship Recycling Facility Plan identification/verification number: .....

1.2 Acceptance of ships

For ships to which the Convention applies and ships treated similarly pursuant to Article 3.4 of the Convention, the Ship Recycling Facility can only accept a ship for recycling in accordance with regulation 17 of the Annex to the Convention.

1.3 Safe-for-hot work and Safe-for-entry conditions

The Ship Recycling Facility is capable of establishing, maintaining and monitoring Safe-for-hot work and Safe-for-entry conditions throughout the Ship Recycling process.

1.4 Management of Hazardous Materials

The Ship Recycling Facility is designed, constructed, operated, and required to ensure that all Hazardous Materials' management shall be safe and environmentally sound in compliance with the Convention and with all relevant local or national regulations/requirements.

1.5 Map and location of Ship Recycling operations

A map of the boundary of the Ship Recycling Facility and the location of Ship Recycling operations within it, is attached.

2 CAPABILITY OF SHIP RECYCLING FACILITY

2.1 Size of ships

The Ship Recycling Facility is authorized to accept a ship for recycling subject to the following size limitations:

Maximum Size		Other Limitations
Length		
Breadth		
Lightweight		

2.2 Safe and Environmentally Sound Management of Hazardous Materials

The Ship Recycling Facility is authorized to accept a ship for recycling that contains Hazardous Materials as specified in the following table subject to the conditions noted below:

Hazardous Material(*4)	Management of Hazardous Materials			Authorization/Limitations
	Removal Y/N (*2)	Storage Y/N	Process (*1) Y/N (*3)	
Asbestos				
Ozone-depleting substances				
Polychlorinated biphenyls (PCB)				
Anti-fouling compounds and systems				
Cadmium and Cadmium Compounds				
Hexavalent Chromium and Hexavalent Chromium Compounds				
Lead and Lead Compounds				
Mercury and Mercury Compounds				
Polybrominated Biphenyl (PBBs)				
Polybrominated Diphenyl Ethers (PBDEs)				
Polychlorinated Naphthalenes (more than 3 chlorine atoms)				
Radioactive substances				
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)				
Hazardous liquids, residues and sediments				
Paints and coatings that are highly flammable and/or lead to toxic release				
Other Hazardous Materials not listed above and that are not a part of the ship structure (specify)				

Notes: *1 Process means the processing of Hazardous Materials in the Ship Recycling Facility, such as:

a. incineration of Hazardous Materials;
b. reclamation of Hazardous Materials; and
c. treatment of oily residues.

*2 If Yes (Y), indicate in the Ship Recycling Facility Plan the responsible personnel authorized to carry out the removal, with the certificate number or other relevant information.

*3 If No (N), describe in the Ship Recycling Plan where the Hazardous Materials are to be processed/disposed.

*4 These Hazardous Materials are specified in Appendices 1 and 2 and regulation 20 of the Convention.

APPENDIX 6

FORM OF REPORT OF PLANNED START OF SHIP RECYCLING

The .....
(Name of Ship Recycling Facility)

located at .....
(Full Ship Recycling Facility address)

Authorized in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") to conduct Ship Recycling under the authority of the Government of:

.....
(Full designation of country)

as indicated in the Document of Authorization to conduct Ship Recycling issued at

.....
(Place of authorization)

by .....
(Full designation of the Competent Authority under the Convention)

on (dd/mm/yyyy) .....
(Date of issue)

Hereby reports that the Ship Recycling Facility is ready in every respect to start the recycling of the vessel .....
(IMO number)

The International Ready for Recycling Certificate issued under the provisions of the Convention under the authority of the Government of

.....
(Full designation of country)

by .....
(Full designation of the person or organization authorized under the provisions of the Convention)

on (dd/mm/yyyy) .....
(Date of issue)

is enclosed.

Signed .....

APPENDIX 7

FORM OF THE STATEMENT OF COMPLETION OF SHIP RECYCLING

STATEMENT OF COMPLETION OF SHIP RECYCLING

This document is a statement of completion of Ship Recycling for

.....
(*Name of the ship when it was received for recycling/at the point of deregistration*)

Particulars of the Ship as received for recycling

Distinctive number or letters	
Port of Registry	
Gross tonnage	
IMO number	
Name and address of shipowner	
IMO registered owner identification number	
IMO company identification number	
Date of Construction	

THIS CONFIRMS THAT:

The ship has been recycled in accordance with the Ship Recycling Plan as part of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") at

.....
(Name and location of the authorized Ship Recycling Facility)

and the recycling of the ship as required by the Convention was completed on:

(dd/mm/yyyy) .....
(Date of completion)

Issued at .....
(*Place of issue of the Statement of Completion*)

(dd/mm/yyyy) ....
(*Date of issue*) (*Signature of the owner of the Ship Recycling Facility or a representative acting on behalf of the owner*)

I

(Legislative acts)

REGULATIONS

REGULATION (EU) No 1257/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 20 November 2013

on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee [1],

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure [2],

Whereas:

(1) Ships which constitute waste and which are subject to a transboundary movement for recycling are regulated by the Basel Convention of 22 March 1989 on the Control of the Transboundary Movements of Hazardous Wastes and their Disposal ('the Basel Convention') and Regulation (EC) No 1013/2006 of the European Parliament and of the Council [3]. Regulation (EC) No 1013/2006 implements the Basel Convention as well as an amendment [4] to that Convention adopted in 1995, which has not yet entered into force at international level, and which establishes a ban on exports of hazardous waste to countries that are not members of the Organisation for Economic Cooperation and Development (OECD). Such ships are generally classified as hazardous waste and prohibited from being exported from the Union for recycling in facilities in countries that are not members of the OECD.

(2) The mechanisms for monitoring the application of, and enforcing the current Union and international law are not adapted to the specificities of ships and international shipping. Efforts involving inter-agency cooperation between the International Labour Organisation (ILO), the International Maritime Organisation (IMO) and the Secretariat of the Basel Convention have been successful in reaching agreement on the introduction of mandatory requirements, at global level, aimed at ensuring an efficient and effective solution to unsafe and unsound ship recycling practices in the form of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships ('the Hong Kong Convention').

(3) Current ship recycling capacity in OECD countries which is legally accessible to ships flying the flag of a Member State is insufficient. Current safe and environmentally sound ship recycling capacity in countries which are not members of the OECD is sufficient to treat all ships flying the flag of a Member State and is expected to expand further by 2015 as the results of actions taken by recycling countries to meet the requirements of the Hong Kong Convention.

(4) The Hong Kong Convention was adopted on 15 May 2009 under the auspices of the International Maritime Organization. The Hong Kong Convention will enter into force only 24 months after the date of ratification by at least 15 states representing a combined merchant fleet of at least 40 per cent of the gross tonnage of the world's merchant shipping and whose combined maximum annual ship recycling volume during the preceding 10 years constitutes not less than three per cent of the gross tonnage of the combined merchant shipping of the same states. That Convention covers the design, the

[1] OJ C 299, 4.10.2012, p. 158.

[2] Position of the European Parliament of 22 October 2013 (not yet published in the Official Journal) and decision of the Council of 15 November 2013.

[3] Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (OJ L 190, 12.7.2006, p. 1).

[4] Amendment to the Basel Convention ('Ban amendment') adopted by Decision III/1 of the Parties to the Basel Convention.

construction, the operation and the preparation of ships with a view to facilitating safe and environmentally sound recycling without compromising ship safety and operational efficiency. It also covers the operation of ship recycling facilities in a safe and environmentally sound manner, and the establishment of an appropriate enforcement mechanism for ship recycling.

(5) This Regulation is aimed at facilitating early ratification of the Hong Kong Convention both within the Union and in third countries by applying proportionate controls to ships and ship recycling facilities on the basis of that Convention.

(6) The Hong Kong Convention provides explicitly for its Parties to take more stringent measures consistent with international law, with respect to the safe and environmentally sound recycling of ships, in order to prevent, reduce or minimise any adverse effects on human health and the environment. Taking that into account, this Regulation should provide protection from the possible adverse effects of hazardous materials on board all ships calling at a port or anchorage of a Member State while ensuring compliance with the provisions applicable to those materials under international law. In order to ensure the monitoring of compliance with the requirements relating to hazardous materials under this Regulation, Member States should apply national provisions to implement Directive 2009/16/EC of the European Parliament and of the Council [1]. Currently, port State control inspectors are tasked with the inspection of certification and with active testing for hazardous materials, including asbestos, under the International Convention for the Safety of Life at Sea ('SOLAS'). The Paris Memorandum of Understanding on Port State Control provides a harmonised approach for those activities.

(7) The purpose of this Regulation is also to reduce disparities between operators in the Union, in OECD countries and in relevant third countries in terms of health and safety at the workplace and environmental standards and to direct ships flying the flag of a Member State to ship recycling facilities that practice safe and environmentally sound methods of dismantling ships instead of directing them to substandard sites as is currently the practice. The competitiveness of safe and environmentally sound recycling and treatment of ships in ship recycling facilities located in a Member State would thereby also be increased. The establishment of a European List of ship recycling facilities ('the European List') fulfilling the requirements set out in this Regulation would contribute to those objectives as well as to better enforcement by facilitating the control of ships going for recycling by the Member State whose flag the ship is flying. Those requirements for ship recycling facilities should be based on the requirements of the Hong Kong Convention. In this regard, ship recycling facilities approved in accordance with this Regulation should meet the necessary requirements to ensure protection of the environment, the health and safety of workers and the environmentally sound management of the waste recovered from recycled ships. For ship recycling facilities located in a third country, the requirements should achieve a high level of protection of human health and the environment that is broadly equivalent to that in the Union. Ship recycling facilities which do not meet those minimum requirements should therefore not be included in the European List.

(8) The principle of equality in Union law should be applied and its application monitored, in particular when establishing and updating the European List in respect of ship recycling facilities located in a Member State and ship recycling facilities located in a third country fulfilling the requirements set out in this Regulation.

(9) Member States are encouraged to adopt appropriate measures to ensure that ships excluded from the scope of this Regulation act in a manner that is consistent with this Regulation, in so far as is reasonable and practicable.

(10) In order to avoid duplication, it is necessary to exclude ships flying the flag of a Member State falling under the scope of this Regulation from the scope of application of Regulation (EC) No 1013/2006 and of Directive 2008/98/EC of the European Parliament and of the Council [2] respectively. Regulation (EC) No 1013/2006 applies to shipments of waste from the Union, subject to exclusions for certain categories of waste where an alternative regime applies. This Regulation subjects ships within its scope to controls throughout their life-cycle and aims to secure recycling of those ships in an environmentally sound manner. It is therefore appropriate to specify that a ship subject to the alternative control regime throughout its life-cycle under this Regulation should not be subject to Regulation (EC) No 1013/2006. Ships neither covered by the scope of the Hong Kong Convention nor by this Regulation, and any waste on board of a ship other than operationally generated waste, should continue to be subject to Regulation (EC) No 1013/2006 and to Directives 2008/98/EC and 2008/99/EC of the European Parliament and of the Council [3], respectively.

(11) It is also acknowledged that ships continue to be subject to other international conventions to ensure their safe operation at sea during the operational part of their life-cycle and, although they can exercise certain navigational rights and freedoms, ships are required to

[1] Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control (OJ L 131, 28.5.2009, p. 57).

[2] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

[3] Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28).

provide prior notice of entry into ports. Member States should be able to choose to apply further controls in accordance with other international treaties. Additional transit controls are therefore not considered necessary under this Regulation.

(12) When interpreting the requirements of this Regulation, consideration should be given to the guidelines developed by the IMO ('IMO guidelines') to support the Hong Kong Convention.

(13) For the purposes of this Regulation, the term 'recycling' should not have the same meaning as defined in Directive 2008/98/EC. This Regulation should therefore introduce a specific definition for the term 'ship recycling'.

(14) Regulation (EC) No 1272/2008 of the European Parliament and of the Council [1] implements at Union level the Globally Harmonised System for the classification and labelling of chemicals. That Regulation, together with Council Directive 67/548/EEC [2] and Directive 1999/45/EC of the European Parliament and of the Council [3], provides useful guidance in determining what constitutes a hazardous material.

(15) Keeping an inventory of hazardous materials on board a ship throughout its life-cycle is a key requirement laid down in the Hong Kong Convention and in this Regulation. In accordance with Regulation 8(2) of the Hong Kong Convention, a ship destined to be recycled should minimise the amounts of operationally generated waste in the period prior to entering the ship recycling facility. If the operationally generated waste is intended for delivery with the ship to a ship recycling facility, the approximate quantities and locations of that waste should be listed in Part II of the inventory.

(16) Member States should take measures to prevent circumvention of ship recycling rules and to enhance transparency of ship recycling. As provided for in the Hong Kong Convention, Member States should report information concerning ships to which an inventory certificate has been issued, ships for which a statement of completion has been received and information regarding illegal ship recycling and follow-up actions that they have undertaken.

(17) Member States should lay down rules on penalties applicable to infringements of this Regulation and ensure that those penalties are applied so as to prevent circumvention of ship recycling rules. The penalties, which may be of a civil or administrative nature, should be effective, proportionate and dissuasive.

(18) In accordance with the case-law of the Court of Justice, the courts of the Member States are required to interpret, to the fullest extent possible, the procedural rules relating to the conditions to be met in order to bring administrative or judicial proceedings in accordance with the objectives of Article 9(3) of the Aarhus Convention.

(19) In the interest of protecting human health and the environment and having regard to the 'polluter pays' principle, the Commission should assess the feasibility of establishing a financial mechanism applicable to all ships calling at a port or anchorage of a Member State, irrespective of the flag they are flying, to generate resources that would facilitate the environmentally sound recycling and treatment of ships without creating an incentive to out-flag.

(20) In order to take into account developments regarding the Hong Kong Convention, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of the updating of Annexes I and II to this Regulation. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level. The Commission, when preparing and drawing up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and to the Council.

(21) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council [4].

(22) Since the objective of this Regulation, namely to prevent, reduce or eliminate adverse effects on human health and the environment caused by the recycling, operation and maintenance of ships flying the flag of a Member State, cannot be sufficiently achieved by the Member States due to the international character of shipping and ship recycling, but can rather by reason of its scale and effects, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve that objective,

[1] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1).

[2] Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (OJ 196, 16.8.1967, p. 1).

[3] Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 200, 30.7.1999, p. 1).

[4] Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by the Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

HAVE ADOPTED THIS REGULATION:

TITLE I

SUBJECT-MATTER, SCOPE AND DEFINITIONS

Article 1

Subject matter and purpose

The purpose of this Regulation is to prevent, reduce, minimise and, to the extent practicable, eliminate accidents, injuries and other adverse effects on human health and the environment caused by ship recycling. The purpose of this Regulation is to enhance safety, the protection of human health and of the Union marine environment throughout a ship's life-cycle, in particular to ensure that hazardous waste from such ship recycling is subject to environmentally sound management.

This Regulation also lays down rules to ensure the proper management of hazardous materials on ships.

This Regulation also aims to facilitate the ratification of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 ('the Hong Kong Convention').

Article 2

Scope

1. This Regulation, with the exception of Article 12, shall apply to ships flying the flag of a Member State.

Article 12 shall apply to ships flying the flag of a third country calling at a port or anchorage of a Member State.

2. This Regulation shall not apply to:

(a) any warships, naval auxiliary, or other ships owned or operated by a state and used, for the time being, only on government non-commercial service;

(b) ships of less than 500 gross tonnage (GT);

(c) ships operating throughout their life only in waters subject to the sovereignty or jurisdiction of the Member State whose flag the ship is flying.

Article 3

Definitions

1. For the purposes of this Regulation, the following definitions apply:

(1) 'ship' means a vessel of any type whatsoever operating or having operated in the marine environment, and includes submersibles, floating craft, floating platforms, self-elevating platforms, Floating Storage Units (FSUs), and Floating Production Storage and Offloading Units (FPSOs), as well as a vessel stripped of equipment or being towed;

(2) 'new ship' means a ship for which either:

(a) the building contract is placed on or after the date of application of this Regulation;

(b) in the absence of a building contract, the keel is laid or the ship is at a similar stage of construction six months after the date of application of this Regulation or thereafter; or

(c) the delivery takes place thirty months after the date of application of this Regulation or thereafter;

(3) 'tanker' means an oil tanker as defined in Annex I to the Convention for the Prevention of Pollution from Ships ('MARPOL Convention') or a Noxious Liquid Substances (NLS) tanker as defined in Annex II to that Convention;

(4) 'hazardous material' means any material or substance which is liable to create hazards to human health and/or the environment;

(5) 'operationally generated waste' means waste water and residues generated by the normal operation of ships subject to the requirements of the MARPOL Convention;

(6) 'ship recycling' means the activity of complete or partial dismantling of a ship at a ship recycling facility in order to recover components and materials for reprocessing, for preparation for re-use or for re-use, whilst ensuring the management of hazardous and other materials, and includes associated operations such as storage and treatment of components and materials on site, but not their further processing or disposal in separate facilities;

(7) 'ship recycling facility' means a defined area that is a yard or facility located in a Member State or in a third country and used for the recycling of ships;

(8) 'ship recycling company' means, the owner of the ship recycling facility or any other organisation or person who has assumed the responsibility for the operation of the ship recycling activity from the owner of the ship recycling facility;

(9) 'administration' means a governmental authority designated by a Member State as being responsible for duties related to ships flying its flag or to ships operating under its authority;

(10) 'recognised organisation' means an organisation recognised in accordance with Regulation (EC) No 391/2009 of the European Parliament and of the Council [1];

(11) 'competent authority' means a governmental authority or authorities designated by a Member State or a third country as responsible for ship recycling facilities, within a specified geographical area or an area of expertise, relating to all operations within the jurisdiction of that state;

(12) 'gross tonnage' means the gross tonnage (GT) calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurement of Ships, 1969, or any successor convention;

(13) 'competent person' means a person with suitable qualifications, training, and sufficient knowledge, experience and skill, for the performance of the specific work;

(14) 'ship owner' means the natural or legal person registered as the owner of the ship, including the natural or legal person owning the ship for a limited period pending its sale or handover to a ship recycling facility, or, in the absence of registration, the natural or legal person owning the ship or any other organisation or person, such as the manager or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship, and the legal person operating a state-owned ship;

(15) 'new installation' means the installation of systems, equipment, insulation or other material on a ship after the date of application of this Regulation;

(16) 'ship recycling plan' means a plan developed by the operator of the ship recycling facility for each specific ship to be recycled under its responsibility taking into account the relevant IMO guidelines and resolutions;

(17) 'ship recycling facility plan' means a plan prepared by the operator of the ship recycling facility and adopted by the board or the appropriate governing body of the ship recycling company that describes the operational processes and procedures involved in ship recycling at the ship recycling facility and that covers in particular workers' safety and training, protection of human health and the environment, roles and responsibilities of personnel, emergency preparedness and response, and systems for monitoring, reporting and record-keeping, taking into account the relevant IMO guidelines and resolutions;

(18) 'safe-for-entry' means a space that meets all of the following criteria:

(a) the oxygen content of the atmosphere and the concentration of flammable vapours are within safe limits;

(b) any toxic materials in the atmosphere are within permissible concentrations;

(c) any residues or materials associated with the work authorised by the competent person will not produce uncontrolled release of toxic materials or an unsafe concentration of flammable vapours under existing atmospheric conditions while maintained as directed;

(19) 'safe-for-hot work' means a space in which all of the following criteria are met:

(a) safe, non-explosive conditions, including gas-free status, exist for the use of electric arc or gas welding equipment, cutting or burning equipment or other forms of naked flame, as well as heating, grinding, or spark-generating operations;

(b) the safe-for-entry criteria set out in point 18 are met;

(c) existing atmospheric conditions do not change as a result of the hot work;

(d) all adjacent spaces have been cleaned, rendered inert or treated sufficiently to prevent the start or spread of fire;

(20) 'statement of completion' means a confirmatory statement issued by the operator of the ship recycling facility that the ship recycling has been completed in accordance with this Regulation;

(21) 'inventory certificate' means a ship-specific certificate that is issued to ships flying the flag of a Member State in accordance with Article 9 and that is supplemented by an inventory of hazardous materials in accordance with Article 5;

(22) 'ready for recycling certificate' means a ship-specific certificate that is issued to ships flying the flag of a Member State in accordance with Article 9(9) and that is supplemented by an inventory of hazardous materials in accordance with Article 5(7) and the approved ship recycling plan in accordance with Article 7;

[1] Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 on common rules and standards for ship inspection and survey organisations (OJ L 131, 28.5.2009, p. 11).

(23) 'statement of compliance' means a ship-specific certificate that is issued to ships flying the flag of a third country and that is supplemented by an inventory of hazardous materials in accordance with Article 12;

(24) 'light displacement tonnes (LDT)' means the weight of a ship in tonnes without cargo, fuel, lubricating oil in storage tanks, ballast water, fresh water, feedwater, consumable stores, passengers and crew and their effects and it is the sum of the weight of the hull, structure, machinery, equipment and fittings of the ship.

2. For the purposes of Article 7(2)(d) and Articles 13, 15 and 16,

(a) 'waste', 'hazardous waste', 'treatment' and 'waste management' have the same meaning as in Article 3 of Directive 2008/98/EC;

(b) 'site inspection' means an inspection of the ship recycling facility assessing whether the conditions on site are consistent with those described in any relevant documentation provided;

(c) 'worker' means any person who performs work, either regularly or temporarily, in the context of an employment relationship, including the personnel working for contractors and subcontractors;

(d) 'environmentally sound management' means taking all practicable steps to ensure that waste and hazardous materials are managed in a manner which protects human health and the environment against the adverse effects which may result from such materials and waste.

3. For the purposes of point 13 of paragraph 1, a competent person may be a trained worker or a managerial employee capable of recognising and evaluating occupational hazards, risks, and employee exposure to potentially hazardous materials or unsafe conditions in a ship recycling facility, and who is capable of specifying the necessary protection and precautions to be taken to eliminate or reduce those hazards, risks or that exposure.

Without prejudice to Directive 2005/36/EC of the European Parliament and of the Council [1], the competent authority may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.

TITLE II

SHIPS

Article 4

Control of hazardous materials

The installation or use of hazardous materials referred to in Annex I on ships shall be prohibited or restricted as specified in Annex I, without prejudice to other requirements of relevant Union law which may require further measures.

Article 5

Inventory of hazardous materials

1. Each new ship shall have on board an inventory of hazardous materials, which shall identify at least the hazardous materials referred to in Annex II and contained in the structure or equipment of the ship, their location and approximate quantities.

2. Subject to point (b) of Article 32(2), existing ships shall comply, as far as practicable, with paragraph 1.

In the case of ships going for recycling, they shall comply, as far as practicable, with paragraph 1 of this Article from the date of the publication of the European List of ship recycling facilities ('the European List') as set out in Article 16(2).

Subject to point (b) of Article 32(2), when the inventory of hazardous materials is developed it shall identify, at least, the hazardous materials listed in Annex I.

3. The inventory of hazardous materials shall:

(a) be specific to each ship;

(b) provide evidence that the ship complies with the prohibition or restrictions on installing or using hazardous materials in accordance with Article 4;

(c) be compiled taking into account the relevant IMO guidelines;

(d) be verified either by the administration or a recognised organisation authorised by it.

4. In addition to paragraph 3, for existing ships a plan shall be prepared describing the visual or sampling check by which the inventory of hazardous materials is developed and taking into account the relevant IMO guidelines.

5. The inventory of hazardous materials shall consist of three parts:

(a) a list of hazardous materials referred to in Annexes I and II, in accordance with the provisions of paragraphs 1 and 2 of this Article, and contained in the structure or equipment of the ship, with an indication of their location and approximate quantities (Part I);

[1] Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (OJ L 255, 30.9.2005, p. 22).

(b) a list of the operationally generated waste present on board the ship (Part II);

(c) a list of the stores present on board the ship (Part III).

6. Part I of the inventory of hazardous materials shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing any hazardous materials referred to in Annex II and relevant changes in the structure and equipment of the ship.

7. Prior to recycling, and taking into account the relevant IMO guidelines, the inventory of hazardous materials shall, in addition to the properly maintained and updated Part I, incorporate Part II for operationally generated waste and Part III for stores, and be verified by the administration or a recognised organisation authorised by it.

8. The Commission shall be empowered to adopt delegated acts in accordance with Article 24 concerning the updating of the list of items for the inventory of hazardous materials in Annexes I and II to ensure that the lists include at least the substances listed in Appendices I and II of the Hong Kong Convention.

The Commission shall adopt a separate delegated act in respect of each substance to be added or deleted from Annexes I or II.

Article 6

General requirements for ship owners

1. When preparing to send a ship for recycling, ship owners shall:

(a) provide the operator of the ship recycling facility with all ship-relevant information, necessary for the development of the ship recycling plan set out in Article 7;

(b) notify in writing the relevant administration, within a timeframe to be determined by that administration, of the intention to recycle the ship in a specified ship recycling facility or facilities. The notification shall include at least:

(i) the inventory of hazardous materials; and

(ii) all ship-relevant information provided under point (a).

2. Ship owners shall ensure that ships destined to be recycled:

(a) are only recycled at ship recycling facilities that are included in the European List;

(b) conduct operations in the period prior to entering the ship recycling facility in such a way as to minimise the amount of cargo residues, remaining fuel oil, and ship generated waste remaining on board;

(c) hold a ready for recycling certificate issued by the administration or a recognised organisation authorised by it prior to any recycling of the ship and after the receipt of the ship recycling plan approved in accordance with Article 7(3).

3. Ship owners shall ensure that tankers arrive at the ship recycling facility with cargo tanks and pump rooms in a condition ready for certification as safe-for-hot work.

4. Ship owners shall provide the operator of the ship recycling facility with a copy of the ready for recycling certificate issued in accordance with Article 9.

5. Ship owners shall be responsible for the ship and shall make arrangements to maintain that ship in compliance with the requirements of the administration of the Member State whose flag the ship is flying up until such time as the operator of the ship recycling facility accepts responsibility for that ship. The operator of the ship recycling facility may decline to accept the ship for recycling if the condition of the ship does not correspond substantially with the particulars of the inventory certificate, including where Part I of the inventory of hazardous materials has not been properly maintained and updated, reflecting changes in the ship's structure and equipment. In such circumstances, the ship owner shall retain responsibility for that ship and shall inform the administration thereof without delay.

Article 7

Ship recycling plan

1. A ship-specific ship recycling plan shall be developed prior to any recycling of a ship. The ship recycling plan shall address any ship-specific considerations that are not covered in the ship recycling facility plan or that require special procedures.

2. The ship recycling plan shall:

(a) be developed by the operator of the ship recycling facility in accordance with the relevant provisions of the Hong Kong Convention and taking into account the relevant IMO guidelines and the ship-relevant information provided by the ship owner in accordance with Article 6(1)(a) so that its contents are consistent with the information contained in the inventory of hazardous materials;

(b) clarify whether and to what extent any preparatory work, such as pre-treatment, identification of potential hazards and removal of stores, is to take place at a location other than the ship recycling facility identified in the ship recycling plan. The ship recycling plan should include the location where the ship will be placed during recycling operations and a concise plan for the arrival and safe placement of the specific ship to be recycled;

(c) include information concerning the establishment, maintenance and monitoring of the safe-for-entry and safe-for-hot work conditions for the specific ship, taking into account features such as its structure, configuration and previous cargo, and other necessary information on how the ship recycling plan is to be implemented;

(d) include information on the type and amount of hazardous materials and of waste to be generated by the recycling of the specific ship, including the materials and the waste identified in the inventory of hazardous materials, and on how they will be managed and stored in the ship recycling facility as well as in subsequent facilities; and

(e) be prepared separately, in principle, for each ship recycling facility involved where more than one ship recycling facility is to be used, and identify the order of use and the authorised activities that will occur at those facilities.

3. The ship recycling plan shall be tacitly or explicitly approved by the competent authority in accordance with the requirements of the state where the ship recycling facility is located, where applicable.

Explicit approval shall be given when the competent authority sends a written notification of its decision on the ship recycling plan to the operator of the ship recycling facility, the ship owner and the administration.

Tacit approval shall be deemed given, if no written objection to the ship recycling plan is communicated by the competent authority to the operator of the ship recycling facility, the ship owner and the administration within a review period laid down in accordance with the requirements of the state where the ship recycling facility is located, where applicable, and notified in accordance with Article 15(2)(b).

4. Member States may require their administration to send to the competent authority of the state where the ship recycling facility is located the information provided by the ship owner pursuant to Article 6(1)(b) and the following details:

(i) the date on which the ship was registered within the State whose flag it flies;

(ii) the ship's identification number (IMO number);

(iii) the hull number on new-building delivery;

(iv) the name and type of the ship;

(v) the port at which the ship is registered;

(vi) the name and address of the ship owner as well as the IMO registered owner identification number;

(vii) the name and address of the company;

(viii) the name of any classification societies with which the ship is classed;

(ix) the ship's main particulars (Length overall (LOA), Breadth (Moulded), Depth (Moulded), LDT, Gross and Net tonnage, and engine type and rating).

Article 8

Surveys

1. Surveys of ships shall be carried out by officers of the administration, or of a recognised organisation authorised by it, taking into account the relevant IMO guidelines.

2. Where the administration uses recognised organisations to conduct surveys, as described in paragraph 1, it shall, as a minimum, empower such recognised organisations to:

— require a ship that they survey to comply with this Regulation; and

— carry out surveys if requested by the appropriate authorities of a Member State.

3. Ships shall be subject to the following surveys:

(a) an initial survey;

(b) a renewal survey;

(c) an additional survey;

(d) a final survey.

4. The initial survey of a new ship shall be conducted before the ship is put in service, or before the inventory certificate is issued. For existing ships, an initial survey shall be conducted by 31 December 2020. The survey shall verify that Part I of the inventory of hazardous materials complies with the requirements of this Regulation.

5. The renewal survey shall be conducted at intervals specified by the administration, which shall not exceed five years. The renewal survey shall verify that Part I of the inventory of hazardous materials complies with the requirements of this Regulation.

6. The additional survey, either general or partial depending on the circumstances, shall be conducted if requested by the ship owner after a change, replacement or significant repair of the structure, equipment, systems, fittings, arrangements and material, which has an impact on the inventory of hazardous materials. The survey shall be such as to ensure that any change, replacement, or significant repair has been made in a manner that ensures that the ship continues to comply with the requirements of this Regulation, and that Part I of the inventory of hazardous materials is amended as necessary.

7. The final survey shall be conducted prior to the ship being taken out of service and before the recycling of the ship has started.

That survey shall verify that:

(a) the inventory of hazardous materials complies with the requirements of Article 5;

(b) the ship recycling plan properly reflects the information contained in the inventory of hazardous materials and complies with the requirements of Article 7;

(c) the ship recycling facility where the ship is to be recycled is included in the European List.

8. For existing ships intended for ship recycling, the initial survey and the final survey may be conducted at the same time.

Article 9

Issuance and endorsement of certificates

1. After successful completion of an initial or renewal survey, the administration or a recognised organisation authorised by it shall issue an inventory certificate. That certificate shall be supplemented by Part I of the inventory of hazardous materials, referred to in Article 5(5)(a).

Where the initial survey and the final survey are conducted at the same time as provided for in Article 8(8), only the ready for recycling certificate referred to in paragraph 9 of this Article shall be issued.

The Commission shall adopt implementing acts to establish the format of the inventory certificate to ensure it is consistent with Appendix 3 to the Hong Kong Convention. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 25 of this Regulation.

2. An inventory certificate shall be endorsed at the request of the ship owner either by the administration or by a recognised organisation authorised by it after successful completion of an additional survey conducted in accordance with Article 8(6).

3. Subject to paragraph 4, the administration or recognised organisation authorised by it shall issue or endorse, as appropriate, an inventory certificate, where the renewal survey is successfully completed:

(a) in the three month period before the expiry date of the existing inventory certificate, and the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing one;

(b) after the expiry date of the existing inventory certificate, and the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing one;

(c) more than three months before the expiry date of the existing inventory certificate, and the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.

4. Where a renewal survey has been successfully completed and a new inventory certificate cannot be issued or placed on board before the expiry date of the existing certificate, the administration or recognised organisation authorised by it shall endorse the existing certificate and such a certificate shall be accepted as valid for a further period which shall not exceed five months from the date of expiry.

5. In case of an inventory certificate issued for a period of less than five years, the administration or the recognised organisation authorised by it may extend the validity of the existing certificate for a further period which shall not exceed five years.

6. In special circumstances as determined by the administration, a new inventory certificate need not be dated from the date of expiry of the existing certificate as required by points (a) and (b) of paragraph 3 and paragraphs 7 and 8. In those circumstances, the new certificate shall be valid for a period not exceeding five years from the date of completion of the renewal survey.

7. Where a ship is not at the port or anchorage where it is to be surveyed when the inventory certificate expires, the administration may, if it is proper to do so, extend the period of validity of the inventory certificate for a period not exceeding three months to enable the ship to complete its voyage to the port in which it is to be surveyed. Any such extension granted shall be conditional on the survey being completed at that port before the ship leaves. A ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled, by virtue of such extension, to leave the port without having a new certificate. When the renewal survey is completed, the new inventory certificate shall be valid for a period not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

8. An inventory certificate for a ship engaged on short voyages and which has not been extended under the conditions referred to in paragraph 7 may be extended by the administration for a period of grace of up to one month from its expiry. When the renewal survey is completed, the new inventory certificate shall be valid for a period not exceeding five years from the date of expiry of the existing certificate before the extension was granted.

9. After successful completion of a final survey in accordance with Article 8(7), the administration or a recognised organisation authorised by it shall issue a ready for recycling certificate. That certificate shall be supplemented by the inventory of hazardous materials and the ship recycling plan.

The Commission shall adopt implementing acts to establish the format of the ready for recycling certificate to ensure it is consistent with Appendix 4 to the Hong Kong Convention. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 25 of this Regulation. A ready for recycling certificate issued after a final survey in accordance with the first subparagraph of this paragraph shall be accepted by the other Member States and regarded for the purposes of this Regulation as having the same validity as a ready for recycling certificate issued by them.

Article 10

Duration and validity of certificates

1. Subject to Article 9, an inventory certificate shall be issued for a period specified by the administration, which shall not exceed five years.

2. An inventory certificate issued or endorsed under Article 9 shall cease to be valid in any of the following cases:

(a) if the condition of the ship does not correspond substantially with the particulars of that inventory certificate, including where Part I of the inventory of hazardous materials has not been properly maintained and updated, reflecting changes in ship structure and equipment, taking into account the relevant IMO guidelines;

(b) where the renewal survey is not completed within the intervals specified in Article 8(5).

3. A ready for recycling certificate shall be issued by the administration or by a recognised organisation authorised by it for a period not exceeding three months.

4. A ready for recycling certificate issued under Article 9(9) shall cease to be valid where the condition of the ship does not correspond substantially with the particulars of the inventory certificate.

5. By way of derogation from paragraph 3, the ready for recycling certificate may be extended by the administration or by a recognised organisation authorised by it for a single point to point voyage to the ship recycling facility.

Article 11

Port State control

1. Member States shall apply control provisions for ships in accordance with their national law having regard to Directive 2009/16/EC. Subject to paragraph 2, any such inspection shall be limited to checking that either an inventory certificate or a ready for recycling certificate is kept on board, which, if valid, shall be considered sufficient for the inspection to be approved.

2. A detailed inspection may be carried out by the relevant authority involved in port State control activities, taking into account the relevant IMO guidelines, where a ship does not carry a valid certificate or there are clear grounds for believing either that:

(a) the condition of the ship or its equipment does not correspond substantially with the particulars of that certificate, Part I of the inventory of hazardous materials, or both; or

(b) there is no procedure implemented on board the ship for the maintenance of Part I of the inventory of hazardous materials.

3. A ship may be warned, detained, dismissed or excluded from the ports or offshore terminals under the jurisdiction of a Member State in the event that it fails to submit to the relevant authorities of that Member State a copy of the inventory certificate or the ready for recycling certificate, as appropriate and on request of those authorities, without prejudice to Article 9. A Member State taking such action shall immediately inform the administration concerned. Failure to update the inventory of hazardous materials shall not constitute a detainable deficiency, but any inconsistencies in the inventory of hazardous materials shall be reported to the administration concerned and shall be rectified at the time of the next survey.

4. Access to a specific port or anchorage may be permitted by the relevant authority of a Member State in the event of force majeure or overriding safety considerations, or to reduce or minimise the risk of pollution or to have deficiencies rectified, provided that adequate measures to the satisfaction of the relevant authority of that Member State have been implemented by the owner, the operator or the master of the ship to ensure safe entry.

Article 12

Requirements for ships flying the flag of a third country

1. Subject to point (b) of Article 32(2), when calling at a port or anchorage of a Member State, a ship flying the flag of a third country shall have on board an inventory of hazardous materials that complies with Article 5(2).

Notwithstanding the first subparagraph, access to a specific port or anchorage may be permitted by the relevant authority of a Member State in the event of force majeure or overriding safety considerations, or to reduce or minimise the risk of pollution or to have deficiencies rectified, provided that adequate measures to the satisfaction of the relevant authority of that Member State have been implemented by the owner, the operator or the master of the ship to ensure safe entry.

2. The installation of hazardous materials referred to in Annex I on ships flying the flag of a third country, whilst in a port or anchorage of a Member State, shall be prohibited or restricted as specified in Annex I.

The use of hazardous materials referred to in Annex I on ships flying the flag of a third country, whilst in a port or anchorage of a Member State, shall be prohibited or restricted as specified in Annex I, without prejudice to the exemptions and transitional arrangements applicable to those materials under international law.

3. The inventory of hazardous materials shall be specific to each ship, be compiled taking into account the relevant IMO guidelines and serve to clarify that the ship complies with paragraph 2 of this Article. When the inventory of hazardous materials is developed it shall identify, at least, the hazardous materials listed in Annex I. A plan shall be established by the ship flying the flag of a third country describing the visual/sampling check by which the inventory of hazardous materials is developed taking into account the relevant IMO guidelines.

4. The inventory of hazardous materials shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing any hazardous materials referred to in Annex II and relevant changes in the structure and equipment of the ship, taking into account the exemptions and transitional arrangements applicable to those materials under international law.

5. A ship flying the flag of a third country may be warned, detained, dismissed or excluded from the ports or offshore terminals under the jurisdiction of a Member State in the event that it fails to submit to the relevant authorities of that Member State a copy of the statement of compliance in accordance with paragraphs 6 and 7, together with the inventory of hazardous materials, as appropriate and on request from those authorities. A Member State taking such action shall immediately inform the relevant authorities of the third country whose flag the ship concerned is flying. Failure to update the inventory of hazardous materials shall not constitute a detainable deficiency, but any inconsistencies in the inventory of hazardous materials shall be reported to the relevant authorities of the third country whose flag that ship is flying.

6. The statement of compliance shall be issued after verification of the inventory of hazardous materials by the relevant authorities of the third country whose flag the ship is flying or an organisation authorised by them, in accordance with the national requirements. The statement of compliance may be modelled on the basis of Appendix 3 to the Hong Kong Convention.

7. The statement of compliance and the inventory of hazardous materials shall be drawn up in an official language of the issuing relevant authorities of the third country whose flag the ship is flying and where the language used is not English, French or Spanish, the text shall include a translation into one of those languages.

8. Subject to point (b) of Article 32(2), ships flying the flag of a third country applying to be registered under the flag of a Member State shall ensure that an inventory of hazardous materials, as provided for in Article 5(2), is kept on board or is established within six months of the registration under the flag of that Member State or during any of the next surveys under Article 8(3), whichever comes first.

TITLE III

SHIP RECYCLING FACILITIES

Article 13

Requirements necessary for ship recycling facilities to be included in the European List

1. In order to be included in the European List, a ship recycling facility shall comply with the following requirements, in accordance with the relevant Hong Kong Convention provisions and taking into account the relevant guidelines of the IMO, the ILO, the Basel Convention and of the Stockholm Convention on Persistent Organic Pollutants and of other international guidelines:

(a) it is authorised by its competent authorities to conduct ship recycling operations;

(b) it is designed, constructed and operated in a safe and environmentally sound manner;

(c) it operates from built structures;

(d) it establishes management and monitoring systems, procedures and techniques which have the purpose of preventing, reducing, minimising and to the extent practicable eliminating:

(i) health risks to the workers concerned and to the population in the vicinity of the ship recycling facility, and

(ii) adverse effects on the environment caused by ship recycling;

(e) it prepares a ship recycling facility plan;

(f) it prevents adverse effects on human health and the environment, including the demonstration of the control of any leakage, in particular in intertidal zones;

(g) it ensures safe and environmentally sound management and storage of hazardous materials and waste, including:

(i) the containment of all hazardous materials present on board during the entire ship recycling process so as to prevent any release of those materials into the environment; and in addition, the handling of hazardous materials, and of waste generated during the ship recycling process, only on impermeable floors with effective drainage systems;

(ii) that all waste generated from the ship recycling activity and their quantities are documented and are only transferred to waste management facilities, including waste recycling facilities, authorised to deal with their treatment without endangering human health and in an environmentally sound manner;

(h) it establishes and maintain an emergency preparedness and response plan; ensures rapid access for emergency response equipment, such as fire-fighting equipment and vehicles, ambulances and cranes, to the ship and all areas of the ship recycling facility;

(i) it provides for worker safety and training, including ensuring the use of personal protective equipment for operations requiring such use;

(j) it establishes records on incidents, accidents, occupational diseases and chronic effects and, if requested by its competent authorities, reports any incidents, accidents, occupational diseases or chronic effects causing, or with the potential for causing, risks to workers' safety, human health and the environment;

(k) it agrees to comply with the requirements of paragraph 2.

2. The operator of a ship recycling facility shall:

(a) send the ship recycling plan, once approved in accordance with Article 7(3), to the ship owner and the administration or a recognised organisation authorised by it;

(b) report to the administration that the ship recycling facility is ready in every respect to start the recycling of the ship;

(c) when the total or partial recycling of a ship is completed in accordance with this Regulation, within 14 days of the date of the total or partial recycling in accordance with the ship recycling plan, send a statement of completion to the administration which issued the ready for recycling certificate for the ship. The statement of completion shall include a report on incidents and accidents damaging human health and/or the environment, if any.

3. The Commission shall adopt implementing acts to establish the format of:

(a) the report required by point (b) of paragraph 2 of this Article to ensure it is consistent with Appendix 6 to the Hong Kong Convention; and

(b) the statement required by point (c) of paragraph 2 of this Article to ensure it is consistent with Appendix 7 to the Hong Kong Convention.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 25 of this Regulation.

Article 14

Authorisation of ship recycling facilities located in a Member State

1. Without prejudice to other relevant provisions of Union law, competent authorities shall authorise ship recycling facilities located on their territory that comply with the requirements set out in Article 13 to conduct ship recycling. That authorisation may be granted to the respective ship recycling facilities for a maximum period of five years and renewed accordingly.

Provided that the requirements of this Regulation are complied with, any permit produced pursuant to other relevant national or Union law provisions may be combined with the authorisation under this Article to form a single permit, where such a format obviates the unnecessary duplication of information and the duplication of work by the operator of the ship recycling facility or the ship recycling company or the competent authority. In those cases the authorisation may be extended in accordance with the permit regime referred to in the first subparagraph, but not exceeding a maximum period of five years.

2. Member States shall establish and update a list of the ship recycling facilities that they have authorised in accordance with paragraph 1.

3. The list referred to in paragraph 2 shall be communicated to the Commission without delay and not later than 31 March 2015.

4. Where a ship recycling facility ceases to comply with the requirements set out in Article 13, the Member State where that ship recycling facility is located shall suspend or withdraw the authorisation given to it or require corrective actions by the ship recycling company concerned and shall inform the Commission thereof without delay.

5. Where a ship recycling facility has been authorised in accordance with paragraph 1, the Member State concerned shall inform the Commission thereof without delay.

Article 15

Ship recycling facilities located in a third country

1. A ship recycling company owning a ship recycling facility located in a third country and intending to recycle ships flying the flag of a Member State shall submit an application to the Commission for inclusion of that ship recycling facility in the European List.

2. The application referred to in paragraph 1 shall be accompanied by evidence that the ship recycling facility concerned complies with the requirements set out in Article 13 in order to conduct ship recycling and to be included in the European List in accordance with Article 16.

In particular, the ship recycling company shall:

(a) identify the permit, license or authorisation granted by its competent authorities to conduct the ship recycling and, where relevant, the permit, license or authorisation granted by the competent authorities to all its contractors and sub-contractors directly involved in the process of ship recycling and specify all information referred to in Article 16(2);

(b) indicate whether the ship recycling plan will be approved by the competent authority through a tacit or explicit procedure, specifying the review period relating to tacit approval, in accordance with national requirements, where applicable;

(c) confirm that it will only accept a ship flying the flag of a Member State for recycling in accordance with this Regulation;

(d) provide evidence that the ship recycling facility is capable of establishing, maintaining and monitoring of the safe-for-hot work and safe-for-entry criteria throughout the ship recycling process;

(e) attach a map of the boundary of the ship recycling facility and the location of ship recycling operations within it;

(f) for each hazardous material referred to in Annex I and additional hazardous material which might be part of the structure of a ship, specify:

(i) whether the ship recycling facility is authorised to carry out the removal of the hazardous material. Where it is so authorised, the relevant personnel authorised to carry out the removal shall be identified and evidence of their competence shall be provided;

(ii) which waste management process will be applied within or outside the ship recycling facility such as incineration, landfilling or another waste treatment method, the name and address of the waste treatment facility if different from that of the ship recycling facility, and provide evidence that the applied process will be carried out without endangering human health and in an environmentally sound manner;

(g) confirm that the company adopted a ship recycling facility plan, taking into account the relevant IMO guidelines;

(h) provide the information necessary to identify the ship recycling facility.

3. The Commission shall be empowered to adopt implementing acts to specify the format of the information required to identify the ship recycling facility. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 25.

4. In order to be included in the European List, compliance by ship recycling facilities located in third countries with the requirements set out in Article 13 shall be certified following a site inspection by an independent verifier with appropriate qualifications. The certification shall be submitted to the Commission by the ship recycling company when applying for inclusion in the European List and, every five years thereafter, upon renewal of the inclusion in the European List. The initial inclusion on the list and the renewal thereof shall be supplemented by a mid-term review to confirm compliance with the requirements set out in Article 13.

By applying for inclusion in the European List, ship recycling companies accept the possibility of the ship recycling facility concerned being subject to site inspections by the Commission or agents acting on its behalf prior to or after their inclusion in the European List in order to verify compliance with the requirements set out in Article 13. The independent verifier, the Commission or agents acting on its behalf shall cooperate with the competent authorities of the third country where the ship recycling facility is located in order to carry out those site inspections.

The Commission may issue technical guidance notes in order to facilitate such certification.

5. For the purposes of Article 13, with regard to the waste recovery or disposal operation concerned, environmentally sound management may only be assumed to be in place provided the ship recycling company can demonstrate that the waste management facility which receives the waste will be operated in accordance with human health and environmental protection standards that are broadly equivalent to relevant international and Union standards.

6. The ship recycling company shall provide updated evidence without delay in the event of any changes to the information provided to the Commission and shall, in any event, three months prior to expiry of each five year period of inclusion on the European List, declare that:

(a) the evidence that it has provided is complete and up-to-date;

(b) the ship recycling facility continues and will continue to comply with the requirements of Article 13.

Article 16

Establishment and updating of the European List

1. The Commission shall adopt implementing acts to establish a European List of ship recycling facilities which:

(a) are located in the Union and have been notified by the Member States in accordance with Article 14(3);

(b) are located in a third country and whose inclusion is based on an assessment of the information and supporting evidence provided or gathered in accordance with Article 15.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 25.

2. The European List shall be published in the *Official Journal of the European Union* and on the website of the Commission not later than 31 December 2016. It shall be divided into two sub-lists indicating the ship recycling facilities located in a Member State and the ship recycling facilities located in a third country.

The European List shall include all of the following information about the ship recycling facility:

(a) the method of recycling;

(b) the type and size of ships that can be recycled;

(c) any limitation and conditions under which the ship recycling facility operates, including as regards hazardous waste management;

(d) details on the explicit or tacit procedure, as referred to in Article 7(3), for the approval of the ship recycling plan by the competent authority;

(e) the maximum annual ship recycling output.

3. The European List shall indicate the date of expiry of the inclusion of the ship recycling facility. An inclusion shall be valid for a maximum period of five years and shall be renewable.

4. The Commission shall adopt implementing acts to regularly update the European List, in order to:

(a) include a ship recycling facility in the European List where:

(i) it has been authorised in accordance with Article 14; or

(ii) its inclusion in the European List is decided in accordance with paragraph 1(b) of this Article;

(b) remove a ship recycling facility from the European List where:

(i) the ship recycling facility ceases to comply with the requirements set out in Article 13; or

(ii) the updated evidence is not provided at least three months prior to expiry of the five-year period as set out in paragraph 3 of this Article.

Those implementing acts shall be adopted, in accordance with the examination procedure referred to in Article 25.

5. In establishing and updating the European List, the Commission shall act in accordance with the principles enshrined in the Treaties and with the international obligations of the Union.

6. Member States shall communicate to the Commission all information that may be relevant in the context of updating the European List. The Commission shall forward all relevant information to the other Member States.

TITLE IV

GENERAL ADMINISTRATIVE PROVISIONS

Article 17

Language

1. The ship recycling plan referred to in Article 7 shall be developed in a language accepted by the state authorising the ship recycling facility. Where the language used is not English, French or Spanish, the ship recycling plan shall be translated into one of those languages, except where the administration is satisfied that that is unnecessary.

2. The inventory certificate and the ready for recycling certificate issued pursuant to Article 9 shall be drawn up in an official language of the issuing administration. Where the language used is not English, French or Spanish, the text shall include a translation into one of those languages.

Article 18

Designation of competent authorities and administrations

1. Member States shall designate the competent authorities and administrations responsible for the application of this Regulation and shall notify the Commission of those designations. Member States shall immediately notify the Commission of any changes in such information.

2. The Commission shall publish on its website lists of the designated competent authorities and administrations and shall update those lists as appropriate.

Article 19

Designation of contact persons

1. Member States and the Commission shall each designate one or more contact persons responsible for informing or advising natural or legal persons making enquiries. The contact person of the Commission shall forward to the contact persons of the Member States any questions received which concern the latter, and vice versa.

2. Member States shall notify the Commission of the designation of contact persons. Member States shall immediately notify the Commission of any changes to that information.

3. The Commission shall publish on its website lists of the designated contact persons and shall update those lists as appropriate.

Article 20

Meeting of contact persons

The Commission shall, if requested by Member States or where it considers it appropriate, periodically organise a meeting of the contact persons to discuss the questions raised by the implementation of this Regulation. Relevant stakeholders shall be invited to such meetings, or parts of meetings, where all Member States and the Commission are in agreement that it is appropriate to do so.

TITLE V

REPORTING AND ENFORCEMENT

Article 21

Reports by the Member States

1. Each Member State shall send to the Commission a report containing the following:

(a) a list of the ships flying its flag to which a ready for recycling certificate has been issued, and the name of the ship recycling company and the location of the ship recycling facility as shown in the ready for recycling certificate;

(b) a list of the ships flying its flag for which a statement of completion has been received;

(c) information regarding illegal ship recycling, penalties and follow-up actions undertaken by the Member State.

2. Every three years, Member States shall electronically transmit the report to the Commission no later than nine months after the end of the three-year period covered by it.

The first electronic report shall cover the period from the date of application of this Regulation to the end of the first regular three-year reporting period, specified in Article 5 of Council Directive 91/692/EEC [1], falling after the starting date of the first reporting period.

The Commission shall publish a report on the application of this Regulation no later than nine months after receiving the reports from the Member States.

3. The Commission shall enter this information in an electronic database that is permanently accessible to the public.

Article 22

Enforcement in Member States

1. Member States shall lay down provisions on penalties applicable to infringements of this Regulation and shall take all the measures necessary to ensure that they are applied. The penalties provided for shall be effective, proportionate and dissuasive.

2. Member States shall cooperate, bilaterally or multilaterally, with one another in order to facilitate the prevention and detection of potential circumvention and breach of this Regulation.

3. Member States shall designate those members of their permanent staff responsible for the cooperation referred to in paragraph 2. That information shall be sent to the Commission, which shall distribute to those members a compiled list.

4. Member States shall communicate to the Commission the provisions of their national law relating to the enforcement of this Regulation and the applicable penalties.

Article 23

Request for action

1. Natural or legal persons affected or likely to be affected by a breach of Article 13 in conjunction with Article 15 and Article 16(1)(b) of this Regulation, or having a sufficient interest in environmental decision-making relating to the breach of Article 13 in conjunction with Article 15 and Article 16(1)(b) of this Regulation shall be entitled to request the Commission to take action under this Regulation with respect to such a breach or an imminent threat of such a breach.

The interest of any non-governmental organisation promoting environmental protection and meeting the requirements laid down in Article 11 of Regulation (EC) No 1367/2006 of the European Parliament and of the Council [2] shall be deemed sufficient for the purposes of the first subparagraph.

[1] Council Directive 91/692/EEC of 23 December 1991 standardizing and rationalizing reports on the implementation of certain Directives relating to the environment (OJ L 377, 31.12.1991, p. 48).

[2] Regulation (EC) No 1367/2006 of the European Parliament and of the Council of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (OJ L 264, 25.9.2006, p. 13).

2. The request for action shall be accompanied by the relevant information and data supporting that request.

3. Where the request for action and the accompanying information and data show in a plausible manner that a breach of Article 13 in conjunction with Article 15 and Article 16(1)(b) has occurred, or that there is an imminent threat of such a breach, the Commission shall consider any such requests for action and information and data. In such circumstances, the Commission shall give the ship recycling company concerned an opportunity to make its views known with respect to the request for action and the accompanying information and data.

4. The Commission shall, without delay and in accordance with the relevant provisions of Union law, inform the persons who submitted a request pursuant to paragraph 1, of its decision to accede to or refuse the request for action and shall provide the reasons for it.

TITLE VI

FINAL PROVISIONS

Article 24

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.

2. The power to adopt delegated acts referred to in Article 5(8) shall be conferred on the Commission for a period of five years from 30 December 2013. The Commission shall draw up a report in respect of the delegation of power no later than nine months before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension no later than three months before the end of each period.

3. The delegation of power referred to in Article 5(8) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a late date specified therein. It shall not affect the validity of any delegated acts already in force.

4. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

5. A delegated act adopted pursuant to Article 5(8) shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 25

Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.

2. When reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

Article 26

Transitional provision

As of the date of publication of the European List, Member States may, prior to the date of application of this Regulation, authorise the recycling of ships in ship recycling facilities included in the European List. In such circumstances, Regulation (EC) No 1013/2006 shall not apply.

Article 27

Amendment to Regulation (EC) No 1013/2006

In Article 1(3) of Regulation (EC) No 1013/2006, the following point is added:

'(i) ships flying the flag of a Member State falling under the scope of Regulation (EU) No 1257/2013 of the European Parliament and of the Council (*).

(*) Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC (OJ L 330, 10.12.2013, p. 1.).'

Article 28

Amendment to Directive 2009/16/EC

In Annex IV, the following point is added:

'49. A certificate on the inventory of hazardous materials or a statement of compliance as applicable pursuant to Regulation (EU) No 1257/2013 of the European Parliament and of the Council (*).

(*) Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC (OJ L 330, 10.12.2013, p. 1).'

Article 29

Financial incentive

The Commission shall, by 31 December 2016, submit to the European Parliament and to the Council a report on the feasibility of a financial instrument that would facilitate safe and sound ship recycling and shall, if appropriate, accompany it by a legislative proposal.

Article 30

Review

1. The Commission shall assess which infringements of this Regulation should be brought under the scope of Directive 2008/99/EC to achieve equivalence of the provisions related to infringements between this Regulation and Regulation (EC) No 1013/2006. The Commission shall report on its findings by 31 December 2014 to the European Parliament and to the Council and, if appropriate, accompany it by a legislative proposal.

2. The Commission shall review this Regulation not later than 18 months prior to the date of entry into force of the Hong Kong Convention and at the same time, submit, if appropriate, any appropriate legislative proposals to that effect. This review shall consider the inclusion of ship recycling facilities authorised under the Hong Kong Convention in the European List in order to avoid duplication of work and administrative burden.

3. The Commission shall keep this Regulation under review and, if appropriate, make timely proposals to address developments relating to international Conventions, including the Basel Convention, should it prove necessary.

4. Notwithstanding paragraph 2, the Commission shall, by five years after the date of application of this Regulation, submit a report to the European Parliament and to the Council on the application of this Regulation, accompanied, if appropriate, by legislative proposals to ensure that its objectives are being met and its impact is ensured and justified.

Article 31

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Article 32

Application

1. This Regulation shall apply from the earlier of the following two dates, but not earlier than 31 December 2015:

(a) 6 months after the date that the combined maximum annual ship recycling output of the ship recycling facilities included in the European List constitutes not less than 2,5 million light displacement tonnes (LDT). The annual ship recycling output of a ship recycling facility is calculated as the sum of the weight of ships expressed in LDT that have been recycled in a given year in that facility. The maximum annual ship recycling output is determined by selecting the highest value occurring in the preceding 10-year period for each ship recycling facility, or, in the case of a newly authorised ship recycling facility, the highest annual value achieved at that facility; or

(b) on 31 December 2018.

2. However in relation to the following provisions the following dates of application shall apply:

(a) Article 2, the second subparagraph of Article 5(2), Articles 13, 14, 15, 16, 25 and 26 from 31 December 2014;

(b) the first and third subparagraphs of Article 5(2) and Article 12(1) and (8) from 31 December 2020.

3. The Commission shall publish in the *Official Journal of the European Union* a notice concerning the date of application of this Regulation when the conditions referred to in point (a) of paragraph 1 have been fulfilled.

4. If a Member State has closed its national ship register or, during a three year period, has had no ships registered under its flag, and as long as no ship is registered under its flag, that Member State may derogate from the provisions of this Regulation, except for Articles 4, 5, 11, 12, 13, 14, 16(6), 18, 19, 20, 21 and 22. Where a Member State intends to avail itself of this derogation, it shall notify the Commission at the latest on the date of application of this Regulation. Any subsequent change shall also be communicated to the Commission.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Strasbourg, 20 November 2013.

For the European Parliament
The President
M. SCHULZ

For the Council
The President
V. LEŠKEVIČIUS

ANNEX I

CONTROL OF HAZARDOUS MATERIALS

Hazardous Material	Definitions	Control measures
Asbestos	Materials containing asbestos	For all ships, new installation of materials which contain asbestos shall be prohibited.
Ozone-depleting substances	Controlled substances defined in Article 1(4) of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A,B,C or E to that Protocol in force at the time of application or interpretation of this Annex. Ozone-depleting substances that may be found on board ships include, but are not limited to: Halon 1211 Bromochlorodifluoromethane Halon 1301 Bromotrifluoromethane Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2) CFC-11 Trichlorofluoromethane CFC-12 Dichlorodifluoromethane CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane CFC-115 Chloropentafluoroethane HCFC-22 Chlorodifluoromethane	New installations which contain ozone-depleting substances shall be prohibited on all ships.
Polychlorinated biphenyls (PCB)	'Polychlorinated biphenyls' means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to ten chlorine atoms	For all ships, new installation of materials which contain Polychlorinated biphenyls shall be prohibited.
Perfluorooctane sulfonic acid (PFOS) [1]	'perfluorooctane sulfonic acid' (PFOS) means perfluorooctane sulfonic acid and its derivatives	New installations which contain perfluorooctane sulfonic acid (PFOS) and its derivatives shall be prohibited in accordance with Regulation (EC) No 850/2004 of the European Parliament and of the Council [2].
Anti-fouling compounds and systems	Anti-fouling compounds and systems regulated under Annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention) in force at the time of application or interpretation of this Annex.	1. No ship may apply anti-fouling systems containing organotin compounds as a biocide or any other anti-fouling system whose application or use is prohibited by the AFS Convention.

Hazardous Material	Definitions	Control measures
		2. No new ship or new installations on ships shall apply or employ anti-fouling compounds or systems in a manner inconsistent with the AFS Convention.

(1) Not applicable for ships flying the flag of a third country.
(2) Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (OJ L 158, 30.4.2004, p. 7).

ANNEX II

LIST OF ITEMS FOR THE INVENTORY OF HAZARDOUS MATERIALS

1. Any hazardous materials listed in Annex I
2. Cadmium and Cadmium Compounds
3. Hexavalent Chromium and Hexavalent Chromium Compounds
4. Lead and Lead Compounds
5. Mercury and Mercury Compounds
6. Polybrominated Biphenyl (PBBs)
7. Polybrominated Diphenyl Ethers (PBDEs)
8. Polychlorinated Naphthalenes (more than 3 chlorine atoms)
9. Radioactive Substances
10. Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)
11. Brominated Flame Retardant (HBCDD)

ANNEX 17

RESOLUTION MEPC.269(68)
(adopted on 15 May 2015)

2015 GUIDELINES FOR THE DEVELOPMENT OF THE INVENTORY OF HAZARDOUS MATERIALS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulations 5.1 and 5.2 of the annex to the Hong Kong Convention require that ships shall have on board an Inventory of Hazardous Materials which shall be prepared and verified taking into account guidelines, including any threshold values and exemptions contained in those guidelines, developed by the Organization,

NOTING ALSO resolution MEPC.197(62) by which it adopted *Guidelines for the development of the Inventory of Hazardous Materials* (the guidelines) and resolved to keep them under review,

RECOGNIZING the need to improve the guidance on threshold values and exemptions, as contained in the aforementioned guidelines,

HAVING CONSIDERED, at its sixty-eighth session, the recommendation made by the Sub-Committee on Pollution Prevention and Response, at its second session,

1 ADOPTS the *2015 Guidelines for the development of the Inventory of Hazardous Materials* as set out in the annex to this resolution;

2 INVITES Member Governments to apply the 2015 Guidelines as soon as possible, or latest when the Convention enters into force;

3 AGREES to keep the 2015 Guidelines under review in the light of experience gained with their application;

4 SUPERSEDES the guidelines adopted by resolution MEPC.197(62).

ANNEX

2015 GUIDELINES FOR THE DEVELOPMENT OF THE INVENTORY OF HAZARDOUS MATERIALS

1 INTRODUCTION

1.1 Objectives

These guidelines provide recommendations for developing the Inventory of Hazardous Materials (hereinafter referred to as "the Inventory" or "the IHM") to assist compliance with regulation 5 (Inventory of Hazardous Materials) of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention").

1.2 Application

These guidelines have been developed to provide relevant stakeholders (e.g. shipbuilders, equipment suppliers, repairers, shipowners and ship management companies) with the essential requirements for the practical and logical development of the Inventory.

1.3 Objectives

The objectives of the Inventory are to provide ship-specific information on the actual hazardous materials present on board, in order to protect health and safety and to prevent environmental pollution at ship recycling facilities. This information will be used by the ship recycling facilities in order to decide how to manage the types and amounts of materials identified in the Inventory of Hazardous Materials (regulation 9 of the Convention).

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention, with the following additional definitions which apply to these guidelines only.

2.1 *Exemption* (as referred to in regulation 5 of the Convention) means materials specified in paragraph 3.3 in these guidelines that do not need to be listed on the IHM, even if such materials or items exceed the IHM threshold values.

2.2 *Fixed* means the conditions that equipment or materials are securely fitted with the ship, such as by welding or with bolts, riveted or cemented, and used at their position, including electrical cables and gaskets.

2.3 *Homogeneous material* means a material of uniform composition throughout that cannot be mechanically disjointed into different materials, meaning that the materials cannot, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

2.4 *Loosely fitted equipment* means equipment or materials present on board the ship by the conditions other than "fixed", such as fire extinguishers, distress flares, and lifebuoys.

2.5 *Product* means machinery, equipment, materials and applied coatings on board a ship.

2.6 *Supplier* means a company which provides products; which may be a manufacturer, trader or agency.

2.7 *Supply chain* means the series of entities involved in the supply and purchase of materials and goods, from raw materials to final product.

2.8 *Threshold value* is defined as the concentration value in homogeneous materials.

3 REQUIREMENTS FOR THE INVENTORY

3.1 Scope of the Inventory

The Inventory consists of:

Part I: Materials contained in ship structure or equipment;

Part II: Operationally generated wastes; and

Part III: Stores.

3.2 Materials to be listed in the Inventory

3.2.1 Appendix 1 of these guidelines (Items to be listed in the Inventory of Hazardous Materials), provides information on the hazardous materials that may be found on board a ship. Materials set out in appendix 1 should be listed in the Inventory. Each item in appendix 1 of these guidelines is classified under tables A, B, C or D, according to its properties:

.1 table A comprises the materials listed in appendix 1 of the Convention;

.2 table B comprises the materials listed in appendix 2 of the Convention;

.3 table C (Potentially hazardous items) comprises items which are potentially hazardous to the environment and human health at ship recycling facilities; and

.4 table D (Regular consumable goods potentially containing hazardous materials) comprises goods which are not integral to a ship and are unlikely to be dismantled or treated at a ship recycling facility.

3.2.2 Tables A and B correspond to part I of the Inventory. Table C corresponds to parts II and III and table D corresponds to part III.

3.2.3 For loosely fitted equipment, there is no need to list this in part I of the Inventory. Such equipment which remains on board when the ship is recycled should be listed in part III.

3.2.4 Those batteries containing lead acid or other hazardous materials that are fixed in place should be listed in part I of the Inventory. Batteries that are loosely fitted, which includes consumer batteries and batteries in stores, should be listed in part III of the Inventory.

3.2.5 Similar materials or items that contain hazardous materials that potentially exceed the threshold value can be listed together (not individually) on the IHM with their general location and approximate amount specified there (hereinafter referred to as "bulk listing"). An example of how to list those materials and items is shown in row 3 of table 1 of appendix 3.

3.3 Exemptions – Materials not required to be listed in the Inventory

3.3.1 Materials listed in Table B that are inherent in solid metals or metal alloys, such as steels, aluminium, brasses, bronzes, plating and solders, provided they are used in general construction, such as hull, superstructure, pipes or housings for equipment and machinery, are not required to be listed in the Inventory.

3.3.2 Although electrical and electronic equipment is required to be listed in the Inventory, the amount of hazardous materials potentially contained in printed wiring boards (printed circuit boards) installed in the equipment does not need to be reported in the Inventory.

3.4 Standard format of the Inventory of Hazardous Materials

The Inventory should be developed on the basis of the standard format set out in appendix 2 of these guidelines: Standard format of the Inventory of Hazardous Materials. Examples of how to complete the Inventory are provided for guidance purposes only.

3.5 Revision to threshold values

Revised threshold values in tables A and B of appendix 1 should be used for IHMs developed or updated after the adoption of the revised values and need not be applied to existing IHMs and IHMs under development. However, when materials are added to the IHM, such as during maintenance, the revised threshold values should be applied and recorded in the IHM.

4 REQUIREMENTS FOR DEVELOPMENT OF THE INVENTORY

4.1 Development of part I of the Inventory for new ships[1]

4.1.1 Part I of the Inventory for new ships should be developed at the design and construction stage.

4.1.2 *Checking of materials listed in table A*

During the development of the Inventory (part I), the presence of materials listed in table A of appendix 1 should be checked and confirmed; the quantity and location of table A materials should be listed in part I of the Inventory. If such materials are used in compliance with the Convention, they should be listed in part I of the Inventory. Any spare parts containing materials listed in table A are required to be listed in part III of the Inventory.

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[1] In ascertaining whether a ship is a "new ship" or an "existing ship" according to the Convention, the term "a similar stage of construction" in regulation 1.4.2 of the annex to the Convention means the stage at which:

.1 construction identifiable with a specific ship begins: and
.2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

4.1.3 *Checking of materials listed in table B*

If materials listed in table B of appendix 1 are present in products above the threshold values provided in table B, the quantity and location of the products and the contents of the materials present in them should be listed in part I of the Inventory. Any spare parts containing materials listed in table B are required to be listed in part III of the Inventory.

4.1.4 *Process for checking of materials*

The checking of materials as provided in paragraphs 4.1.2 and 4.1.3 above should be based on the Material Declaration furnished by the suppliers in the shipbuilding supply chain (e.g. equipment suppliers, parts suppliers, material suppliers).

4.2 Development of part I of the Inventory for existing ships

4.2.1 In order to achieve comparable results for existing ships with respect to part I of the Inventory, the following procedure should be followed:

.1 collection of necessary information;

.2 assessment of collected information;

.3 preparation of visual/sampling check plan;

.4 onboard visual check and sampling check; and

.5 preparation of part I of the Inventory and related documentation.

4.2.2 The determination of hazardous materials present on board existing ships should, as far as practicable, be conducted as prescribed for new ships, including the procedures described in sections 6 and 7 of these guidelines. Alternatively, the procedures described in this section may be applied for existing ships, but these procedures should not be used for any new installation resulting from the conversion or repair of existing ships after the initial preparation of the Inventory.

4.2.3 The procedures described in this section should be carried out by the shipowner, who may draw upon expert assistance. Such an expert or expert party should not be the same as the person or organization authorized by the Administration to approve the Inventory).

4.2.4 Reference is made to appendix 4 (Flow diagram for developing part I of the Inventory for existing ships) and appendix 5 (Example of development process for part I of the Inventory for existing ships.

4.2.5 *Collection of necessary information (step 1)*

The shipowner should identify, research, request and procure all reasonably available documentation regarding the ship. Information that will be useful includes maintenance, conversion and repair documents; certificates, manuals, ship's plans, drawings and technical specifications; product information data sheets (such as Material Declarations); and hazardous material inventories or recycling information from sister ships. Potential sources of information could include previous shipowners, the ship builder, historical societies, classification society records and ship recycling facilities with experience working with similar ships.

4.2.6 *Assessment of collected information (step 2)*

The information collected in step 1 above should be assessed. The assessment should cover all materials listed in table A of appendix 1; materials listed in table B should be assessed as far as practicable. The results of the assessment should be reflected in the visual/sampling check plan.

4.2.7 *Preparation of visual/sampling check plan (step 3)*

4.2.7.1 To specify the materials listed in appendix 1 of these guidelines, a visual/sampling check plan should be prepared taking into account the collated information and any appropriate expertise. The visual/sampling check plan should be based on the following three lists:

.1 List of equipment, system and/or area for visual check (any equipment, system and/or area specified regarding the presence of the materials listed in appendix 1 by document analysis should be entered in the List of equipment, system and/or area for visual check);

.2 List of equipment, system and/or area for sampling check (any equipment, system and/or area which cannot be specified regarding the presence of the materials listed in appendix 1 by document or visual analysis should be entered in the List of equipment, system and/or area as requiring sampling check. A sampling check is the taking of samples to identify the presence or absence of hazardous material contained in the equipment, systems, and/or areas, by suitable and generally accepted methods such as laboratory analysis); and

.3 List of equipment, system and/or area classed as "potentially containing hazardous material" (any equipment, system and/or area which cannot be specified regarding the presence of the materials listed in appendix 1 by document analysis may be entered in the List of equipment, system and/or area classed as "potentially containing hazardous material" without the sampling check. The prerequisite for this classification is a comprehensible justification such as the impossibility of conducting sampling without compromising the safety of the ship and its operational efficiency).

4.2.7.2 Visual/sampling checkpoints should be all points where:

.1 the presence of materials to be considered for the Inventory part I as listed in appendix 1 is likely;

.2 the documentation is not specific; or

.3 materials of uncertain composition were used.

4.2.8 *Onboard visual/sampling check (step 4)*

4.2.8.1 The onboard visual/sampling check should be carried out in accordance with the visual/sampling check plan. When a sampling check is carried out, samples should be taken and the sample points should be clearly marked on the ship plan and the sample results should be referenced. Materials of the same kind may be sampled in a representative manner. Such materials are to be checked to ensure that they are of the same kind. The sampling check should be carried out drawing upon expert assistance.

4.2.8.2 Any uncertainty regarding the presence of hazardous materials should be clarified by a visual/sampling check. Checkpoints should be documented in the ship's plan and may be supported by photographs.

4.2.8.3 If the equipment, system and/or area of the ship are not accessible for a visual check or sampling check, they should be classified as "potentially containing hazardous material". The prerequisite for such classification should be the same prerequisite as in section 4.2.7. Any equipment, system and/or area classed as "potentially containing Hazardous Material" may be investigated or subjected to a sampling check at the request of the shipowner during a later survey (e.g. during repair, refit or conversion).

4.2.9 *Preparation of part I of the Inventory and related documentation (step 5)*

If any equipment, system and/or area is classed as either "containing hazardous material" or "potentially containing hazardous material", their approximate quantity and location should be listed in part I of the Inventory. These two categories should be indicated separately in the "Remarks" column of the Inventory.

4.2.10 *Testing methods*

4.2.10.1 Samples may be tested by a variety of methods. "Indicative" or "field tests" may be used when:

.1 the likelihood of a hazard is high;

.2 the test is expected to indicate that the hazard exists; and

.3 the sample is being tested by "specific testing" to show that the hazard is present.

4.2.10.2 Indicative or field tests are quick, inexpensive and useful on board the ship or on site, but they cannot be accurately reproduced or repeated, and cannot identify the hazard specifically, and therefore cannot be relied upon except as "indicators".

4.2.10.3 In all other cases, and in order to avoid dispute, "specific testing" should be used. Specific tests are repeatable, reliable and can demonstrate definitively whether a hazard exists or not. They will also provide a known type of the hazard. The methods indicated are found qualitative and quantitative appropriate and only testing methods to the same effect can be used. Specific tests are to be carried out by a suitably accredited laboratory, working to international standards[2] or equivalent, which will provide a written report that can be relied upon by all parties.

4.2.10.4 Specific test methods for appendix 1 materials are provided in appendix 9.

4.2.11 *Diagram of the location of hazardous materials on board a ship*

Preparation of a diagram showing the location of the materials listed in table A is recommended in order to help ship recycling facilities gain a visual understanding of the Inventory.

[2] For example ISO 17025.

4.3 Maintaining and updating part I of the Inventory during operations

4.3.1 Part I of the Inventory should be appropriately maintained and updated, especially after any repair or conversion or sale of a ship.

4.3.2 *Updating of part I of the Inventory in the event of new installation*

If any machinery or equipment is added to, removed or replaced or the hull coating is renewed, part I of the Inventory should be updated according to the requirements for new ships as stipulated in paragraphs 4.1.2 to 4.1.4. Updating is not required if identical parts or coatings are installed or applied.

4.3.3 *Continuity of part I of the Inventory*

Part I of the Inventory should belong to the ship and the continuity and conformity of the information it contains should be confirmed, especially if the flag, owner or operator of the ship changes.

4.4 Development of part II of the Inventory (operationally generated waste)

4.4.1 Once the decision to recycle a ship has been taken, part II of the Inventory should be developed before the final survey, taking into account that a ship destined to be recycled shall conduct operations in the period prior to entering the Ship Recycling Facility in a manner that minimizes the amount of cargo residues, fuel oil and wastes remaining on board (regulation 8.2 of the Convention).

4.4.2 *Operationally generated wastes to be listed in the Inventory*

If the wastes listed in part II of the Inventory provided in table C (Potentially hazardous items) of appendix 1 are intended for delivery with the ship to a ship recycling facility, the quantity of the operationally generated wastes should be estimated and their approximate quantities and locations should be listed in part II of the Inventory.

4.5 Development of part III of the Inventory (stores)

4.5.1 Once the decision to recycle has been taken, part III of the Inventory should be developed before the final survey, taking into account the fact that a ship destined to be recycled shall minimize the wastes remaining on board (regulation 8.2 of the Convention). Each item listed in part III should correspond to the ship's operations during its last voyage.

4.5.2 *Stores to be listed in the Inventory*

If the stores to be listed in part III of the Inventory provided in table C of appendix 1 are to be delivered with the ship to a ship recycling facility, the unit (e.g. capacity of cans and cylinders), quantity and location of the stores should be listed in part III of the Inventory.

4.5.3 *Liquids and gases sealed in ship's machinery and equipment to be listed in the Inventory*

If any liquids and gases listed in table C of appendix 1 are integral in machinery and equipment on board a ship, their approximate quantity and location should be listed in part III of the Inventory. However, small amounts of lubricating oil, anti-seize compounds and grease which are applied to or injected into machinery and equipment to maintain normal performance do not fall within the scope of this provision. For subsequent completion of

part III of the Inventory during the recycling preparation processes, the quantity of liquids and gases listed in table C of appendix 1 required for normal operation, including the related pipe system volumes, should be prepared and documented at the design and construction stage. This information belongs to the ship, and continuity of this information should be maintained if the flag, owner or operator of the ship changes.

4.5.4 *Regular consumable goods to be listed in the Inventory*

Regular consumable goods, as provided in table D of appendix 1 should not be listed in part I or part II but should be listed in part III of the Inventory if they are to be delivered with the ship to a Ship Recycling Facility. A general description including the name of item (e.g. TV set), manufacturer, quantity and location should be entered in part III of the Inventory. The check on materials provided for in paragraphs 4.1.2 and 4.1.3 of these guidelines does not apply to regular consumable goods.

4.6 Description of location of hazardous materials on board

The locations of hazardous materials on board should be described and identified using the name of location (e.g. second floor of engine-room, bridge DK, APT, No.1 cargo tank, frame number) given in the plans (e.g. general arrangement, fire and safety plan, machinery arrangement or tank arrangement).

4.7 Description of approximate quantity of hazardous materials

In order to identify the approximate quantity of hazardous materials, the standard unit used for hazardous materials should be kg, unless other units (e.g. m^3 for materials of liquid or gases, m^2 for materials used in floors or walls) are considered more appropriate. An approximate quantity should be rounded up to at least two significant figures.

5 REQUIREMENTS FOR ASCERTAINING THE CONFORMITY OF THE INVENTORY

5.1 Design and construction stage

The conformity of part I of the Inventory at the design and construction stage should be ascertained by reference to the collected Supplier's Declaration of Conformity described in section 7 and the related Material Declarations collected from suppliers.

5.2 Operational stage

Shipowners should implement the following measures in order to ensure the conformity of part I of the Inventory:

.1 to designate a person as responsible for maintaining and updating the Inventory (the designated person may be employed ashore or on board);

.2 the designated person, in order to implement paragraph 4.3.2, should establish and supervise a system to ensure the necessary updating of the Inventory in the event of new installation;

.3 to maintain the Inventory including dates of changes or new deleted entries and the signature of the designated person; and

.4 to provide related documents as required for the survey or sale of the ship.

6 MATERIAL DECLARATION

6.1 General

Suppliers to the shipbuilding industry should identify and declare whether or not the materials listed in table A or table B are present above the threshold value specified in appendix 1 of these guidelines. However, this provision does not apply to chemicals which do not constitute a part of the finished product.

6.2 Information required in the declaration

6.2.1 At a minimum the following information is required in the Material Declaration:

.1 date of declaration;

.2 Material Declaration identification number;

.3 supplier's name;

.4 product name (common product name or name used by manufacturer);

.5 product number (for identification by manufacturer);

.6 declaration of whether or not the materials listed in table A and table B of appendix 1 of these guidelines are present in the product above the threshold value stipulated in appendix 1 of these guidelines; and

.7 mass of each constituent material listed in table A and/or table B of appendix 1 of these guidelines if present above threshold value.

6.2.2 An example of the Material Declaration is shown in appendix 6.

7 SUPPLIER'S DECLARATION OF CONFORMITY

7.1 Purpose and scope

7.1.1 The purpose of the Supplier's Declaration of Conformity is to provide assurance that the related Material Declaration conforms to section 6.2, and to identify the responsible entity.

7.1.2 The Supplier's Declaration of Conformity remains valid as long as the products are present on board.

7.1.3 The supplier compiling the Supplier's Declaration of Conformity should establish a company policy[3]. The company policy on the management of the chemical substances in products which the supplier manufactures or sells should cover:

.1 Compliance with law:

The regulations and requirements governing the management of chemical substances in products should be clearly described in documents which should be kept and maintained; and

[3] A recognized quality management system may be utilized.

.2 Obtaining of information on chemical substance content:

In procuring raw materials for components and products, suppliers should be selected following an evaluation, and the information on the chemical substances they supply should be obtained.

7.2 Contents and format

7.2.1 The Supplier's Declaration of Conformity should contain the following:

.1 unique identification number;

.2 name and contact address of the issuer;

.3 identification of the subject of the Declaration of Conformity (e.g. name, type, model number, and/or other relevant supplementary information);

.4 statement of conformity;

.5 date and place of issue; and

.6 signature (or equivalent sign of validation), name and function of the authorized person(s) acting on behalf of the issuer.

7.2.2 An example of the Supplier's Declaration of Conformity is shown in appendix 7.

8 LIST OF APPENDICES

Appendix 1: Items to be listed in the Inventory of Hazardous Materials

Appendix 2: Standard format of the Inventory of Hazardous Materials

Appendix 3: Example of the development process for part I of the Inventory for new ships

Appendix 4: Flow diagram for developing part I of the Inventory for existing ships

Appendix 5: Example of the development process for part I of the Inventory for existing ships

Appendix 6: Form of Material Declaration

Appendix 7: Form of Supplier's Declaration of Conformity

Appendix 8: Examples of table A and table B materials of appendix 1 with CAS-numbers

Appendix 9: Specific test methods

Appendix 10: Examples of radioactive sources

APPENDIX 1

ITEMS TO BE LISTED IN THE INVENTORY OF HAZARDOUS MATERIALS

Table A – Materials listed in appendix 1 of the Annex to the Convention

No.	Materials		Inventory			Threshold value
			Part I	Part II	Part III	
A-1	Asbestos		x			0.1%[4]
A-2	Polychlorinated biphenyls (PCBs)		x			50 mg/kg[5]
A-3	Ozone depleting substances	CFCs	x			no threshold value[6]
		Halons	x			
		Other fully halogenated CFCs	x			
		Carbon tetrachloride	x			
		1,1,1-Trichloroethane (Methyl chloroform)	x			
		Hydrochlorofluorocarbons	x			
		Hydrobromofluorocarbons	x			
		Methyl bromide	x			
		Bromochloromethane	x			
A-4	Anti-fouling systems containing organotin compounds as a biocide		x			2,500 mg total tin/kg[7]

[4] In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the UN recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN's Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as Category 1A (including asbestos mixtures) under the GHS are required to be labelled as carcinogenic if the ratio is more than 0.1%. However, if 1% is applied, this threshold value should be recorded in the Inventory and, if available, the Material Declaration and can be applied not later than five years after the entry into force of the Convention. The threshold value of 0.1% need not be retroactively applied to those Inventories and Material Declarations.

[5] In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain PCBs shall be prohibited. The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PCB are characterized as hazardous under the Basel Convention.

[6] "No threshold value" is in accordance with the Montreal Protocol for reporting ODS. Unintentional trace contaminants should not be listed in the Material Declarations and in the Inventory.

[7] This threshold value is based on the *Guidelines for brief sampling of anti-fouling systems on ships* (resolution MEPC.104(49)).

Table B – Materials listed in appendix 2 of the Annex to the Convention

No.	Materials	Inventory			Threshold value
		Part I	Part II	Part III	
B-1	Cadmium and cadmium compounds	x			100 mg/kg[8]
B-2	Hexavalent chromium and hexavalent chromium compounds	x			1,000 mg/kg[8]
B-3	Lead and lead compounds	x			1,000 mg/kg[8]
B-4	Mercury and mercury compounds	x			1,000 mg/kg[8]
B-5	Polybrominated biphenyl (PBBs)	x			50 mg/kg[9]
B-6	Polybrominated diphenyl ethers (PBDEs)	x			1,000 mg/kg[8]
B-7	Polychlorinated naphthalenes (more than 3 chlorine atoms)	x			50mg/kg[10]
B-8	Radioactive substances	x			no threshold value[11]
B-9	Certain shortchain chlorinated paraffins (Alkanes, C10-C13, chloro)	x			1%[12]

8 The Organization set this as the threshold value referring to the Restriction of Hazardous Substances (RoHS Directive 2011/65/EU, Annex II).

9 The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PBB are characterized as hazardous under the Basel Convention.

10 The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PCN are characterized as hazardous under the Basel Convention.

11 All radioactive sources should be included in the Material Declaration and in the Inventory. *Radioactive source* means radioactive material permanently sealed in a capsule or closely bonded and in a solid form that is used as a source of radiation. This includes consumer products and industrial gauges with radioactive materials. Examples are listed in appendix 10.

12 The Organization set 1% as the threshold value referring to the EU legislation that restricts Chlorinated Paraffins from being placed on the market for use as substances or as constituents of other substances or preparations in concentrations higher than 1% (EU Regulation 1907/2006, Annex XVII Entry 42 and Regulation 519/2012).

Table C – Potentially hazardous items

No.	Properties		Goods	Inventory		
				Part I	Part II	Part III
C-1	Liquid	Oiliness	Kerosene			x
C-2			White spirit			x
C-3			Lubricating oil			x
C-4			Hydraulic oil			x
C-5			Anti-seize compounds			x
C-6			Fuel additive			x
C-7			Engine coolant additives			x
C-8			Antifreeze fluids			x
C-9			Boiler and feed water treatment and test re-agents			x
C-10			De-ioniser regenerating chemicals			x
C-11			Evaporator dosing and descaling acids			x
C-12			Paint stabilizers/rust stabilizers			x
C-13			Solvents/thinners			x
C-14			Paints			x
C-15			Chemical refrigerants			x
C-16			Battery electrolyte			x
C-17			Alcohol, methylated spirits			x
C-18	Gas	Explosives/ inflammables	Acetylene			x
C-19			Propane			x
C-20			Butane			x
C-21			Oxygen			x
C-22		Green House Gases	CO_2			x
C-23			Perfluorocarbons (PFCs)			x
C-24			Methane			x
C-25			Hydrofluorocarbon (HFCs)			x
C-27			Nitrous oxide (N_2O)			x
C-28			Sulfur hexafluoride (SF_6)			x
C-29	Liquid	Oiliness	Bunkers: fuel oil			x
C-30			Grease			x
C-31			Waste oil (sludge)		x	
C-32			Bilge and/or waste water generated by the after-treatment systems fitted on machineries		x	
C-33			Oily liquid cargo tank residues		x	
C-34			Ballast water		x	
C-35			Raw sewage		x	
C-36			Treated sewage		x	
C-37			Non-oily liquid cargo residues		x	
C-38	Gas	Explosibility/ inflammability	Fuel gas			x

No.	Properties	Goods	Inventory		
			Part I	Part II	Part III
C-39	Solid	Dry cargo residues		x	
C-40		Medical waste/infectious waste		x	
C-41		Incinerator ash[13]		x	
C-42		Garbage		x	
C-43		Fuel tank residues		x	
C-44		Oily solid cargo tank residues		x	
C-45		Oily or chemical contaminated rags		x	
C-46		Batteries (incl. lead acid batteries)			x
C-47		Pesticides/insecticide sprays			x
C-48		Extinguishers			x
C-49		Chemical cleaner (incl. electrical equipment cleaner, carbon remover)			x
C-50		Detergent/bleacher (could be a liquid)			x
C-51		Miscellaneous medicines			x
C-52		Fire fighting clothing and Personal protective equipment			x
C-53		Dry tank residues		x	
C-54		Cargo residues		x	
C-55		Spare parts which contain materials listed in Table A or Table B			x

Table D – Regular consumable goods potentially containing hazardous materials[14]

No.	Properties	Example	Inventory		
			Part I	Part II	Part III
D-1	Electrical and electronic equipment	Computers, refrigerators, printers, scanners, television sets, radio sets, video cameras, video recorders, telephones, consumer batteries, fluorescent lamps, filament bulbs, lamps			x
D-2	Lighting equipment	Fluorescent lamps, filament bulbs, lamps			x
D-3	Non ship-specific furniture, interior and similar equipment	Chairs, sofas, tables, beds, curtains, carpets, garbage bins, bed-linen, pillows, towels, mattresses, storage racks, decoration, bathroom installations, toys, not structurally relevant or integrated artwork			x

[13] Definition of garbage is identical to that in MARPOL Annex V. However, incinerator ash is classified separately because it may include hazardous substances or heavy metals.

[14] This table does not include ship-specific equipment integral to ship operations, which has to be listed in part I of the inventory.

APPENDIX 2

STANDARD FORMAT OF THE INVENTORY OF HAZARDOUS MATERIALS[15]

Part I
Hazardous materials contained in the ship's structure and equipment

I-1 – Paints and coating systems containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Application of paint	Name of paint	Location	Materials (classification in appendix 1)	Approximate quantity		Remarks
1	Anti-drumming compound	Primer, xx Co., xx primer #300	Hull part	Lead	35.00	kg	
2	Anti-fouling	xx Co., xx coat #100	Underwater parts	TBT	120.00	kg	

[15] Examples of how to complete the Inventory are provided for guidance purposes only in accordance with paragraph 3.4 of the guidelines.

I-2 – Equipment and machinery containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Switch board	Engine control room	Cadmium	Housing coating	0.02	kg	
			Mercury	Heat gauge	<0.01	kg	less than 0.01kg
2	~~Diesel engine, xx Co., xx #150~~	~~Engine room~~	~~LeadCadmium~~	~~BearingStarter for blower~~	~~0.02~~	~~kg~~	
3	Diesel engine, xx Co., xx #200	Engine-room	Lead	Starter for blower	0.01	kg	Revised by XXX on Oct. XX, 2008 (revoking No.2)
4	Diesel generator (x 3)	Engine-room	Lead	Ingredient of copper compounds	0.01	kg	
5	Radioactive level gauge	No. 1 Cargo tank	Radioactive substances	Gauge	5 (1.8E+11)	Ci (Bq)	Radionuclides: ^{60}Co

I-3 - Structure and hull containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Name of structural element	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Wall panel	Accommodation	Asbestos	Insulation	2,500.00	kg	
2	Wall insulation	Engine control room	Lead	Perforated plate	0.01	kg	cover for insulation material
			Asbestos	Insulation	25.00	kg	under perforated plates
3							

Part II
Operationally generated waste

No.	Location[1]	Name of item (classification in appendix 1) and detail (if any) of the item	Approximate quantity		Remarks
1	Garbage locker	Garbage (food waste)	35.00	kg	
2	Bilge tank	Bilgewater	15.00	m^3	
3	No.1 cargo hold	Dry cargo residues (iron ore)	110.00	kg	
4	No.2 cargo hold	Waste oil (sludge) (crude)	120.00	kg	
5	No.1 ballast tank	Ballast water	2,500.00	m^3	
		Sediments	250.00	kg	

[1] The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

Part III
Stores

III-1 - *Stores*

No.	Location[1]	Name of item (classification in appendix 1)	Unit quantity		Figure		Approximate quantity		Remarks[2)]
								m^3	
								kg	
								kg	
									Details are shown in the attached list.
5	Paint stores	Paint, xx Co., #600	20.00	kg	5	pcs	100.00	kg	Cadmium containing.

1 The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

2 In column "Remarks" for part III items, if hazardous materials are integrated in products, the approximate amount of the contents should be shown as far as possible.

III-2 – Liquids sealed in ship's machinery and equipment

No.	Type of liquids (classification in appendix 1)	Name of machinery or equipment	Location	Approximate quantity		Remarks
1	Hydraulic oil	Deck crane hydraulic oil system	Upper deck	15.00	m^3	
		Deck machinery hydraulic oil system	Upper deck and bosun store	200.00	m^3	
		Steering gear hydraulic oil system	Steering gear room	0.55	m^3	
2	Lubricating oil	Main engine system	Engine-room	0.45	m^3	
3	Boiler water treatment	Boiler	Engine-room	0.20	m^3	

III-3 – Gases sealed in ship's machinery and equipment

No.	Type of gases (classification in appendix 1)	Name of machinery or equipment	Location	Approximate quantity		Remarks
1	HFC	AC system	AC room	100.00	kg	
2	HFC	Refrigerated provision chamber machine	AC room	50.00	kg	

III-4 – Regular consumable goods potentially containing hazardous materials

No.	Location[16]	Name of item	Quantity	Remarks
1	Accommodation	Refrigerators	1	
2	Accommodation	Personal computers	2	

[16] The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

APPENDIX 3

EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART I OF THE INVENTORY FOR NEW SHIPS

1 OBJECTIVE OF THE TYPICAL EXAMPLE

This example has been developed to give guidance and to facilitate understanding of the development process for part I of the Inventory of Hazardous Materials for new ships.

2 DEVELOPMENT FLOW FOR PART I OF THE INVENTORY

Part I of the Inventory should be developed using the following three steps. However, the order of these steps is flexible and can be changed depending on the schedule of shipbuilding:

.1 collection of hazardous materials information;

.2 utilization of hazardous materials information; and

.3 preparation of the Inventory (by filling out standard format).

3 COLLECTION OF HAZARDOUS MATERIALS INFORMATION

3.1 Data collection process for hazardous materials

Materials Declaration (MD) and Supplier's Declaration of Conformity (SDoC) for products from suppliers (tier 1 suppliers) should be requested and collected by the shipbuilding yard. Tier 1 suppliers may request from their suppliers (tier 2 suppliers) the relevant information if they cannot develop the MD based on the information available. Thus the collection of data on hazardous materials may involve the entire shipbuilding supply chain (Figure 1).

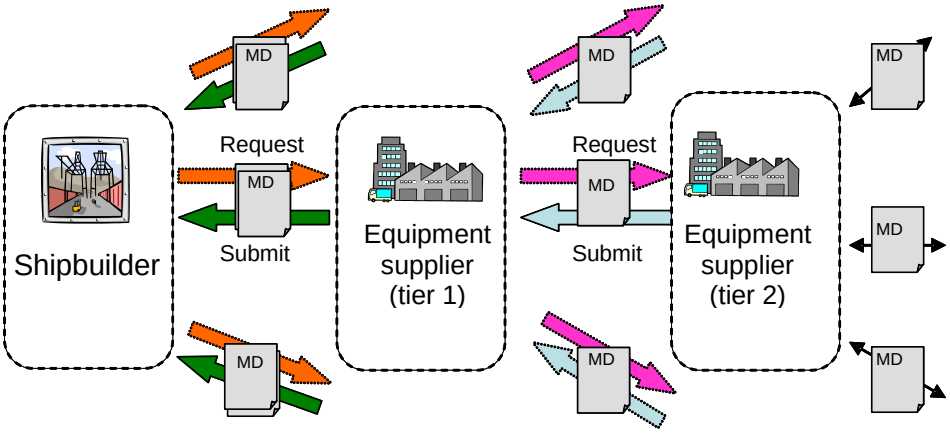


Figure 1 – Process of MD (and SDoC) collection showing involvement of supply chain

3.2 Declaration of hazardous materials

Suppliers should declare whether or not the hazardous materials listed in table A and table B in the MD are present in concentrations above the threshold values specified for each homogeneous material in a product.

3.2.1 *Materials listed in table A*

If one or more materials listed in table A are found to be present in concentrations above the specified threshold value according to the MD, the products which contain these materials shall not be installed on a ship. However, if the materials are used in a product in accordance with an exemption specified by the Convention (e.g. new installations containing hydrochlorofluorocarbons (HCFCs) before 1 January 2020), the product should be listed in the Inventory.

3.2.2 *Materials listed in table B*

If one or more materials listed in table B are found to be present in concentrations above the specified threshold value according to the MD, the products should be listed in the Inventory.

3.3 Example of homogeneous materials

Figure 2 shows an example of four homogeneous materials which constitute a cable. In this case, sheath, intervention, insulator and conductor are all individual homogeneous materials.

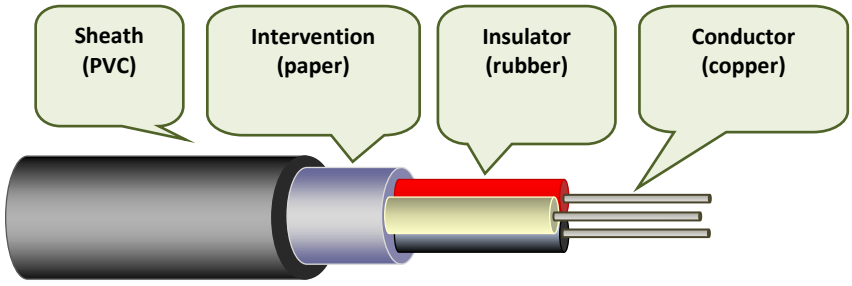


Figure 2 – *Example of homogeneous materials (cable)*

4 UTILIZATION OF HAZARDOUS MATERIALS INFORMATION

Products which contain hazardous materials in concentrations above the specified threshold values should be clearly identified in the MD. The approximate quantity of the hazardous materials should be calculated if the mass data for hazardous materials are declared in the MD using a unit which cannot be directly utilized in the Inventory.

5 PREPARATION OF INVENTORY (BY FILLING OUT STANDARD FORMAT)

The information received for the Inventory, as contained in table A and table B of appendix 1 of these guidelines, ought to be structured and utilized according to the following categorization for part I of the Inventory:

Part I-1 Paints and coating systems;

Part I-2 Equipment and machinery; and

Part I-3 Structure and hull.

5.1 "Name of equipment and machinery" column

5.1.1 *Equipment and machinery*

5.1.1.1 The name of each item of equipment or machinery should be entered in this column. If more than one hazardous material is present in the equipment or machinery, the row relating to that equipment or machinery should be appropriately divided such that all of the hazardous materials contained in the piece of equipment or machinery are entered. If more than one item of equipment or machinery is situated in one location, both name and quantity of the equipment or machinery should be entered in the column. Examples are shown in rows 1 and 2 of table 1

5.1.1.2 For identical or common items, such as but not limited to bolts, nuts and valves, there is no need to list each item individually (see Bulk Listing in paragraph 3.2 of the guidelines). An example is shown in row 3 of table 1.

Table 1 – Example showing more than one item of equipment or machinery situated in one location

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Engine-room	Lead	Piston pin bush	0.75	kg	
			Mercury	Thermometer charge air temperature	0.01	kg	
2	Diesel generator (x 3)	Engine-room	Mercury	Thermometer	0.03	kg	
3	FC valve (x 100)	Througout the ship	Lead and lead compounds		20.5	kg	

5.1.2 *Pipes and cables*

The names of pipes and of systems, including electric cables, which are often situated in more than one compartment of a ship, should be described using the name of the system concerned. A reference to the compartments where these systems are located is not necessary as long as the system is clearly identified and properly named.

5.2 "Approximate quantity" column

The standard unit for approximate quantity of solid hazardous materials should be kg. If the hazardous materials are liquids or gases, the standard unit should be either m^3 or kg. An approximate quantity should be rounded up to at least two significant figures. If the hazardous material is less than 10 g, the description of the quantity should read "<0.01 kg".

Table 2 – Example of a switchboard

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
	Switchboard	Engine control room	Cadmium	Housing coating	0.02	kg	
			Mercury	Heat gauge	<0.01	kg	less than 0.01 kg

5.3 "Location" column

5.3.1 *Example of a location list*

It is recommended to prepare a location list which covers all compartments of a ship based on the ship's plans (e.g. general arrangement, engine-room arrangement, accommodation and tank plan) and on other documentation on board, including certificates or spare parts' lists. The description of the location should be based on a location such as a deck or room to enable easy identification. The name of the location should correspond to the ship's plans so as to ensure consistency between the Inventory and the ship's plans. Examples of names of locations are shown in table 3. For bulk listings, the locations of the items or materials may be generalized. For example, the location may only include the primary classification such as "Throughout the ship" as shown in the table 3 below.

Table 3 – Examples of location names

(A) Primary classification	(B) Secondary classification	(C) Name of location
Throughout the ship		
Hull part	Fore part	Bosun store
		…
	Cargo part	No.1 cargo hold/tank
		No.1 garage deck
		…
	Tank part	Fore peak tank
		No.1 WBT
		No.1 FOT
		…
		Aft Peak Tank
	Aft part	Steering gear room
		Emergency fire pump space
		…
	Superstructure	Accommodation
		Compass deck
		Nav. bridge deck
		…
		Wheel house
		Engine control room
		Cargo control room
		…
	Deck house	Deck house
		…
(A) Primary classification	(B) Secondary classification	(C) Name of location
Machinery part	Engine-room	Engine-room
		Main floor
		2nd floor
		…
		Generator space/room
		Purifier space/room
		Shaft space/room
		Engine casing
		Funnel
		Engine control room
		…
	Pump-room	Pump-room
		…
Exterior part	Superstructure	Superstructure
	Upper deck	Upper deck
	Hull shell	Hull shell
		bottom
		under waterline
		…

5.3.2 *Description of location of pipes and electrical systems*

5.3.2.1 Locations of pipes and systems, including electrical systems and cables situated in more than one compartment of a ship, should be described for each system concerned. If they are situated in a number of compartments, the most practical of the following two options should be used:

.1 listing of all components in the column; or

.2 description of the location of the system using an expression such as those shown under "primary classification" and "secondary classification" in Table 3.

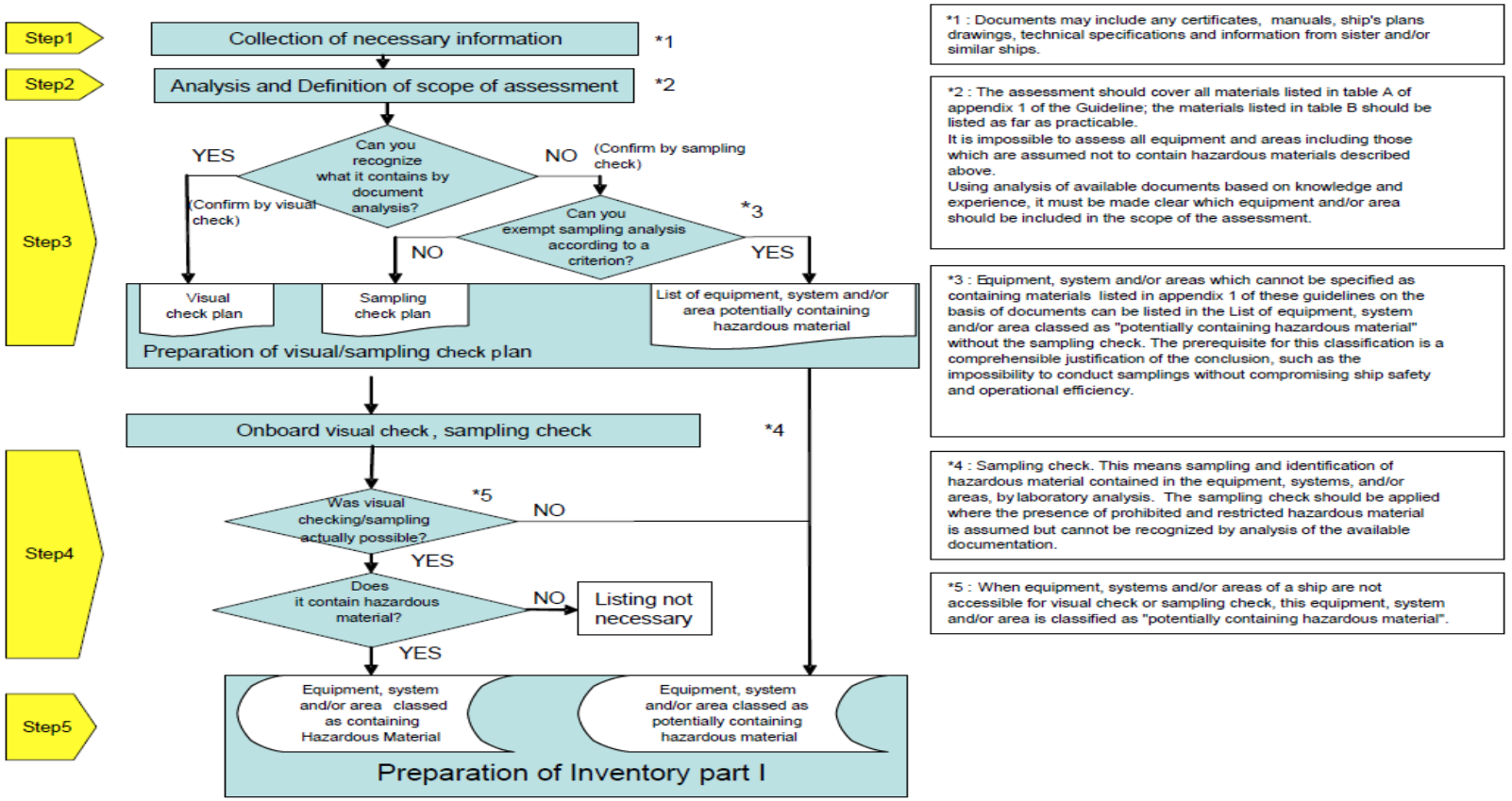
5.3.2.2 A typical description of a pipe system is shown in table 4.

Table 4 – Example of description of a pipe system

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
	Ballast water system	Engine-room, Hold parts					

APPENDIX 4

FLOW DIAGRAM FOR DEVELOPING PART I OF THE INVENTORY FOR EXISTING SHIPS



APPENDIX 5

EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART I OF THE INVENTORY FOR EXISTING SHIPS

1 INTRODUCTION

1.1 In order to develop part I of the Inventory of Hazardous Materials for existing ships, documents of the individual ship as well as the knowledge and experience of specialist personnel (experts) is required. An example of the development process for Part I of the Inventory of Hazardous Materials for existing ships is useful to understand the basic steps as laid out in the guidelines and to ensure a unified application. However, attention should be paid to variations in different types of ships[17].

1.2 Compilation of part I of the Inventory of Hazardous Material for existing ships involves the following five steps which are described in paragraph 4.2 and appendix 4 of these guidelines.

Step 1: Collection of necessary information;

Step 2: Assessment of collected information;

Step 3: Preparation of visual/sampling check plan;

Step 4: Onboard visual/sampling check; and

Step 5: Preparation of part I of the Inventory and related documentation.

2 STEP 1 – COLLECTION OF NECESSARY INFORMATION

2.1 Sighting of available documents

A practical first step is to collect detailed documents for the ship. The shipowner should try to collate documents normally retained on board the ship or by the shipping company as well as relevant documents that the shipyard, manufacturers, or classification society may have. The following documents should be used when available:

.1 Ship's specification
.2 General Arrangement
.3 Machinery Arrangement
.4 Spare Parts and Tools List
.5 Piping Arrangement
.6 Accommodation Plan
.7 Fire Control Plan
.8 Fire Protection Plan
.9 Insulation Plan (Hull and Machinery)
.10 International Anti-Fouling System Certificate
.11 Related manuals and drawings
.12 Information from other inventories and/or sister or similar ships, machinery, equipment, materials and coatings
.13 Results of previous visual/sampling checks and other analysis

[17] The example of a 28,000 gross tonnage bulk carrier constructed in 1985 is used in this appendix.

2.1.2 If the ship has undergone conversions or major repair work, it is necessary to identify as far as possible the modifications from the initial design and specification of the ship.

2.2 Indicative list

2.2.1 It is impossible to check all equipment, systems, and/or areas on board the ship to determine the presence or absence of hazardous materials. The total number of parts on board may exceed several thousand. In order to take a practical approach, an indicative list should be prepared that identifies the equipment, system, and/or area on board that is presumed to contain hazardous materials. Field interviews with the shipyard and suppliers may be necessary to prepare such lists. A typical example of an indicative list is shown below.

2.2.2 *Materials to be checked and documented*

Hazardous Materials, as identified in appendix 1 of these guidelines, should be listed in part I of the Inventory for existing ships. Appendix 1 of the guidelines contains all the materials concerned. Table A shows those which are required to be listed and table B shows those which should be listed as far as practicable.

2.2.3 *Materials listed in table A*

2.2.3.1 Table A lists the following four materials:

.1 Asbestos
.2 Polychlorinated biphenyls (PCBs)
.3 Ozone depleting substances
.4 Anti-fouling systems containing organotin compounds as a biocide

2.2.3.2 *Asbestos*

Field interviews were conducted with over 200 Japanese shipyards and suppliers regarding the use of asbestos in production. Indicative lists for asbestos developed on the basis of this research are shown below:

Structure and/or equipment	Component
Propeller shafting	Packing with low pressure hydraulic piping flange
	Packing with casing
	Clutch
	Brake lining
	Synthetic stern tubes
Diesel engine	Packing with piping flange
	Lagging material for fuel pipe
	Lagging material for exhaust pipe
	Lagging material turbocharger
Turbine engine	Lagging material for casing
	Packing with flange of piping and valve for steam line, exhaust line and drain line
	Lagging material for piping and valve of steam line, exhaust line and drain line

Structure and/or equipment	Component
Boiler	Insulation in combustion chamber
	Packing for casing door
	Lagging material for exhaust pipe
	Gasket for manhole
	Gasket for hand hole
	Gas shield packing for soot blower and other hole
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Exhaust gas economizer	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Gas shield packing for soot blower
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve
	Gland packing
	Brake lining
Heat exchanger	Packing with casing
	Gland packing for valve
	Lagging material and insulation
Valve	Gland packing with valve, sheet packing with piping flange
	Gasket with flange of high pressure and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipment (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material
Airborne asbestos	Wall, ceiling
Ceiling, floor and wall in accommodation area	Ceiling, floor, wall
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air-conditioning system	Sheet packing, lagging material for piping and flexible joint

Structure and/or equipment	Component
Miscellaneous	Ropes
	Thermal insulating materials
	Fire shields/fire proofing
	Space/duct insulation
	Electrical cable materials
	Brake linings
	Floor tiles/deck underlay
	Steam/water/vent flange gaskets
	Adhesives/mastics/fillers
	Sound damping
	Moulded plastic products
	Sealing putty
	Shaft/valve packing
	Electrical bulkhead penetration packing
	Circuit breaker arc chutes
	Pipe hanger inserts
	Weld shop protectors/burn covers
	Fire-fighting blankets/clothing/equipment
	Concrete ballast

2.2.3.3 *Polychlorinated biphenyl (PCBs)*

Worldwide restriction of PCBs began on 17 May 2004 as a result of the implementation of the Stockholm Convention, which aims to eliminate or restrict the production and use of persistent organic pollutants. In Japan, domestic control began in 1973, with the prohibition of all activities relating to the production, use and import of PCBs. Japanese suppliers can provide accurate information concerning their products. The indicative list of PCBs has been developed as shown below:

Equipment	**Component of equipment**
Transformer	Insulating oil
Condenser	Insulating oil
Fuel heater	Heating medium
Electric cable	Covering, insulating tape
Lubricating oil	
Heat oil	Thermometers, sensors, indicators
Rubber/felt gaskets	
Rubber hose	
Plastic foam insulation	
Thermal insulating materials	
Voltage regulators	
Switches/reclosers/bushings	
Electromagnets	
Adhesives/tapes	
Surface contamination of machinery	
Oil-based paint	
Caulking	
Rubber isolation mounts	
Pipe hangers	

Equipment	Component of equipment
Light ballasts (component within fluorescent light fixtures)	
Plasticizers	
Felt under septum plates on top of hull bottom	

2.2.3.4 *Ozone depleting substances*

The indicative list for ozone depleting substances is shown below. Ozone depleting substances have been controlled according to the Montreal Protocol and MARPOL Convention. Although almost all substances have been banned since 1996, HCFC can still be used until 2020.

Materials	Component of equipment	Period for use of ODS in Japan
CFCs (R11, R12)	Refrigerant for refrigerators	Until 1996
CFCs	Urethane formed material	Until 1996
	Blowing agent for insulation of LNG carriers	Until 1996
Halons	Extinguishing agent	Until 1994
Other fully halogenated CFCs	The possibility of usage in ships is low	Until 1996
Carbon tetrachloride	The possibility of usage in ships is low	Until 1996
1,1,1-Trichloroethane (methyl chloroform)	The possibility of usage in ships is low	Until 1996
HCFC (R22, R141b)	Refrigerant for refrigerating machine	It is possible to use it until 2020
HBFC	The possibility of usage in ships is low	Until 1996
Methyl bromide	The possibility of usage in ships is low	Until 2005

2.2.3.5 *Organotin compounds*

Organotin compounds include tributyl tins (TBT), triphenyl tins (TPT) and tributyl tin oxide (TBTO). Organotin compounds have been used as anti-fouling paint on ships' bottoms and the International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention) stipulates that all ships shall not apply or re-apply organotin compounds after 1 January 2003, and that, after 1 January 2008, all ships shall either not bear such compounds on their hulls or shall bear a coating that forms a barrier preventing such compounds from leaching into the sea. The above-mentioned dates may have been extended by permission of the Administration bearing in mind that the AFS Convention entered into force on 17 September 2008.

2.2.4 ***Materials listed in table B***

For existing ships it is not obligatory for materials listed in table B to be listed in part I of the Inventory. However, if they can be identified in a practical way, they should be listed in the Inventory, because the information will be used to support ship recycling processes. The Indicative list of materials listed in table B is shown below:

Materials	Component of equipment
Cadmium and cadmium compounds	Plating film, bearing
Hexavalent chromium compounds	Plating film
Mercury and mercury compounds	Fluorescent light, mercury lamp, mercury cell, liquid-level switch, gyro compass, thermometer, measuring tool, manganese cell, pressure sensors, light fittings, electrical switches, fire detectors
Lead and lead compounds	Corrosion resistant primer, solder (almost all electric appliances contain solder), paints, preservative coatings, cable insulation, lead ballast, generators
Polybrominated biphenyls (PBBs)	Non-flammable plastics
Polybrominated diphenyl ethers (PBDE)	Non-flammable plastics
Polychlorinated naphthalenes	Paint, lubricating oil
Radioactive substances	Refer to appendix 10
Certain shortchain chlorinated paraffins	Non-flammable plastics

3 STEP 2 – ASSESSMENT OF COLLECTED INFORMATION

Preparation of a checklist is an efficient method for developing the Inventory for existing ships in order to clarify the results of each step. Based on collected information including the indicative list mentioned in step 1, all equipment, systems, and/or areas on board assumed to contain hazardous materials listed in tables A and B should be included in the checklist. Each listed equipment, system, and/or area on board should be analysed and assessed for its hazardous materials content.

The existence and volume of hazardous materials may be judged and calculated from the Spare parts and tools list and the maker's drawings. The existence of asbestos contained in floors, ceilings and walls may be identified from Fire Protection Plans, while the existence of TBT in coatings can be identified from the International Anti-Fouling System Certificate, Coating scheme and the History of Paint.

Example of weight calculation

No.	Hazardous Materials	Location/equipment/ component	Reference	Calculation
1.1-2	TBT	Flat bottom/paint	History of coatings	
1.2-1	Asbestos	Main engine/ exh. pipe packing	Spare parts and tools list	250 g x 14 sheet = 3.50 kg
1.2-3	HCFC	Ref. provision plant	Maker's drawings	20 kg x 1 cylinder = 20 kg
1.2-4	Lead	Batteries	Maker's drawings	6kg x 16 unit = 96 kg
1.3-1	Asbestos	Engine-room ceiling	Accommodation plan	

When a component or coating is determined to contain hazardous materials, a "Y" should be entered in the column for "Result of document analysis" in the checklist, to denote "Contained". Likewise, when an item is determined not to contain Hazardous Materials, the entry "N" should be made in the column to denote "Not contained". When a determination cannot be made as to the hazardous materials content, the column should be completed with the entry "Unknown".

Checklist (step 2)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting and coating	A/F Paints			NIL	Paints Co./marine P1000	N			・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat Bottom				3000m^2		Unknown AF	Unknown			
[Inventory part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14		Diesel Co.	Y			M-100
2	A	Asbestos	3rd deck	Aux.boiler	Lagging		12		Unknown lagging	Unknown			M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM			
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1		Reito Co.	Y			Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16		Denchi Co.	Y			E-300
[Inventory part I-1.3]													
1	A	Asbestos	Upper deck	Back deck ceilings	Engine room ceiling		20m^2		Unknown ceiling	Unknown			O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of Check:. V=Visual check, S=Sampling check

*4 Result of Check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

4 STEP 3 – PREPARATION OF VISUAL/SAMPLING CHECK PLAN

4.1 Each item classified as "Contained" or "Not contained" in step 2 should be subjected to a visual check on board, and the entry "V" should be made in the "Check procedure" column to denote "Visual check".

4.2 For each item categorized as "unknown", a decision should be made as to whether to apply a sampling check. However, any item categorized as "unknown" may be classed as "potentially containing hazardous material" provided comprehensive justification is given, or if it can be assumed that there will be little or no effect on disassembly as a unit and later ship recycling and disposal operations. For example, in the following checklist, in order to carry out a sampling check for "Packing with aux. boiler" the shipowner needs to disassemble the auxiliary boiler in a repair yard. The costs of this check are significantly higher than the later disposal costs at a ship recycling facility. In this case, therefore, the classification as "potentially containing hazardous material" is justifiable.

Checklist (step 3)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting & Coating	A/F Paints			NIL	Paints Co./marine P1000	N	V		・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat bottom				3000m^2		Unknown AF	Unknown	S		
[Inventory Part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14		Diesel Co.	Y	V		M-100
2	A	Asbestos	3rd deck	Aux.boiler	Lagging		12		Unknown lagging	Unknown	S		M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM	V		
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1		Reito Co.	Y	V		Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16		Denchi Co.	Y	V		E-300
[Inventory Part I-1.3]													
1	A	Asbestos	Upper deck	Back deck ceilings	Engine room ceiling		20m^2		Unknown ceiling	Unknown	S		O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of check:. V=Visual check, S=Sampling check

*4 Result of check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

4.3 Before any visual/sampling check on board is conducted, a "visual/sampling check plan" should be prepared. An example of such a plan is shown below.

4.4 To prevent any incidents during the visual/sampling check, a schedule should be established to eliminate interference with other ongoing work on board. To prevent potential exposure to Hazardous Materials during the visual/sampling check, safety precautions should be in place on board. For example, sampling of potential asbestos containing materials could release fibres into the atmosphere. Therefore, appropriate personnel safety and containment procedures should be implemented prior to sampling.

4.5 Items listed in the visual/sampling check should be arranged in sequence so that the onboard check is conducted in a structured manner (e.g. from a lower level to an upper level and from a fore part to an aft part).

Example of visual/sampling check plan

Name of ship	XXXXXXXXXX
IMO Number	XXXXXXXXXX
Gross Tonnage	28,000 GT
L x B x D	xxx.xx × xx.xx × xx.xx m
Date of delivery	dd.mm.1987
Shipowner	XXXXXXXXXX
Contact point (Address, Telephone, Fax, Email)	XXXXXXXXXX Tel: XXXX-XXXX Fax: XXXX-XXXX Email: abcdefg@hijk.co.net
Check schedule	Visual check： dd, mm, 20XX Sampling check：dd, mm, 20XX
Site of check	XX shipyard, No. Dock
In charge of check	XXXX XXXX
Check engineer	XXXX XXXX, YYYY YYYY, ZZZZ ZZZZ
Sampling engineer	Person with specialized knowledge of sampling
Sampling method and anti-scattering measure for asbestos	Wet the sampling location prior to cutting and allow it to harden after cutting to prevent scatter. Notes: Workers performing sampling activities shall wear protective equipment.
Sampling of fragments of paints	Paints suspected to contain TBT should be collected and analysed from load line, directly under bilge keel and flat bottom near amidships.
Laboratory	QQQQ QQQQ
Chemical analysis method	Method by ISO/DIS 22262-1 Bulk materials – Part 1: Sampling and qualitative determination of asbestos in commercial bulk materials and ISO/CD 22262-2 Bulk materials – Part 2: Quantitative determination of asbestos by gravimetric and microscopic methods. ICP Luminous analysis (TBT)
Location of visual/sampling check	Refer to lists for visual/sampling check

Listing for equipment, system and/or area for visual check
See attached "Analysis and definition of scope of investigation for sample ship"

List of equipment, system and/or area for sampling check				
Location	**Equipment, machinery and/or zone**	**Name of parts**	**Materials**	**Result of doc. checking**
Upper Deck	Back deck ceilings	Engine-room ceiling	Asbestos	Unknown
Engine-room	Exhaust gas pipe	Insulation	Asbestos	Unknown
Engine-room	Pipe/flange	Gasket	Asbestos	Unknown
Refer to attached "Analysis and definition of scope of investigation for sample ship" and "Location plan of hazardous materials for sample ship"				

List of equipment, system and/or area classed as PCHM				
Location	**Equipment, machinery and/or zone**	**Name of part**	**Material**	**Result of doc. checking**
Floor	Propeller cap	Gasket	Asbestos	PCHM
Engine-room	Air operated shut-off valve	Gland packing	Asbestos	PCHM
Refer to attached "Analysis and definition of scope of investigation for sample ship" and "Location plan of hazardous materials for sample ship"				

This plan is established in accordance with the guidelines for the development of the Inventory of Hazardous Materials

Prepared by： XXXX XXXX

Tel.： YYYY-YYYY

Email： XXXX@ZZZZ.co.net

・Document check・date/place：
dd, mm, 20XX at XX Lines Co. Ltd.

・Preparation date of plan：dd. mm, 20XX

5 STEP 4 – ONBOARD VISUAL/SAMPLING CHECK

5.1 The visual/sampling check should be conducted according to the plan. Check points should be marked in the ship's plan or recorded with photographs.

5.2 A person taking samples should be protected by the appropriate safety equipment relevant to the suspected type of hazardous materials encountered. Appropriate safety precautions should also be in place for passengers, crewmembers and other persons on board, to minimize the potential exposure to hazardous materials. Safety precautions could include the posting of signs or other verbal or written notification for personnel to avoid such areas during sampling. The personnel taking samples should ensure compliance with relevant national regulations.

5.3 The results of visual/sampling checks should be recorded in the checklist. Any equipment, systems and/or areas of the ship that cannot be accessed for checks should be classified as "potentially containing hazardous material". In this case, the entry in the "Result of check" column should be "PCHM".

6 STEP 5 – PREPARATION OF PART I OF THE INVENTORY AND RELATED DOCUMENTATION

6.1 *Development of part I of the Inventory*

The results of the check and the estimated quantity of hazardous materials should be recorded on the checklist. Part I of the Inventory should be developed with reference to the checklist.

6.2 *Development of location diagram of hazardous materials*

With respect to part I of the Inventory, the development of a location diagram of hazardous materials is recommended in order to help the ship recycling facility gain a visual understanding of the Inventory.

Checklist (step 4 and step 5)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting & Coating	A/F Paints			NIL	Paints Co./marine P1000	N	V	N	・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat Bottom			0.02	3000m^2	60.00	Unknown AF	Unknown	S	Y	
[Inventory part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14	3.50	Diesel Co.	Y	V	Y	M-100
2	A	Asbestos	3rd deck	Aux. boiler	Lagging		12		Unknown lagging	Unknown	S	N	M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM	V	PCHM	
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1	20.00	Reito Co.	Y	V	Y	Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16	96.00	Denchi Co.	Y	V	Y	E-300
[Inventory part I-1.3]													
1	A	Asbestos	Upp.deck	Back deck ceilings	Engine room ceiling	0.19	20m^2	3.80	Unknown ceiling	Unknown	S	Y	O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of check:. V=Visual check, S=Sampling check

*4 Result of check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

Example of the Inventory for existing ships

Inventory of Hazardous Materials for "Sample Ship"

Particulars of the "Sample Ship"

Distinctive number or letters	XXXXNNN
Port of registry	Port of World
Type of vessel	Bulk carrier
Gross Tonnage	28,000 GT
IMO number	NNNNNNN
Name of shipbuilder	xx Shipbuilding Co. Ltd
Name of shipowner	yy Maritime SA
Date of delivery	MM/DD/1988

This inventory was developed in accordance with the guidelines for the development of the Inventory of Hazardous Materials.

Attachment:

1: Inventory of Hazardous Materials

2: Assessment of collected information

3: Location diagram of Hazardous Materials

Prepared by XYZ (Name & address) (dd/mm/20XX)

Inventory of Hazardous Materials: "Sample Ship"

Part I – *hazardous materials contained in the ship's structure and equipment*

I-1 Paints and coating systems containing materials listed in Table A and Table B of appendix 1 of the guidelines

No.	Application of paint	Name of paint	Location*	Materials (classification in appendix 1)	Approximate quantity		Remarks
1	AF paint	Unknown paints	Flat bottom	TBT	60.00	kg	Confirmed by sampling
2							
3							

I-2 Equipment and machinery containing materials listed in Table A and Table B of appendix 1 of the guidelines

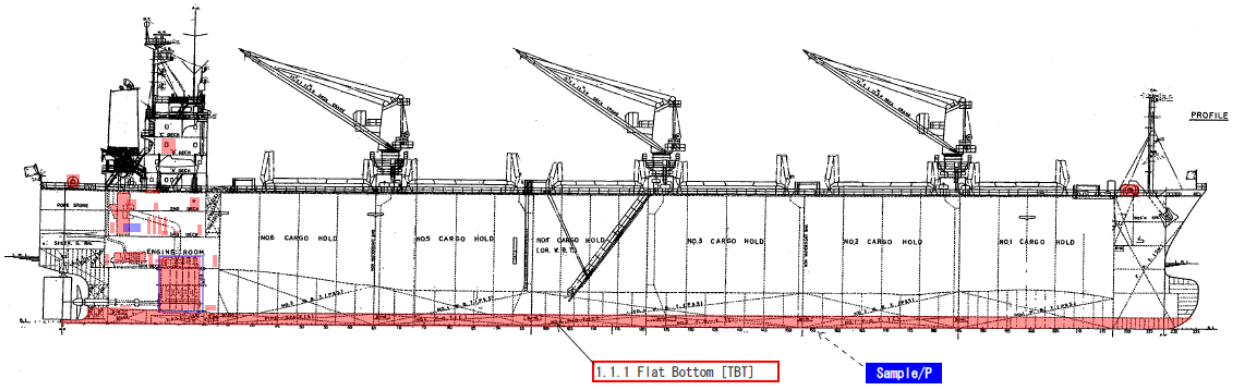
No.	Name of equipment and machinery	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	kg	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	kg	PCHM (potentially containing Hazardous Material)
3	Piping/flange	Engine-room	Asbestos	Packing	50.00	kg	PCHM
4	Ref. provision plant	2nd deck	HCFC	Refrigerant (R22)	20.00	kg	
5	Batteries	Navig. Bridge deck	Lead		96.00	kg	

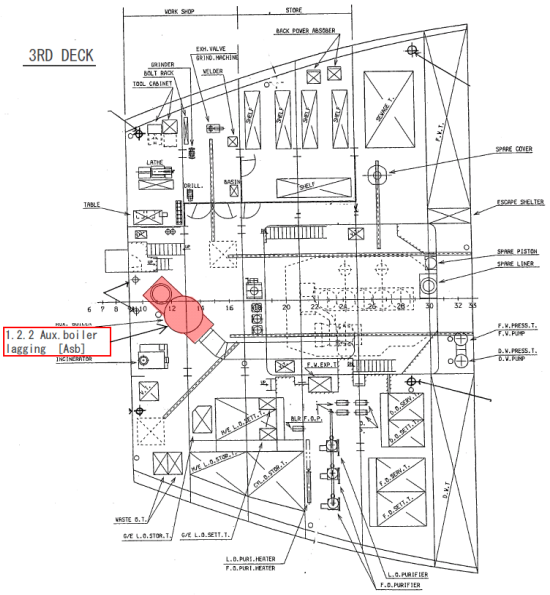
I-3 Structure and hull containing materials listed in Table A and Table B of appendix 1 of the guidelines

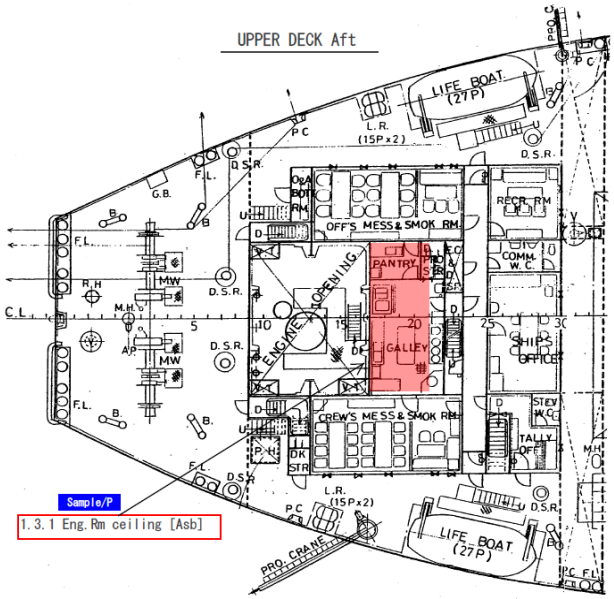
No.	Name of structural element	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Back deck ceiling	Upper deck	Asbestos	Engine-room ceiling (A class)	3.80	kg	Confirmed by sampling
2							
3							

* Each item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part.

Example of location diagram of hazardous materials







APPENDIX 6

FORM OF MATERIAL DECLARATION

<Date of declaration>

Date	

<MD ID number>

MD- ID-No.	

<Other information>

Remark 1	
Remark 2	
Remark 3	

<Supplier (respondent) information>

Company name	
Division name	
Address	
Contact person	
Telephone number	
Fax number	
Email address	
SDoC ID no.	

<Product information>

Product name	Product number	Delivered unit			Product information
		Amount	Unit		

<Materials information>

		Unit
This materials information shows the amount of hazardous materials contained in	1	

(unit: piece, kg, m, m^2, m^3, etc.) of the product.

Table	Material name		Threshold value	Present above threshold value	If yes, material mass		If yes, information on where it is used
				Yes / No	Mass	Unit	
Table A (materials listed in appendix 1 of the Convention)	Asbestos	Asbestos	0.1%[18]				
	Polychlorinated biphenyls (PCBs)	Polychlorinated biphenyls (PCBs)	50 mg/kg				
	Ozone depleting substance	Chlorofluorocaobons (CFCs)	no threshold value				
		Halons					
		Other fully halogenated CFCs					
		Carbon tetrachloride					
		1,1,1-Trichloroethane					
		Hydrochlorofluorocaobons					
		Hydrobromofluorocaobons					
		Methyl bromide					
		Bromochloromethane					
	Anti-fouling systems containing organotin compounds as a biocide		2,500 mg total tin/kg				

[18] In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the UN recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN'S Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as Category 1A (including asbestos mixtures) under the GHS are required to be labelled as carcinogenic if the ratio is more than 0.1%. However, if 1% is applied, this threshold value should be recorded in the Inventory and, if available, the Material Declaration and can be applied not later than five years after the entry into force of the Convention. The threshold value of 0.1% need not be retroactively applied to those Inventories and Material Declarations.

Table	Material name	Threshold value	Present above threshold value	If yes, material mass		If yes, information on where it is used
			Yes / No	Mass	Unit	
Table B (materials listed in appendix 2 of the Convention)	Cadmium and cadmium compounds	100 mg/kg				
	Hexavalent chromium and hexavalent chromium compounds	1,000 mg/kg				
	Lead and lead compounds	1,000 mg/kg				
	Mercury and mercury compounds	1,000 mg/kg				
	Polybrominated biphenyl (PBBs)	50 mg/kg				
	Polybrominated dephenyl ethers (PBDEs)	1,000 mg/kg				
	Polychloronaphthalenes (Cl >= 3)	50 mg/kg				
	Radioactive substances	no threshold value				
	Certain shortchain chlorinated paraffins	1%				

APPENDIX 7

FORM OF SUPPLIER'S DECLARATION OF CONFORMITY

SUPPLIER'S DECLARATION OF CONFORMITY FOR MATERIAL DECLARATION MANAGEMENT

1 Identification number _____

2 Issuer's name _____

Issuer's address _____

3 Object(s) of the declaration _____

_____

_____

4 The object(s) of the declaration described above is in conformity with the following documents :

	Document No.	Title	Edition/date of issue
5	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

6 Additional information _____

_____

Signed for and on behalf of

_____

_____

(place and date of issue)

7 _____ _____

(name, function) *(signature)*

APPENDIX 8

EXAMPLES OF TABLE A AND TABLE B MATERIALS OF APPENDIX 1 WITH CAS NUMBERS

This list was developed with reference to Joint Industry Guide No.101. This list is not exhaustive; it represents examples of chemicals with known CAS numbers and may require periodical updating.

Table	Material Category	Substances	CAS Numbers
Table A (materials listed in appendix 1 of the Convention)	Asbestos	Asbestos	1332-21-4
		Actinolite	77536-66-4
		Amosite (Grunerite)	12172-73-5
		Anthophyllite	77536-67-5
		Chrysotile	12001-29-5
		Crocidolite	12001-28-4
		Tremolite	77536-68-6
	Polychlorinated biphenyls (PCBs)	Polychlorinated biphenyls	1336-36-3
		Aroclor	12767-79-2
		Chlorodiphenyl (Aroclor 1260)	11096-82-5
		Kanechlor 500	27323-18-8
		Aroclor 1254	11097-69-1
	Ozone depleting substances/ isomers (they may contain isomers that are not listed here)	Trichlorofluoromethane (CFC11)	75-69-4
		Dichlorodifluoromethane (CFC12)	75-71-8
		Chlorotrifluoromethane (CFC 13)	75-72-9
		Pentachlorofluoroethane (CFC 111)	354-56-3
		Tetrachlorodifluoroethane (CFC 112)	76-12-0
		Trichlorotrifluoroethane (CFC 113)	354-58-5
		1,1,2 Trichloro-1,2,2 trifluoroethane	76-13-1
		Dichlorotetrafluoroethane (CFC 114)	76-14-2
		Monochloropentafluoroethane (CFC 115)	76-15-3
		Heptachlorofluoropropane (CFC 211)	422-78-6
			135401-87-5
		Hexachlorodifluoropropane (CFC 212)	3182-26-1
		Pentachlorotrifluoropropane (CFC 213)	2354-06-5
			134237-31-3
		Tetrachlorotetrafluoropropane (CFC 214) 1,1,1,3-Tetrachlorotetrafluoropropane	29255-31-0 2268-46-4
		Trichloropentafluoropropane (CFC 215) 1,1,1-Trichloropentafluoropropane 1,2,3-Trichloropentafluoropropane	1599-41-3 4259-43-2 76-17-5
		Dichlorohexafluoropropane (CFC 216)	661-97-2
		Monochloroheptafluoropropane (CFC 217)	422-86-6
		Bromochlorodifluoromethane (Halon 1211)	353-59-3
		Bromotrifluoromethane (Halon 1301)	75-63-8
		Dibromotetrafluoroethane (Halon 2402)	124-73-2
		Carbon tetrachloride (Tetrachloromethane)	56-23-5
		1,1,1, - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
		Bromomethane (Methyl bromide)	74-83-9
		Bromodifluoromethane and isomers (HBFC's)	1511-62-2
		Dichlorofluoromethane (HCFC 21)	75-43-4
		Chlorodifluoromethane (HCFC 22)	75-45-6
		Chlorofluoromethane (HCFC 31)	593-70-4

Table	Material Category	Substances	CAS Numbers
		Tetrachlorofluoroethane (121) HCFC 1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a) 1,1,2,2-tetracloro-1-fluoroethane	134237-32-4 354-11-0 354-14-3
		Trichlorodifluoroethane (HCFC 122) 1,2,2-trichloro-1,1-difluoroethane	41834-16-6 354-21-2
		Dichlorotrifluoroethane(HCFC 123) Dichloro-1,1,2-trifluoroethane 2,2-dichloro-1,1,1-trifluroethane 1,2-dichloro-1,1,2-trifluroethane (HCFC-123a) 1,1-dichloro-1,2,2-trifluroethane (HCFC-123b) 2,2-dichloro-1,1,2-trifluroethane (HCFC-123b)	34077-87-7 90454-18-5 306-83-2 354-23-4 812-04-4 812-04-4
		Chlorotetrafluoroethane (HCFC 124) 2-chloro-1,1,1,2-tetrafluoroethane 1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	63938-10-3 2837-89-0 354-25-6
		Trichlorofluoroethane (HCFC 131) 1-Fluoro-1,2,2-trichloroethane 1,1,1-trichloro-2-fluoroethane (HCFC131b)	27154-33-2; (134237-34-6) 359-28-4 811-95-0
		Dichlorodifluoroethane (HCFC 132) 1,2-dichloro-1,1-difluoroethane (HCFC 132b) 1,1-dichloro-1,2-difluoroethane (HFCF 132c) 1,1-dichloro-2,2-difluoroethane 1,2-dichloro-1,2-difluoroethane	25915-78-0 1649-08-7 1842-05-3 471-43-2 431-06-1
		Chlorotrifluoroethane (HCFC 133) 1-chloro-1,2,2-trifluoroethane 2-chloro-1,1,1-trifluoroethane (HCFC-133a)	1330-45-6 1330-45-6 75-88-7
		Dichlorofluoroethane(HCFC 141) 1,1-dichloro-1-fluoroethane (HCFC-141b) 1,2-dichloro-1-fluoroethane	1717-00-6; (25167-88-8) 1717-00-6 430-57-9
		Chlorodifluoroethane (HCFC 142) 1-chloro-1,1-difluoroethane (HCFC142b) 1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4 75-68-3 25497-29-4
		Hexachlorofluoropropane (HCFC 221)	134237-35-7
		Pentachlorodifluoropropane (HCFC 222)	134237-36-8
		Tetrachlorotrifluropropane (HCFC 223)	134237-37-9
		Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
		Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225)	127564-92-5; (2713-09-9)
		2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC 225aa)	128903-21-9
		2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba)	422-48-0
		1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb)	422-44-6
		3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca)	422-56-0
		1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb)	507-55-1
		1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC 225cc)	13474-88-9
		1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da)	431-86-7
		1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea)	136013-79-1
		1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC 225eb)	111512-56-2
		Chlorohexafluoropropane (HCFC 226)	134308-72-8
		Pentachlorofluoropropane (HCFC 231)	134190-48-0
		Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
		Trichlorotrifluoropropane (HCFC 233) 1,1,1-Trichloro-3,3,3-trifluoropropane	134237-40-4 7125-83-9
		Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
		Chloropentafluoropropane (HCFC 235) 1-Chloro-1,1,3,3,3-pentafluoropropane	134237-41-5 460-92-4
		Tetrachlorofluoropropane (HCFC 241)	134190-49-1
		Trichlorodifluoropropane (HCFC 242)	134237-42-6
		Dichlorotrifluoropropane (HCFC 243) 1,1-dichloro-1,2,2-trifluoropropane 2,3-dichloro-1,1,1-trifluoropropane 3,3-Dichloro-1,1,1-trifluoropropane	134237-43-7 7125-99-7 338-75-0 460-69-5
		Chlorotetrafluoropropane (HCFC 244)	134190-50-4

Table	Material Category	Substances	CAS Numbers
		3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
		Trichlorofluoropropane (HCFC 251)	134190-51-5
		1,1,3-trichloro-1-fluoropropane	818-99-5
		Dichlorodifluoropropane (HCFC 252)	134190-52-6
		Chlorotrifluoropropane (HCFC 253)	134237-44-8
		3-chloro-1,1,1-trifluoropropane (HCFC 253fb)	460-35-5
		Dichlorofluoropropane (HCFC 261)	134237-45-9
		1,1-dichloro-1-fluoropropane	7799-56-6
		Chlorodifluoropropane (HCFC 262)	134190-53-7
		2-chloro-1,3-difluoropropane	102738-79-4
		Chlorofluoropropane (HCFC 271)	134190-54-8
		2-chloro-2-fluoropropane	420-44-0
	Organotin compounds (tributyl tin, triphenyl tin, tributyl tin oxide)	Bis(tri-n-butyltin) oxide	56-35-9
		Triphenyltin N,N'-dimethyldithiocarbamate	1803-12-9
		Triphenyltin fluoride	379-52-2
		Triphenyltin acetate	900-95-8
		Triphenyltin chloride	639-58-7
		Triphenyltin hydroxide	76-87-9
		Triphenyltin fatty acid salts (C=9-11)	47672-31-1
		Triphenyltin chloroacetate	7094-94-2
		Tributyltin methacrylate	2155-70-6
		Bis(tributyltin) fumarate	6454-35-9
		Tributyltin fluoride	1983-10-4
		Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5
		Tributyltin acetate	56-36-0
		Tributyltin laurate	3090-36-6
		Bis(tributyltin) phthalate	4782-29-0
		Copolymer of alkyl acrylate, methyl methacrylate and tributyltin methacrylate(alkyl; C=8)	-
		Tributyltin sulfamate	6517-25-5
		Bis(tributyltin) maleate	14275-57-1
		Tributyltin chloride	1461-22-9
		Mixture of tributyltin cyclopentanecarboxylate and its analogs (Tributyltin naphthenate)	-
		Mixture of tributyltin 1,2,3,4,4a, 4b, 5,6,10,10adecahydro-7-isopropyl-1, 4a-dimethyl-1-phenanthlenecarboxylate and its analogs (Tributyltin rosin salt)	-
		Other tributyl tins & triphenyl tins	-
Table B (Materials listed in appendix 2 of the Convention)	Cadmium/ cadmium compounds	Cadmium	7440-43-9
		Cadmium oxide	1306-19-0
		Cadmium sulfide	1306-23-6
		Cadmium chloride	10108-64-2
		Cadmium sulfate	10124-36-4
		Other cadmium compounds	-
	Chromium VI compounds	Chromium (VI) oxide	1333-82-0
		Barium chromate	10294-40-3
		Calcium chromate	13765-19-0
		Chromium trioxide	1333-82-0
		Lead (II) chromate	7758-97-6
		Sodium chromate	7775-11-3
		Sodium dichromate	10588-01-9
		Strontium chromate	7789-06-2
		Potassium dichromate	7778-50-9
		Potassium chromate	7789-00-6
		Zinc chromate	13530-65-9
		Other hexavalent chromium compounds	-
	Lead/lead compounds	Lead	7439-92-1
		Lead (II) sulfate	7446-14-2
		Lead (II) carbonate	598-63-0

Table	Material Category	Substances	CAS Numbers
		Lead hydrocarbonate	1319-46-6
		Lead acetate	301-04-2
		Lead (II) acetate, trihydrate	6080-56-4
		Lead phosphate	7446-27-7
		Lead selenide	12069-00-0
		Lead (IV) oxide	1309-60-0
		Lead (II,IV) oxide	1314-41-6
		Lead (II) sulfide	1314-87-0
		Lead (II) oxide	1317-36-8
		Lead (II) carbonate basic	1319-46-6
		Lead hydroxidcarbonate	1344-36-1
		Lead (II) phosphate	7446-27-7
		Lead (II) chromate	7758-97-6
		Lead (II) titanate	12060-00-3
		Lead sulfate, sulphuric acid, lead salt	15739-80-7
		Lead sulphate, tribasic	12202-17-4
		Lead stearate	1072-35-1
		Other lead compounds	-
	Mercury/ mercury compounds	Mercury	7439-97-6
		Mercuric chloride	33631-63-9
		Mercury (II) chloride	7487-94-7
		Mercuric sulfate	7783-35-9
		Mercuric nitrate	10045-94-0
		Mercuric (II) oxide	21908-53-2
		Mercuric sulfide	1344-48-5
		Other mercury compounds	-
	Polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs)	Bromobiphenyl and its ethers	2052-07-5 (2-Bromobiphenyl)
			2113-57-7 (3-Bromobiphenyl
			92-66-0 (4-Bromobiphenyl)
			101-55-3 (ether)
		Decabromobiphenyl and its ethers	13654-09-6
			1163-19-5 (ether)
		Dibromobiphenyl and its ethers	92-86-4
			2050-47-7 (ether)
		Heptabromobiphenylether	68928-80-3
		Hexabromobiphenyl and its ethers	59080-40-9
			36355-01-8 (hexabromo-1,1'-biphenyl)
			67774-32-7 (Firemaster FF-1)
			36483-60-0 (ether)
		Nonabromobiphenylether	63936-56-1
		Octabromobiphenyl and its ethers	61288-13-9
			32536-52-0 (ether)
		Pentabromobidphenyl ether (note: commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides.	32534-81-9 (CAS number used for commercial grades of PeBDPO)
		Polybrominated biphenyls	59536-65-1
		Tetrabromobiphenyl and its ethers	40088-45-7
			40088-47-9 (ether)
		Tribromobiphenyl ether	49690-94-0
	Polychlorinated naphthalenes	Polychlorinated naphthalenes	70776-03-3
		Other polychlorinated naphthalenes	-
	Radioactive substances	Uranium	-
		Plutonium	-
		Radon	-
		Americium	-
		Thorium	-
		Cesium	7440-46-2
		Strontium	7440-24-6

Table	Material Category	Substances	CAS Numbers
		Other radioactive substances	-
	Certain shortchain chlorinated paraffins (with carbon length of 10-13 atoms)	Chlorinated paraffins (C10-13)	85535-84-8
		Other short chain chlorinated paraffins	-

APPENDIX 9

SPECIFIC TEST METHODS

1 Asbestos

Types to test for: as per resolution MEPC.179(59); Actinolite CAS 77536-66-4 Amosite (Grunerite) CAS 12172-73-5 Anthophyllite CAS 77536-67-5 Chrysotile CAS 12001-29-5 Crocidolite CAS 12001-28-4 Asbestos Tremolite CAS 77536-68-6.

Specific testing techniques: Polarized Light Microscopy (PLM), electron microscope techniques and/or X-Ray Diffraction (XRD) as applicable.

Specific reporting information: The presence/no presence of asbestos, indicate the concentration range, and state the type when necessary.

Notes: .1 The suggested three kinds of testing techniques are most commonly used methods when analysing asbestos and each of them has its limitation. Laboratories should choose the most suitable methods to determine, and in most cases, two or more techniques should be utilized together.

.2 The quantification of asbestos is difficult at this stage, although the XRD technique is applicable. Only a few laboratories conduct the quantification rather than the qualification, especially when a precise number is required. Considering the demand from the operators and ship recycling parties, the precise concentration is not strictly required. Thereby, the concentration range is recommended to report, and the recommended range division according to standard VDI 3866 is as follows:

- Asbestos not detected
- Traces of asbestos detected
- Asbestos content approx. 1% to 15% by mass
- Asbestos content approx. 15% to 40% by mass
- Asbestos content greater than 40% by mass

Results that specified more precisely must be provided with a reasoned statement on the uncertainty.

.3 As to the asbestos types, to distinguish all six different types is time consuming and in some cases not feasible by current techniques; while on the practical side, the treatment of different types of asbestos is the same. Therefore, it is suggested to report the type when necessary.

2 Polychlorinated biphenyls (PCBs)

Note: There are 209 different congeners (forms) of PCB of it is impracticable to test for all. Various organizations have developed lists of PCBs to test for as indicators. In this instance two alternative approaches are recommended. Method 1 identifies the seven congeners used by the International Council for the Exploration of the Sea (ICES). Method 2 identifies 19 congeners and seven types of aroclor (PCB mixtures commonly found in solid shipboard materials containing PCBs). Laboratories should be familiar with the requirements and consequences for each of these lists.

Types to test for: Method 1: ICES7 congeners (28, 52, 101, 118, 138, 153, 180). Method 2: 19 congeners and seven types of aroclor, using the US EPA 8082a test.

Specific testing technique: GC-MS (congener specific) or GC-ECD or GC-ELCD for applicable mixtures such as aroclors. Note: standard samples must be used for each type.

Sample Preparation: It is important to properly prepare PCB samples prior to testing. For solid materials (cables, rubber, paint, etc.), it is especially critical to select the proper extraction procedure in order to release PCBs since they are chemically bound within the product.

Specific reporting information: PCB congener, ppm per congener in sample, and for Method 2, ppm per aroclor in sample should also be reported.

Notes:

.1 Certain field or indicator tests are suitable for detecting PCBs in liquids or surfaces. However, there are currently no such tests that can accurately identify PCBs in solid shipboard materials. It is also noted that many of these tests rely on the identification of free chlorine ions and are thus highly susceptible to chlorine contamination and false readings in a marine environment where all surfaces are highly contaminated with chlorine ions from the sea water and atmosphere.

.2 Several congeners are tested for as "indicator" congeners. They are used because their presence often indicates the likelihood of other congeners in greater quantities (many PCBs are mixes, many mixes use a limited number of PCBs in small quantities, therefore the presence of these small quantities indicates the potential for a mix containing far higher quantities of other PCBs).

.3 Many reports refer to "total PCB", which is often a scaled figure to represent likely total PCBs based on the sample and the common ratios of PCB mixes. Where this is done the exact scaling technique must be stated, and is for information only and does not form part of the specific technique.

3 Ozone depleting substances

Types to test for: as per appendix 8 of these guidelines all the listed CFCs, Halons, HCFCs and other listed substance as required by Montreal Protocol.

Specific testing technique: Gas Chromatography-Mass Spectrometry (GC-MS), coupled Electron Capture Detectors (GC-ECD) and Electrolytic Conductivity Detectors (GC-ELCD).

Specific reporting information: Type and concentration of ODS.

4 Anti-fouling systems containing organotin compounds as a biocide

Types to test for: Anti-fouling compounds and systems regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention), including: tributyl tins (TBT), triphenyl tins (TPT) and tributyl tin oxide (TBTO).

Specific testing technique: As per resolution MEPC.104(49) (*Guidelines for Brief Sampling of Anti-Fouling Systems on Ships*), adopted 18 July 2003, using ICPOES, ICP, AAS, XRF, GC-MS as applicable.
Specific reporting information: Type and concentration of organotin compound.

Note: For "field" or "indicative" testing it may be acceptable to simply identify presence of tin, due to the expected good documentation on anti-fouling systems.

APPENDIX 10

EXAMPLES OF RADIOACTIVE SOURCES

The following list contains examples of radioactive sources that should be included in the Inventory, regardless of the number, the amount of radioactivity or the type of radionuclide.

Examples of consumer products with radioactive materials

Ionization chamber smoke detectors (typical radionuclides ^{241}Am; ^{226}Ra)
Instruments/signs containing gaseous tritium light sources (^{3}H)
Instruments/signs containing radioactive painting (typical radionuclide ^{226}Ra)
High intensity discharge lamps (typical radionuclides ^{85}Kr; ^{232}Th)
Radioactive lighting rods (typical radionuclides ^{241}Am; ^{226}Ra)

Examples of industrial gauges with radioactive materials

Radioactive level gauges
Radioactive dredger gauges[19]
Radioactive conveyor gauges[56]
Radioactive spinning pipe gauges[56]

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[19] Typical radionuclides: ^{241}Am; $^{241}Am/Be$; ^{252}Cf; ^{244}Cm; ^{60}Co; ^{137}Cs; ^{153}Gd; ^{192}Ir; ^{147}Pm; ^{238}Pu; $^{239}Pu/Be$; ^{226}Ra; ^{75}S; ^{90}Sr (^{90}Y); ^{170}Tm; ^{169}Yb

European Maritime Safety Agency

GUIDANCE ON THE INVENTORY OF HAZARDOUS MATERIALS

IHM DEVELOPMENT AND MAINTENANCE IN THE CONTEXT OF THE EU SHIP RECYCLING REGULATION

EMSA

GUIDANCE ON THE INVENTORY OF HAZARDOUS MATERIALS

EMSA
European Maritime Safety Agency

1. INTRODUCTION

This document provides best practice guidance and a harmonised approach to the development and maintenance of inventories of hazardous materials (hereinafter referred to as "the Inventory" or "the IHM") in accordance with Article 5 and Article 12 of the Regulation (EU) 1257/2013 of the European Parliament and the Council on ship recycling (hereinafter referred to as "the Regulation" or as "the SRR"). This document has been prepared on the basis of current knowledge and experience from the Member States, the industry and EMSA and other stakeholders.

Furthermore, this document provides guidance for a harmonised and effective approach to the inspection of ships ascertaining their compliance, to identifying non-compliances and to applying control procedures for the enforcement of the Regulation as regards the development and maintenance of an IHM on board ships.

EMSA's Best Practice Guidance is a non-binding document and nothing in this guidance document should be construed as generating mandatory requirements on any of the involved parties.

1.1 BACKGROUND

Keeping an up-to-date Inventory on board a ship throughout its life-cycle is a key requirement laid down in both the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (hereinafter referred to as "the Convention" or "the HKC") and the Regulation. The Regulation's requirements for the development of the Inventory are in fact almost entirely based on the respective requirements of the Convention. An IHM developed in accordance with the Regulation must be compiled taking into account the relevant IMO guidelines.

Nevertheless, EU legislation sets a few more requirements for the Inventory than the Convention does. Therefore, it is essential that the development and maintenance of the IHM in pursuance of the SRR is done a) in a harmonised and comprehensive manner in the light of the international knowledge and experience as reflected most notably in the relevant IMO guidelines, while b) taking into account the specificities of the EU legislative context, in particular of the Regulation itself.

This guidance will be kept under review in the light of the experience that will be gained with its application and with the aim to be a workable and useful document for all the relevant stakeholders, in view of the application of the SRR.

The Hong Kong Convention and the IMO guidelines

The HKC covers the design, construction, survey, certification, operation and recycling of ships to facilitate safe and environmentally sound recycling. In accordance with Regulation 5 of the Annex of the HKC, each ship shall have on board an IHM[1]. The IHM shall be verified either by the Administration or by any person or organisation authorised by it.

1 'Existing' ships shall comply as far as practicable not later than 5 years after the entry into force of the HKC, or before going for recycling if this is earlier.

In the wake of the adoption of the HKC, the IMO has published a number of guidelines on ship recycling. As per the Regulation, the IMO guidelines, in their updated form, shall be taken into account when compiling the IHM[2], preparing a VSCP[3], conducting flag State surveys[4] or detailed inspections of the port State[5].

In this respect, this guidance document is complementary to the relevant IMO guidelines. It is to be regarded in the light of these guidelines with a view to provide a comprehensive framework for the practical implementation of the relevant provisions of the Regulation.

The EU Ship Recycling Regulation

Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 'on ship recycling and amending Regulation (EC) 1013/2006 and Directive 2009/16/EC' was published in the Official Journal[6] of the EU on 10 December 2013. It entered into force on 30 December 2013. Its articles will apply at various stages, as detailed in article 32 of the Regulation[7].

The SRR is closely following the HKC's structure, concepts and definitions. However, the Regulation also sets out a number of additional requirements that go beyond those set in the HKC, including on inventories of hazardous materials. In this regard, EMSA's guidance is based on the EU specific requirements when these requirements go beyond those set in the HKC.

In accordance with Article 5 of the Regulation, all ships flying the flag of a Member State shall have on board an IHM. Furthermore, in accordance with Article 12 of the Regulation, all ships flying the flag of a third country shall also have on board an IHM when calling at a port or anchorage of a Member State. In this respect, the Regulation takes a 'flag neutral' approach although all ships flying the flag of a third country will be considered as if they were 'existing ships' and, in general, will be treated accordingly[8].

In relation to the IHM, there are two basic categories of ships (i.e. flying the flag of a Member State): **'new'** and **'existing'** ships and a provisional category of **'ships going for recycling'** which includes all ships going for recycling from the date of the publication of the European List and before the final application date of the SRR[9]. In general, a 'new' ship shall have on board an IHM which shall identify at least the HM referred to in Annex II of the Regulation while an 'existing' ship or a 'ship going for recycling'[10] before the final application date of the SRR, shall have on board an IHM which shall identify, at least, the HM listed in Annex I of the Regulation. Annex I of the Regulation lists five types of hazardous materials; Annex II lists the items of Annex I as well as an additional ten types of hazardous materials.

2 Resolution MEPC.269(68).
3 See footnote (2).
4 Resolution MEPC.222(64).
5 Resolution MEPC.223(64).
6 OJ L 330, 10-12-2013, p.1-20.
7 See Annex A for the timeline of the application of the Regulation.
8 See Table A for some possible differences between 'existing' (EU) and 'non-EU' ships.
9 N.B.: And, because of the application dates of the Regulation (see Article 32), do not have yet on board an IHM as appropriate. For more details, see Annex A.
10 The term is used in accordance with the second subparagraph of Article 5(2) of the Regulation and applies only for ships flying the flag of a Member State.

All ships flying the flag of a Member State shall be subject to a survey regime and they shall carry on board a ship-specific 'Inventory Certificate' issued by the administration or a RO authorised by it and supplemented by Part I of the IHM.

When calling at a port or anchorage of a Member State, all ships flying the flag of a third country shall carry on board a ship-specific 'statement of compliance' issued by the relevant authorities of the third country whose flag the ship is flying or an organisation authorised by them and supplemented by Part I of the IHM.

In both cases the IHM shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing any HM referred to in Annex II of the Regulation and relevant changes in the structure and equipment of the ship. However, for the ships flying the flag of a third country, any possible exemptions and transitional arrangements applicable to those materials under international law will also be taken into account.

Member States shall apply port State control provisions for ships in accordance with the PSC Directive[11]. This control shall be limited to checking that either an inventory certificate or a ready for recycling certificate is kept on board ships flying the flag of a Member State of the Union. Ships flying the flag of a third country should always be in a position to submit a copy of the statement of compliance together with the Inventory. In addition, Member States shall apply port State control provisions for ships in accordance with Article 11 or Article 12 of the Regulation as appropriate, and they may carry out detailed inspections to enforce the relevant provisions of the Regulation. [12][13]

1.2 OBJECTIVE

The aim of this document is to assist the Member States and all the relevant stakeholders involved in the IHM process, with a reference document that provides both technical information and procedural guidance.

In addition, EMSA's best practice guidance should provide the overarching principles for the development and maintenance of the IHM in order to ensure compliance with the EU requirements.

Finally, it should support the SRR with regard to all the aspects related to the IHM, building upon the existing IMO guidelines, identifying best practices and providing reference standards for the development and maintenance of the IHM and for the training and qualifications of the personnel which will be involved in the process.

The ultimate goal of this guidance document is to facilitate the development of a credible ship-specific IHM which will provide reliable information on the actual HM present on board, in order to protect health and safety and to prevent pollution at ship recycling facilities.

11 Directive 2009/16/EC, OJ L 131, 28-5-2009, p.57.
12 Resolution MEPC.223(64).
13 See below under chapter 7 'Enforcement'.

1.3 SCOPE OF APPLICATION

The Regulation applies to ships on international voyages, of 500 GT and above flying the flag of a Member State or the flag of a third country under the conditions of Article 12 of the Regulation.

The Regulation applies to all vessels of any type whatsoever operating or having operated in the marine environment including submersibles, floating craft, floating platforms, self-elevating platforms, FSUs and FPSOs, as well as ships stripped of equipment or being towed.

It does not apply to any warships, naval auxiliary or other ships owned or operated by a state and used, for the time being, only on government non-commercial service. 'New' and 'existing' ships, 'ships going for recycling' as well as 'ships flying the flag of a third country' shall have on board an IHM in accordance with the relevant provisions of Article 5 or Article 12 of the Regulation.

The scope of this guidance coincides with the scope of the Regulation. Therefore, the provisions of the guidance document should be utilised for the development and proper maintenance and update of the IHM throughout the operational life of ships for which the SRR applies. Furthermore, it is suggested that this guidance is utilised by the administrations of the Member States, the relevant authorities involved in Port State Control activities, the recognised organisations and the authorised organisations, for the application and enforcement of the relevant requirements of the Regulation in a consistent, harmonised and effective manner.

2. DEFINITIONS

The terms used in this guidance document have the same meaning as those defined in the Regulation and in the IMO guidelines with the following additional definitions which apply for the purposes of this guidance document only

- **'IHM process'** is the whole process of development and maintenance of an IHM throughout the operational life-cycle of the ship. It involves all the steps of developing an IHM including issuing/checking of any relevant documentation (e.g. Material Declarations), sampling and analysis, verification and life-cycle management

- **'Individual IHM expert'** is a person who has the appropriate training, qualifications and knowledge to conduct HM surveys for the development and maintenance of an IHM. He or she should have experience on ship structure and on handling of HM and sufficient knowledge of how to compile an IHM and of all the relevant international and EU legislation[14]

- **'IHM expert company'** is an entity employing or contracting individual IHM experts to conduct any relevant work or task in relation to the IHM process for the purpose of compiling or updating Inventories of Hazardous Materials. The IHM expert company should use a documented management system and should work on suitable standards, covering the relevant activities of the company

14 See Annex B as a reference.

- **'HM survey'** is an investigation to trace and identify the presence or absence of Hazardous Materials contained in the equipment, systems, and/or areas on board a ship and may include review of any relevant documents, visual inspections and sampling

- **'Sampling check'** is the taking of samples to identify the presence or absence of HM contained in the equipment, systems, and/or areas on board a ship, by suitable and generally accepted methods such as laboratory analysis

- **'Representative sampling'** is a method to sample materials of the same kind in a representative manner. Such materials should be checked to ensure that they are of the same kind

- **'Blank Sample'** is a clean sample or sample of matrix processed so as to measure artifacts in the measurement (sampling and analysis) process

- **'Blind Sample'** is a sample submitted to evaluate performance with concentration and identity unknown to the analyst

- **'Bulk Sample'** is a sample taken from a larger quantity (lot) for analysis or recording purposes

- **'Specific testing'** is a repeatable and reliable method of testing samples, which can demonstrate definitively whether a Hazardous Material exists or not and provide a known type of the Hazardous Material

- **'Accredited laboratory'** is a laboratory accredited in accordance with ISO 17025 or an equivalent standard for the purpose of conducting specific tests for HMs included in the SRR and capable of providing a written report that can be relied upon by all parties.

3. MATERIALS TO BE LISTED IN THE IHM

The Inventory consists of:

- Part I: HM contained in ship structure or equipment and referred to in Annexes I and Annexes II of the SRR;

- Part II: Operationally generated wastes; and

- Part III: Stores.

In general, the IMO guidelines[15] provide sufficient information for the development of the IHM in relation to the HM included in Appendices 1 and 2 of the HKC as well as an indicative list of these HM with CAS numbers and respective specific test methods. Therefore, for information on the HM included in Appendices 1 and 2 of the HKC and in Annexes 1 and 2 of the SRR reference should be made to the IMO guidelines. In Annex C of this guidance document some specific information is provided on the two additional HM (PFOS[16] and HBCDD) included only in Annexes I and II of the SRR.

15 Resolution MEPC.269(68).
16 Not applicable for ships flying the flag of a third country.

The Inventory should be developed on the basis of the standard format set out in appendix 2 of the IMO guidelines. However, in this format there should be a reference stating that the IHM has been developed to cover also the requirements of the SRR[17]. This would entail that the Inventory would keep the classification of Materials according to the IMO guidelines with the addition of two HM (PFOS and HBCDD) as appropriate.

3.1 RECORDING OF HM IN THE IHM PART I

For ships flying a flag of a Member State HM shall be listed in the IHM Part I in accordance with the provisions of paragraphs (1) and (2) of Article 5 of the SRR.

For ships flying the flag of a third country HM shall be listed in the IHM Part I in accordance with the provisions of paragraphs (3) and (4) of Article 12 of the SRR.

Recording of HM in the IHM Part I should be done in accordance with the IMO guidelines. Loosely fitted equipment, batteries, spare parts, exemptions, and 'bulk listing' of similar materials should be treated in line with the IMO guidelines.

3.2 THRESHOLD VALUES OF HM INCLUDED IN THE IHM PART I

HM should be reported in the IHM when the material is present in the product above the applicable threshold value. However, when there is no specified threshold value for a HM[18] then it should be reported in the IHM when deliberately used in the formulation of a product where its continued presence is desired to provide a specific characteristic, appearance, property, attribute or quality regardless of quantity. Suppliers should report such substances when they have knowledge (or with reasonable inquiry should have knowledge) of their presence.

As a general principle, unless expressly provided otherwise in the relevant EU legislation, revised threshold values for the materials to be listed in the IHM Part I, should be used for IHM developed or updated after the adoption of the revised values and need not be applied to existing IHM and IHM under development. However, when materials are added to the IHM, such as during maintenance, the revised threshold values should be applied and recorded in the IHM.

Annex B provides information on the HM that should be listed in the IHM Part I, the relevant threshold values and the referenced EU legislation which may be of relevance to the respective HM.

17 E.g. "the Inventory follows the requirements set out in the HKC and in the EU Ship Recycling Regulation (EU) 1257/2013".
18 i.e. Ozone Depleting Substances or Radioactive substances.

4. BASIC CONCEPTS FOR THE DEVELOPMENT AND MAINTENANCE OF THE IHM

The development and maintenance of the IHM is a key requirement of the Regulation. The Regulation requires 'ships' to have it on board therefore, the obligation lies in principle with the shipowner. Furthermore, the 'installation' (or use) of HM referred to in Annex I of the SRR is prohibited or restricted as specified in this Annex and, subsequently, this entails additional responsibilities to the shipbuilders and other stakeholders (e.g. to manufacturers and suppliers).

The development procedure of a new IHM may differ depending on whether the ship is a new or an existing one[19]. However, the overarching principles remain the same. The ship owner or the shipbuilder may draw upon assistance by an IHM expert. This is strongly recommended for safety and health protection reasons and in order to have a minimum assurance that the work is carried out by competent personnel, under a quality management system and in accordance with recommended guidance (i.e. the EMSA's guidance document and the relevant IMO guidelines).

The hereunder provisions provide a framework for a harmonised, qualitative and credible development and maintenance of the Inventory with a view to securing a level playing field for the responsible actors and enhancing the overall quality and credibility of the produced IHM under the SRR.

4.1 OVERARCHING PRINCIPLES

The development and maintenance of the IHM should be subject to the principles of *independence, quality and accountability.*

These overarching principles should apply throughout the whole IHM process by all the relevant stakeholders including ship-builders, manufacturers, shipowners, administrations, recognised organisations, authorised organisations, and any involved personnel, individual IHM experts or IHM expert companies. The flag State administrations and any relevant national authority are primarily responsible for securing the application of these principles.

More specifically:

Independence

The persons involved in the IHM process should be able to demonstrate personal integrity in the performance of their duties.

Impartiality and objectivity is needed in all work conducted by anyone involved in the IHM process in particular the IHM experts.

Independence from the entity responsible for the verification of the IHM on behalf of the flag State is indispensable. In this regard, conflicts of interest between the entity (individual, company or organisation) developing or updating the IHM and the entity verifying the IHM on behalf of the flag State should be prevented.

19 See below Chapter 5.1 and 5.2.

Quality

The persons involved in the IHM process should be able to demonstrate a high level of professional competence in the performance of their duties.

The work of any person or party involved in the IHM process should be of the highest possible quality and in compliance with the requirements of the Regulation and any applicable international legislation.

All the entities involved in the IHM process (i.e. IHM experts, shipbuilders, shipping companies) should apply a documented management system and quality controls to ensure the credibility of the IHM process for the development or maintenance of the Inventory.

Accountability

Any person or party involved in the IHM process should have a clear understanding of the duties and responsibilities he/she/it assumes in this process.

The responsibility for the IHM's compliance with the requirements of the Regulation lies primarily with the ship owner and/or the shipbuilder. They have the duty of exercising due diligence when they appoint or instruct any person or party to conduct HM surveys, to compile reports or to perform any kind of work within the context of the IHM process. Appointing an IHM expert to compile/update an IHM in accordance with this guidance document should, in principle, be considered as exercise of due diligence in order to meet the relevant requirements of the Regulation.

The persons or parties involved in the IHM process should keep records of the HM surveys performed. Written records should be kept to the extent possible. Every person involved in the IHM process may be held liable in case of fault or gross negligence in the execution of his/her duties. Every party involved in the IHM process may also be held liable in case of fault or gross negligence of any of its employees.

The persons involved in the IHM process should exercise due professional care in conducting and supervising the respective activities and in preparing related reports. They should use their professional judgment when exercising their duties during the IHM process.

4.2 ACCREDITATION AND CERTIFICATION

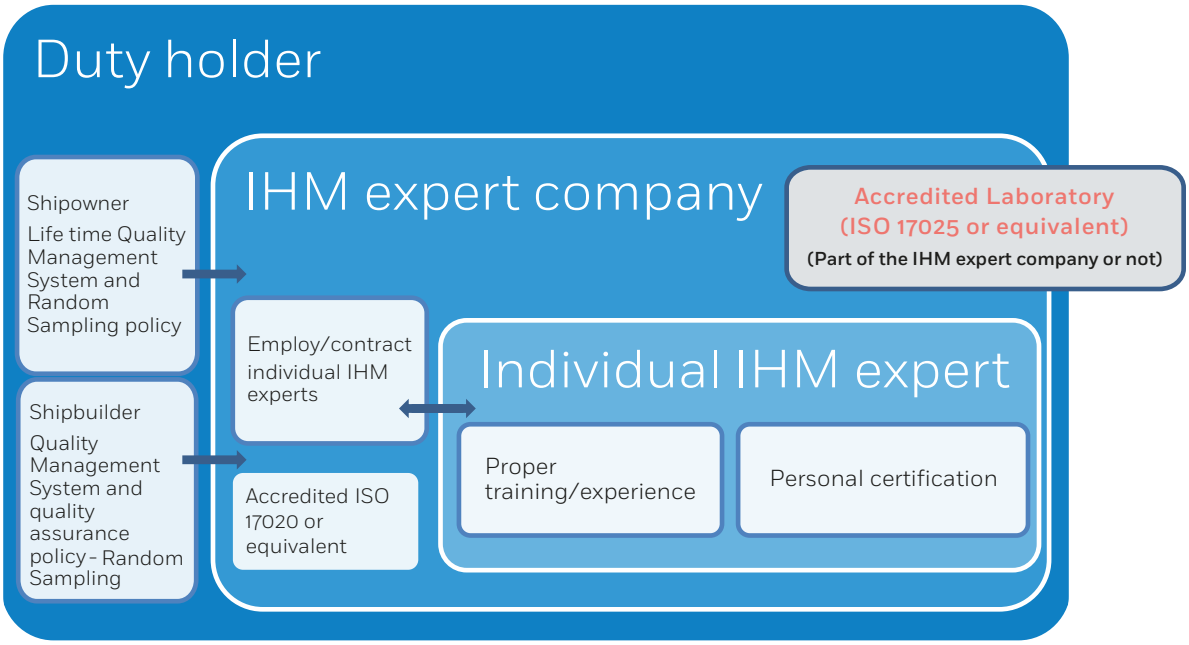
✓ **The individual IHM expert** should work within a general quality assurance framework provided by a management system in accordance with the overarching principles for the development and maintenance of the IHM. Anyone using an individual IHM expert for compiling or updating an IHM is responsible to confirm that the IHM expert is competent to carry out the work required.

✓ **The IHM expert company** should implement quality processes and procedures preferably in accordance with ISO 17020 or any equivalent standard covering all the relevant activities of the company. Seeking accreditation against a standard from EU accreditation bodies or ILAC/MRA signatory bodies is the most effective way to demonstrate independence and necessary qualifications. *Anyone using an IHM expert company for compiling or updating an IHM is responsible to confirm that the IHM expert company is duly capable to implement quality processes and procedures.*

- ✓ **The laboratory** to carry out specific tests should be accredited in accordance with ISO 17025 or an equivalent standard for the purpose of conducting specific tests for HMs included in the SRR. It should perform internal proficiency testing and evaluation of the personnel, it should implement quality control procedures and it should be capable of providing a written report that can be relied upon by all parties. Seeking accreditation against a standard from EU accreditation bodies or ILAC/MRA signatory bodies is the most effective way to demonstrate independence and necessary qualifications. *Anyone using a laboratory for the analysis of samples for HM included in the Annex II of the Regulation is responsible to confirm that the laboratory is suitably accredited.*

The **optimum** organisational framework for the IHM process is described in the following graph:

Graph 1 – Optimum organisational framework



4.3 TRAINING & QUALIFICATION

The persons involved in the IHM process should have appropriate training, qualifications, knowledge and experience to perform their respective duties.

An individual may obtain a 'personnel certification' for HM surveying from a Certification Body accredited in accordance with ISO 17024 or equivalent provided that the necessary training and experience are covered.

To become an IHM expert an individual should at least have training, on the following topics:

1. The SRR and the EU relevant legislation
2. EMSA's best practice guidance on the development and maintenance of the IHM

3. The basic principles of the HKC and the respective IMO guidelines particularly the 'guidelines for the development of the Inventory of Hazardous Materials'[20] in their up-to-date format
4. Ship structure and equipment
5. Properties of the HM mentioned in the Annex II of the SRR
6. Requirements for the IHM preparation of New and Existing Ships
7. Sampling Methodology
8. How to prepare a risk assessment before conducting HM surveys/sampling on board ships
9. How to prepare a VSCP and a RCP
10. HM survey on board a ship. Sampling on board ships, methods of sampling HM included in the Annex II of the SRR
11. Health and Safety. Precautionary measures for safe sampling and use of personal protective equipment
12. Reference standards for testing samples
13. Calculation of the HM amounts based on the analysed results
14. HM survey reports
15. Preparation of an IHM in its standard format in accordance with the EMSA guidance and the IMO guidelines.

In addition, to become an IHM expert an individual should have experience on ship structure and on handling of HM and should be able to demonstrate supervised practical field experience.

The aforementioned training of individual IHM experts is without prejudice to any requirements set out in the EU legislation[21] or in any national legislation where he/she is based, for the employers to provide appropriate training for workers who are or likely to be, exposed to Hazardous Materials.

4.4 SUPPLIER'S DECLARATION OF CONFORMITY AND MATERIAL DECLARATIONS

Suppliers should identify and declare the presence of a HM included in the Annex II of the SRR if it exceeds the threshold value specified in Annex B of this guidance. However, this provision does not apply to chemicals which do not constitute a part of the finished product. Suppliers should provide their customers with Supplier's Declarations of Conformity and Material Declarations in any case even when no HM are contained above the applicable threshold values.

SDoC and MD should be prepared and signed in accordance with the IMO guidelines and they should be drawn in the format provided in the IMO guidelines. However, due regard should be given to include in the IMO/MD form a supplement with a reference to the presence (or absence) of the two additional HM (PFOS[22] and HBCDD) included only in Annexes I and II of the SRR. An example of the Supplement to the IMO form of Material Declaration is shown in **Annex D** of this guidance.

20 Resolution MEPC.269(68).
21 i.e. Article 14 of the Directive 2009/148/EC 'on the protection of workers from the risks related to exposure to asbestos at work'.
22 Not applicable for ships flying the flag of a third country.

The supplier compiling the SDoC should establish a company policy and use a suitable quality management system for the management of the chemical substances in products which the supplier manufactures or sells.

4.5 SAMPLING AND ANALYSIS

The overall objective of any sampling activity is to obtain a sample which can be used for the targeted purpose i.e. to identify the presence or absence of HM contained in the equipment, systems, and/or areas on board a ship by suitable and generally accepted methods such as laboratory analysis.

Sampling and analysis should comply with specific national legislation where it exists and with international standards. The whole process should be in accordance with the provisions of this guidance and the IMO guidelines.

Due diligence should be exercised when undertaking any work on sampling and analysis. The sampling activity involves certain risks to personnel involved or to other persons on board. Therefore, sampling should only be undertaken by competent personnel i.e. IHM experts, with the proper use of suitable equipment. Furthermore, analysis of the samples should only be carried out by suitably accredited laboratories using qualified and trained personnel, suitable testing methods and the necessary equipment.

Sampling should be carried out in accordance with a pre-decided methodology and supported by an appropriate check plan.

Sampling methodology

Standard working procedures for sampling (sampling methodology) should be established and agreed upon before the start of the sampling campaign. The sampling methodology should include the following:

- ✓ Determine on a **'targeted'** or **'random'** sampling campaign or both. Targeted sampling should be applied where the presence of prohibited and restricted Hazardous Materials is assumed but cannot be recognized by analysis of the available documentation or visual checking. Random sampling may be applied where the presence of prohibited and restricted Hazardous Materials has been excluded by document analysis but either there are suspicions of existence of HM or there is a policy for performing random checks as a quality assurance procedure

- ✓ **Targeted sampling** should take place during the preparation of the IHM of an existing ship in accordance with the relevant procedure of the IMO guidelines and should include any equipment, system and/or area which cannot be specified regarding the presence of HM[23] by document or visual analysis except those which shall be classed as 'Potentially Containing HM' (PCHM).

  Random sampling may be used as a quality assurance process and may take place for new ships during the design and construction stage, on existing ships during the initial preparation of the IHM along with targeted sampling or on any ship after the initial preparation of the Inventory[24].

23 N.B.: Mostly HM referred to in Annex 1 of the SRR. For existing ships and 'ships going for recycling' the IHM should identify the HM included in the Annex 2 of the SRR as far as practicable.
24 Either because there are suspicions of existence of non-recorded HM on board or in applying the 'precautionary principle'.

- ✓ Identity of the sampler/IHM expert.
- ✓ Preparation of a 'visual/sampling check plan' (VSCP) or of 'random checking plan' (RCP) as appropriate.
- ✓ The estimated number of samples to be taken, the types of samples to be chosen and a description of or reference to the sampling method. As a general rule, the samples should be representative of the materials being checked and in sufficient numbers. As guidance the rule of 10% may be established meaning that roughly 10% of the components of any system identified for a sampling check[25] should be sampled. However, taking of samples and the number of samples to be taken should always be determined according to the professional judgement of the entity carrying out the HM survey and proper/pragmatic ceilings in the number of samples should be established per each product or system. Materials of the same kind may be sampled in a representative manner.
- ✓ Selection of location (checkpoints), date of sample-taking and the overall duration of the sampling campaign. It should be noted that the sampling campaign may be adjusted and other sampling points may be identified during the survey according to the actual conditions on-board and in accordance with the professional judgement of the IHM expert.
- ✓ A risk assessment for the HM survey using all the information available before the sampling (MD, SDoC, certificates, plans, diagrams, manuals, other information etc). This assessment should determine the existing risks (e.g. chemical hazards, electrical hazards, working in closed spaces, at heights or on operable machinery, noise, disturbing sampling, necessary PPE, decontamination and disposal arrangements etc). The risk assessment should then identify the necessary precautions and safety procedures to be followed during the HM survey and sampling.
- ✓ Labelling which gives detailed information or a specific sample code that cannot be removed easily. The sampling position on board may also be labelled with the same identifier. Marked-up ship plans and photographic records should be kept showing the location and extent of the sample.
- ✓ Preservation of the integrity of samples during transport and storage (before analysis).
- ✓ Close cooperation between the sampler and the accredited laboratory and establishment of quality assurance and quality control (QA/QC) procedures (e.g. appropriate sampling containers, blank samples, blind Samples etc). It is essential to consult with the accredited laboratory before sampling to ensure that the measurement methods available can meet the defined sampling needs.

25 Either according to a policy for performing random checking of materials on board ships or according to the results of a document or visual analysis specifying the presence of HM and providing for targeted sampling of any equipment, system or area which cannot be specified regarding the presence of HM except those which shall be classed as 'potentially containing HM'.

Visual/sampling check plan – Random checking plan

Before any visual/sampling check is conducted, a VSCP or a RCP should be prepared. The IMO guidelines provide an example for the development of a VSCP and a relevant check list which may be used[26]. Annex E.A of this guidance document provides an indicative example of a RCP/check list which may be used in case of random sampling. It should be noted that the sampling campaign may be adjusted further during the HM survey according to the actual conditions on-board and in accordance with the professional judgement of the IHM expert.

A. Random checking plan

If a decision is taken to conduct random sampling, the important element when preparing a RCP is that there should be no items categorized as 'unknown' in the column for the results of the document analysis. Therefore, the selection of any equipment, system and/or area for inclusion in the RCP and for sampling should be based on whether there are suspicions of non-credible documentation and/or on the experience of the IHM expert.

In this case, the selection should be done from the items identified by the document analysis as 'not contained'. A RCP may be used describing **only** the selected list of equipment, system and/or area for sampling check[27].

Compiling a RCP is not a prerequisite for conducting random sampling. However, it is recommended in order to support a more effective, rational and documented sampling campaign.

B. Visual and sampling check plan

The preparation of a VSCP for targeted sampling on an existing ship and on a ship flying the flag of a third country, when developing the IHM, is a legal requirement[28] and it should be done in accordance with the IMO guidelines. It should be based on three lists i.e. list of equipment, system and/or area for visual check, list of equipment, system and/or area for sampling check and the list of equipment, system and/or area classed as 'potentially containing hazardous material'. If random sampling is to be conducted along with targeted sampling the VSCP should reflect the items identified by the document analysis as 'not contained' (or PCHM) that may be checked by random sampling[29].

Laboratories

Laboratories should be accredited in accordance with ISO 17025 or an equivalent standard for the purpose of conducting specific tests for HMs included in the SRR. This includes applying procedures such as:

- ✓ Cleaned laboratory equipment, material, and chemicals to be used to avoid contamination.
- ✓ Quality assurance and quality control procedures (e.g. a system ensuring that effectiveness of the measurements and procedures is continuously supervised through the analysis of procedural blank samples).

26 See Appendix 5 of the Resolution MEPC.269(68). See also Annex E.B of this guidance document for a practical indicative example of a VSCP.
27 See Annex E.A for an example of a RCP/check list.
28 See paragraph 4 of Article 5 and paragraph 3 of Article 12 of the SRR.
29 See Annex E.B.

- ✓ Application of the analysis methods and, if applicable, combination of different specified methods according to HKC and this guidance document.
- ✓ Regular injection of solvent blanks and standard solutions.
- ✓ Tests to be carried out to evaluate the accuracy of the method, e.g. efficiency of the extraction methods, the recovery of the analytes, stability and loss of analytes in solution during storage, calibration using matrix matched standards or standard addition, and use of proper internal standards.
- ✓ Tests to be carried out to evaluate the precision (repeatability and reproducibility), the limits of detection (LODs) and quantification (LOQs), the robustness and the specificity of the whole method, from sampling to detection.
- ✓ Clearly defined criteria for identification and quantification need to be applied, and calibration curves to be used.
- ✓ Storage of analysed samples and data (including instrumental raw data) for a defined time of at least six months after analysis.
- ✓ Laboratory personnel should be trained on the analytical procedures and methodologies and also on quality assurance and quality control. Records of the training should be kept.
- ✓ Internal proficiency testing and evaluation of the personnel.
- ✓ The laboratory should be capable of providing a written report that can be relied upon by all parties. Essential prerequisites for obtaining high-quality results include specification of the analytical technique used, maintenance of the analytical equipment, validation of all methods used (including in-house methods) and proper training of laboratory staff.

Testing Methods

Samples may be tested by a variety of methods. Specific testing should be used in accordance with the IMO guidelines or any equivalent method which can demonstrate equivalent standards.

In **Annex C** of this guidance document some indicative specific test methods are provided on the two additional HM (PFOS and HBCDD) included only in Annexes I and II of the SRR.

Health & Safety

The sampling activity involves certain risks to personnel involved or to other persons on board. Therefore, all the work should be carried out according to the general safety procedures and those defined in the risk assessment. Entry of other people to any sampling area should be restricted or suitable warnings posted. Care should be taken to minimise disturbance to HM especially ACMs. Airborne emissions should normally be controlled by selection of appropriate tools for sampling, prewetting the material to be sampled with water and/or a suitable wetting agent.

All samples should be properly sealed, the sample area should be left clean and any sampling points should be sealed to prevent the release of HM (i.e. fibres). Various methods may be used to reseal the sampling point (e.g. tapes and fillers).

Sampling personnel should carry adequate PPE (e.g. glasses, coveralls, masks and gloves). Disposable coveralls, overshoes and gloves should be worn especially when there is a likelihood of asbestos contaminating the surveyor's clothing. The risk assessment should take into account the sampling conditions and determine if additional safety precautions and decontamination procedures will be needed.

5. DEVELOPMENT AND MAINTENANCE PROCESS OF THE IHM

The development procedure of the IHM Part I differs depending on whether the ship is a new or an existing one. The development procedure of the IHM Part II and Part III relates only to ships[30] flying the flag of a Member State when going for recycling.

5.1 DEVELOPMENT PROCESS OF THE IHM PART I FOR NEW SHIPS

Part I of the Inventory for new ships should be developed at the design and construction stage. Reference should be made to the relevant IMO guidelines which provide examples for the development process for Part I of the IHM for new ships. The process should include three steps:

A. Collection of HM information

The shipbuilder is responsible for complying with the relevant international requirements on installing HM on board new-build ships. In this respect, the conformity of Part I of the Inventory at the design and construction stage should be ascertained by reference to the Supplier's Declaration of Conformity and the related Material Declarations collected from suppliers[31]. Therefore, the information provided by the suppliers should be adequate and to the satisfaction of the shipbuilder. MD and SDoC from suppliers should be requested and collected by the shipbuilder as it is described in the graph 2 diagram.

However, in practice, there were cases where random sampling checking proved that MDs were not accurate.

Therefore, the shipbuilder should establish a quality assurance policy for performing random checking of materials provided by the suppliers. This policy should take into account the type of the material, the location and the intended use on board the ship, the required life-time maintenance and the origin of the material. Additional information should also be taken into account e.g. historical data on products of a specific brand, information about HM on board sister ships already built, etc.

The checking of the materials may include visual checking and/or random samples which will be tested by indicative or field testing and/or random samples to be tested by specific testing. Random sampling may be carried out in accordance with a pre-decided sampling methodology as described in sampling methodology in 4.5 of this document.

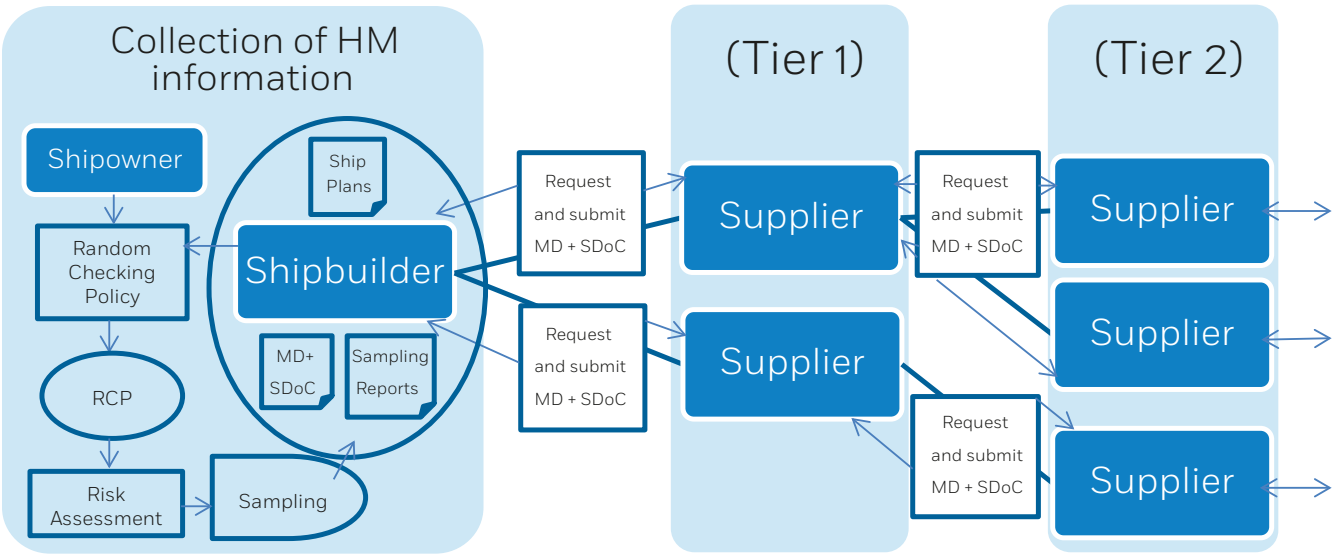
30 See Appendix 3 of the Resolution MEPC.269(68).
31 As described in chapter 4.4 of this guidance document

The entity carrying out the HM survey and sampling should be an IHM expert as defined in this guidance document working under the conditions described in this guidance document.

The shipowner may also establish a policy for performing random checking of materials for new ships[32]. In this context, the same process as for carrying out random checking by the shipbuilder may be applied.

The collection of HM information during the development process of the IHM Part I for new ships may involve the entire shipbuilding supply chain as in the following graph.

Graph 2 – Collection of HM information



B. Utilization of HM information

After the collection of all the HM information by the shipbuilder, there should be an assessment for identifying all products/systems which contain HM above the applicable threshold value[33]. Utilization of HM information should determine the location and calculate the quantities of the HM.

C. Preparation of the IHM

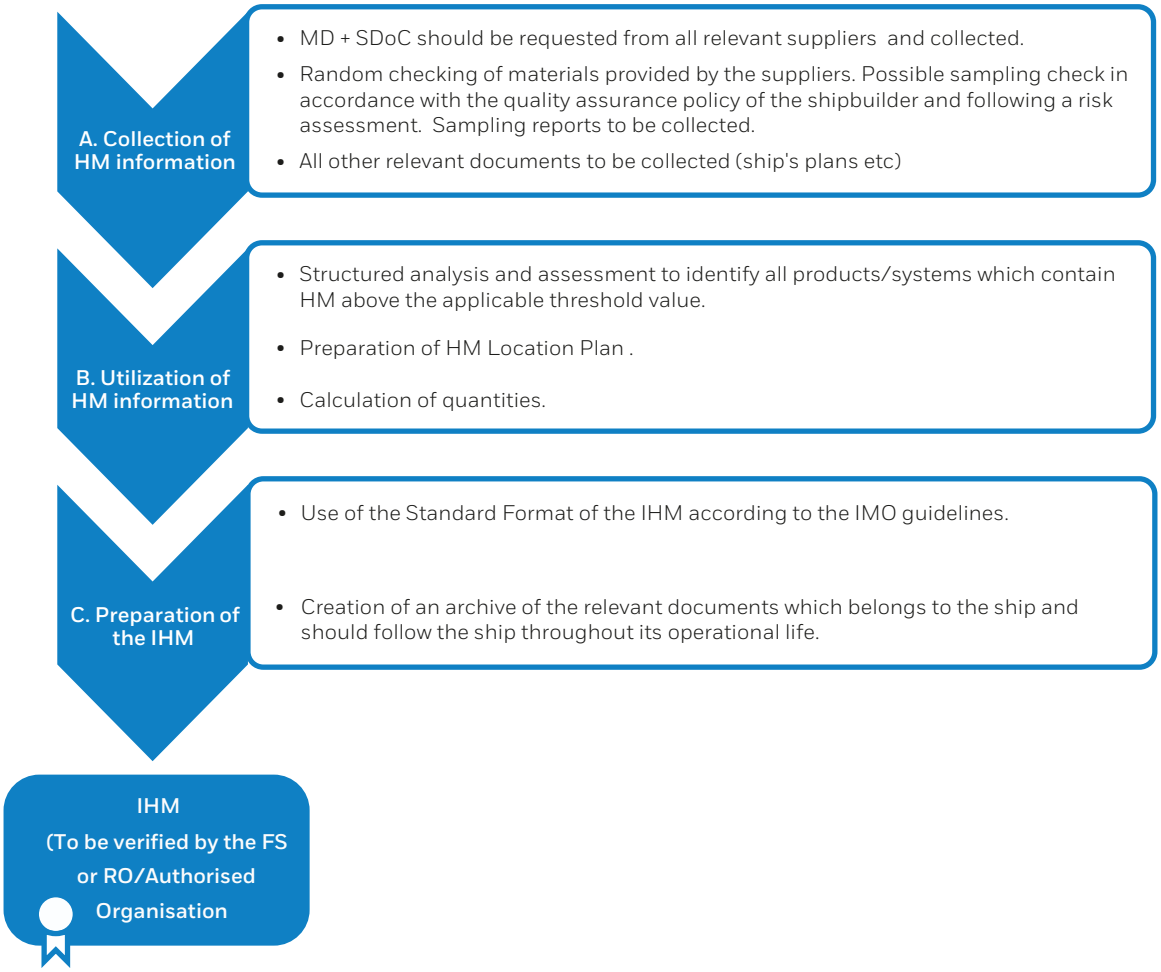
Finally, the IHM should be prepared by filling out the standard format set out in appendix 2 of the IMO guidelines[34].

The collected documents should be listed in an archive[35] which should follow the ship throughout its operational life.

The stages of the development process of the IHM Part I for new ships are described in the following graph.

32 Before the delivery.
33 See for details chapter 3.2 of this guidance.
34 See Chapter 3 of this guidance for the two additional HM (PFOS and HBCDD) and the reference to the SRR.
35 It may be in electronic format.

Graph 3 – Development process of the IHM Part I for new ships



5.2 DEVELOPMENT PROCESS OF THE IHM PART I FOR EXISTING SHIPS

Part I of the Inventory for existing ships[36] should be developed by the shipowner. Reference should be made to the relevant IMO guidelines which provide examples for the development process for Part I of the IHM for existing ships[37]. The process should include five steps:

A. Collection of necessary information

It should be conducted in accordance with the IMO guidelines. The shipowner should make every possible effort to obtain all reasonably available documentation regarding the ship.

B. Assessment of collected information

The information collected should be assessed to cover all HM referred to in Annex I of the SRR[38]. HM included in the Annex II of the SRR should be assessed as far as practicable.

36 It covers also 'ships going for recycling' according to the second subparagraph of paragraph 2 of Article 5 of the SRR and ships flying the flag of a third country.
37 See Appendices 4 and 5 of the Resolution MEPC.269(68). Due consideration should also be given to the relevant provisions of this guidance document.
38 N.B.: PFOS is not applicable for ships flying the flag of a third country.

C. Preparation of visual/sampling check plan

A 'visual/sampling check plan' (VSCP) should be prepared in accordance with the IMO guidelines and the provisions of this guidance. Following the preparation of the VSCP a risk assessment should take place to determine the existing risks and to identify the necessary precautions and safety procedures to be followed during the HM survey and sampling[39].

D. On board visual/sampling check

Targeted sampling should be carried out in accordance with the IMO guidelines and with reference to a pre-decided sampling methodology as described in chapter 4.5.1 of this document.

Random sampling may also be carried out with reference to a pre-decided sampling methodology as described in sampling methodology in 4.5 of this document.

The entity carrying out the HM survey and sampling should be an IHM expert as defined in this guidance document working under the conditions described in this guidance document.

The shipowner may also establish a policy for performing random sampling of materials on board existing ships after the initial preparation of the Inventory (e.g. when purchasing a ship or after a repair or conversion of the ship). In this context, the same process as for carrying out random sampling on a new ship may be applied as far as practicable[40].

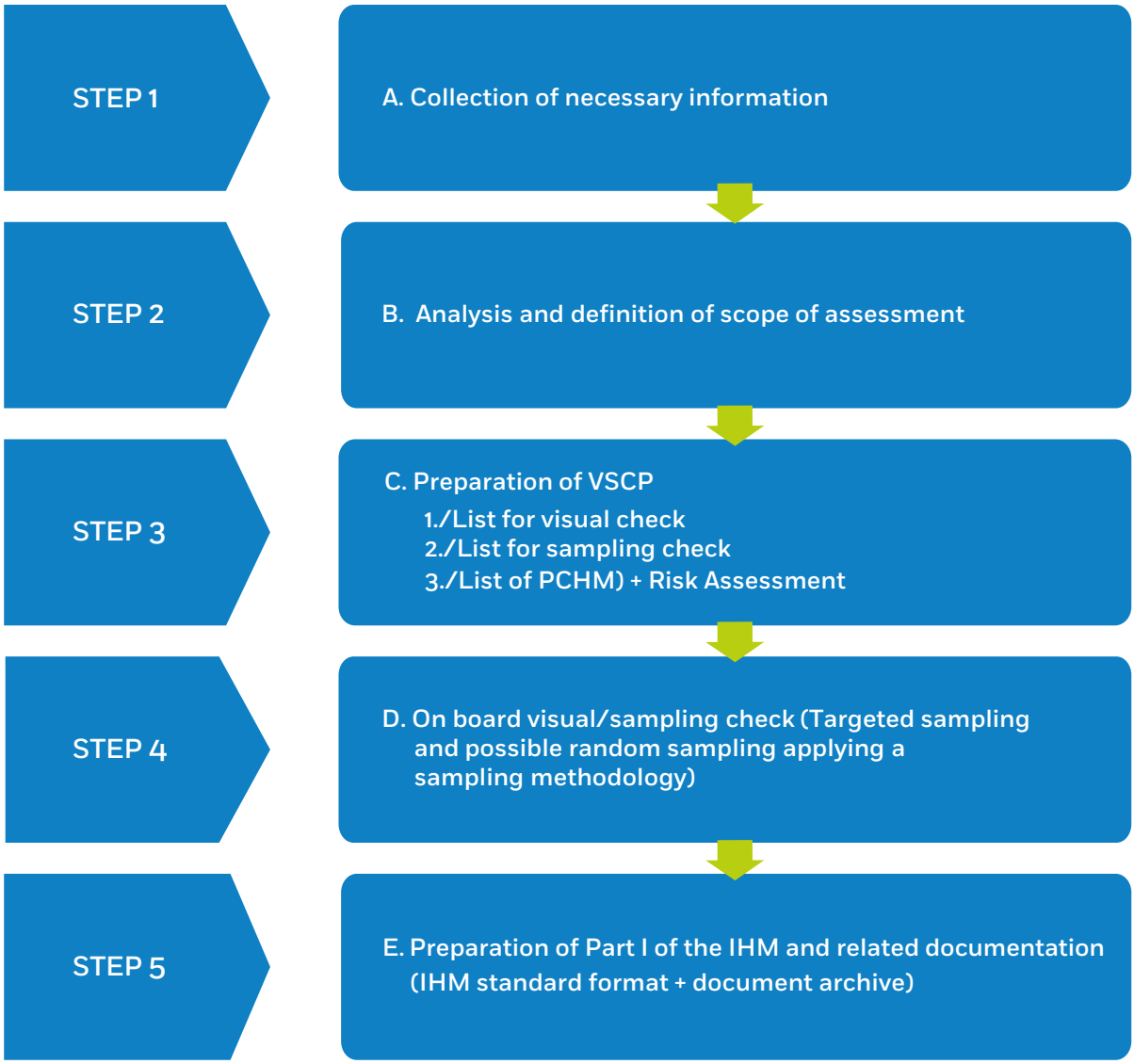
E. Preparation of Part I of the Inventory and related documentation

Finally, the IHM should be prepared by filling out the standard format set out in Appendix 2 of the IMO guidelines[41]. A diagram showing the location of the identified HMs should also be prepared. The collected documents should be listed in an archive which should follow the ship throughout its operational life[42].

The flow diagram for developing Part I of the IHM for existing ships is described in Appendix 4 of the IMO guidelines and should be consulted during the hereunder process for developing the IHM according to the EU SRR.

39 See chapter sampling methodology in 4.5 above.
40 See chapter 5.1A above.
41 See Chapter 3 of this guidance for the two additional HM (PFOS and HBCDD) and the reference to the SRR.
42 It may be in electronic format.

Graph 4 – Development process of the IHM Part I for existing ships



5.3 DEVELOPMENT PROCESS OF THE IHM PART II

Once the decision to recycle a ship flying the flag of a Member State has been taken, Part II of the Inventory should be developed before the final survey, taking into account that a ship destined to be recycled shall conduct operations in the period prior to entering the Ship Recycling Facility in such a way as to minimise the amount of cargo residues, remaining fuel oil and ship generated waste remaining on board[43]. Due regard should be given to the provisions of the EU PRF Directive[44].

The IMO guidelines[45] provide a catalogue of potentially HM in table C of appendix 1 listing the materials either in Part II or in Part III of the Inventory.

The development of IHM Part II should be done in accordance with the IMO guidelines.

43 See paragraph 2(b) of Article 6 of the SRR.
44 Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues. OJ L 332, 28.12.2000, p. 81.
45 Resolution MEPC.269(68).

5.4 DEVELOPMENT PROCESS OF THE IHM PART III

Once the decision to recycle a ship flying the flag of a Member State has been taken, Part III of the IHM should be developed before the final survey, taking into account the fact that a ship destined to be recycled shall minimise the wastes remaining on board.

The IMO guidelines provide a catalogue of potentially HM in table C of appendix 1 listing the materials either in Part II or in Part III of the Inventory.

The development of IHM Part III should be done in accordance with the IMO guidelines.

5.5 LIFE-CYCLE MANAGEMENT

According to paragraph 6 of Article 5 of the SRR, Part I of the IHM of ships flying the flag of a Member State shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing any HM referred to in Annex II of the Regulation and relevant changes in the structure and equipment of the ship.

According to paragraph 4 of Article 12 of the SRR, the IHM of ships flying the flag of a third country shall be properly maintained and updated throughout the operational life of the ship, reflecting new installations containing any hazardous materials referred to in Annex II of the Regulation and relevant changes in the structure and equipment of the ship, *taking into account the exemptions and transitional arrangements applicable to those materials under international law.*

Therefore, shipowners should establish the necessary procedures on board the ship and within their company to manage their long-term environmental responsibilities.

Procedure for the maintenance of Part I of the IHM

The shipowner is responsible for the maintenance of Part I of the IHM during the lifetime of the ship. Part I of the IHM should belong to the ship and the continuity and conformity of the information it contains should be confirmed, especially if the flag, owner or operator of the ship changes.

In accordance with the IMO guidelines[46], shipowners should implement a series of measures to ensure the conformity of Part I of the Inventory. In this context, designating a person as responsible for maintaining and updating the Inventory is a crucial responsibility for the shipowner.

The main responsibility of the designated person is the maintenance and updating of the IHM in accordance with the IMO guidelines and this guidance. The duties of the designated person should be incorporated in the shipowner's quality management system and should be clearly described in writing taking into account that keeping an updated IHM may be a simplified process but it might also become quite demanding e.g. if a major conversion or extensive repair works are undertaken[47].

It should be noted that the IHM should be updated according to the requirements for new ships as stipulated in the relevant provisions of the IMO guidelines and in chapter 5.1 of this guidance. The respective changes to the IHM should be made accordingly and

46 See Resolution MEPC.269(68), section 5.2.
47 Particularly in such cases the designated person (regardless if he/she is a crew member, employee of the shipping company or external contractor) may well be an individual IHM expert as defined in this guidance document.

all the relevant documentation (e.g. MD and SDoC in case of machinery or equipment is added or sampling reports in case of random sampling) should be collected and maintained in the ship's archive[48].

Lifetime quality management

Ships are high value assets of high mobility being capable of being transferred from one owner to another or from one registry to another very easily and quickly. It is standard international practice and a provision of IMO international instruments that the relevant certificates cease to be valid upon transfer of the ship to the flag of another State.

However, the IHM must be properly maintained and updated throughout the operational life of the ship and it will supplement any 'Inventory Certificate' or 'Statement of Compliance' issued by any Member State or third country (or by a RO or an authorised organisation respectively).

Therefore, it is particularly important that the continuity of the IHM is maintained if the flag, owner or operator of the ship changes. It is equally important that the quality of the IHM is secured and maintained throughout the operational life of the ship in order to remain a credible document when the decision to recycle a ship is taken.

In this respect, a lifetime quality management system should be established by the shipowners and should include specific provisions to safeguard the quality and continuity of the IHM when building, buying or selling a ship or changing ship's registry or ship's IHM designated person.

Moreover, the quality management system should identify the procedures to safeguard the proper updating of the IHM during scheduled or unscheduled works involving changes, replacements or repairs to the structure, equipment, systems, fittings, arrangements and material, which has an impact on the Inventory.

Proper maintenance of an archive of all the associated documentation should also be included in the lifetime quality management system of the shipowner and it should ensure that new installations of equipment, repairs and refittings are accompanied by a MD and the SDoC, as provided by the suppliers of parts and equipment delivered.

As part of the lifetime quality management system, there may be a random sampling policy for new or existing ships and there should be assurances that the IHM development and maintenance shall be undertaken by competent entities (i.e. IHM experts) in accordance with recommended guidance (i.e. the EMSA's best practice guidance document and the relevant IMO guidelines).

A software tool may be used to support the IHM development and maintenance process and the management of all the relevant documents, information and data.

48 See chapter 5.1C and 5.2E above.

6. SURVEY AND CERTIFICATION

All ships flying the flag of a Member State shall be subject to a survey regime in accordance with Article 8 of the Regulation[49]. They shall carry on board a ship-specific 'Inventory Certificate' issued by the administration or a RO[50] authorised by it and supplemented by Part I of the IHM. Surveys shall be carried out by officers of the administration, or of the RO, taking into account the relevant IMO guidelines[51].

These ships shall be subject to the following surveys:

(a) an initial survey;

(b) a renewal survey;

(c) an additional survey;

(d) a final survey.

Initial and renewal surveys must verify that the IHM Part I complies with the requirements of the Regulation. Additional surveys must ensure that any change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material, which has an impact on the IHM, has been made in a manner that ensures that the ship continues to comply with the requirements of the Regulation, and that Part I of the IHM is amended as necessary. Final surveys must verify that the IHM (Parts I, II and III) and the ship recycling plan comply with the requirements of the Regulation and that the ship recycling facility where the ship is to be recycled is included in the European List.

The administrations or the ROs should monitor the whole IHM process as close as possible and should ensure the proper implementation of the overarching principles of independence, quality and accountability.

All ships flying the flag of a third country, when calling at a port or anchorage of a Member State, shall carry on board a ship-specific 'statement of compliance' issued by the relevant authorities of the third country whose flag the ship is flying or an organisation authorised by them and supplemented by Part I of the IHM[52].

The SoC shall be issued after verification of the IHM by the relevant authorities of the third country whose flag the ship is flying or an organisation authorised by them, in accordance with the national requirements.

For all ships flying either a flag of a Member State or a flag of a third country, particular attention should be given when verifying the IHM during an initial inspection or before the issuance of the SoC respectively, to the address the requirements of the SRR.

49 See Annex A for the timeline of the application of the Regulation for EU ships.
50 RO means an organisation recognised in accordance with Regulation (EC) No 391/2009 of the European Parliament and of the Council.
51 Resolution MEPC.222(64) "2012 Guidelines for the survey and certification of ships under the HKC"
52 See Annex A for the timeline of the application of the Regulation for non-EU ships.

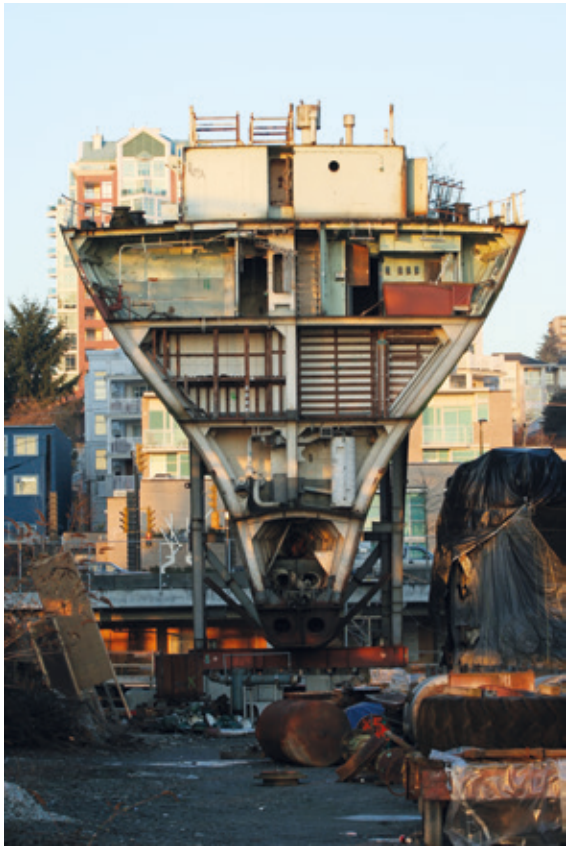
The following table summarizes the minimum[53] initial control and respective inclusion in the IHM of the two additional HM on board ships either flying the flag of a Member State or a flag of a third country:

Table A – EU SRR additional requirements for IHM initial verification

HM	EU SRR			IMO HKC
	Control measure			Control measures
	EU ships		Non-EU ships	
	New ships	Existing ships		
PFOS	✓	✓	-	-
HBCDD	✓	-	-**	-

* After the initial preparation of the IHM, it shall be properly maintained and updated reflecting new installations containing HM referred to in Annex II of the SRR (meaning that thereafter all the HM included in Annex I and **Annex II** of the SRR should be included in the IHM).

** After the initial preparation of the IHM, it shall be properly maintained and updated reflecting new installations containing HM referred to in **Annex II** of the SRR taking into account the exemptions and transitional arrangements applicable to those materials under international law.



53 N.B.: For existing and non-EU ships HM included only in Annex II of the SRR should be identified in the IHM as far as practicable.

7. ENFORCEMENT

The Regulation provides for the control of ships flying the flag of a Member State and ships flying the flag of a third country when calling at a port or anchorage of a Member State.

Reference can be made to **Annex A** for the timeline of the application of the Regulation as regards the application of port State control provisions[54]. It should be noted that for existing ships, an IHM should be on board after 31/12/2020[55]. For ships flying the flag of a third country, an IHM should also be on board after 31/12/2020[56]. Therefore, for existing ships and for ships flying the flag of a third country, an IC or a SoC respectively may not be controlled before 31/12/2020.

7.1 PORT STATE CONTROL IN ACCORDANCE WITH DIRECTIVE 2009/16/EC

The Annex IV of Directive 2009/16/EC has been amended to include in the list of certificates and documents to be checked during a port State control inspection a 'certificate on the inventory of hazardous materials' or a 'statement of compliance' as applicable pursuant to the SRR. Therefore, any *port State control inspection in accordance with the Directive 2009/16/EC* either on board a ship flying the flag of a Member State or on a ship flying the flag of a third country shall include a verification of the IC or SoC respectively.

Any such inspection **should be limited to checking that either an IC[57] or a SoC is kept on board,** which, *if valid*, shall be considered sufficient for the inspection to be approved.

In applying port State control provisions, if no certificate[58] or if an invalid certificate is found on board, or any other clear ground revealed, then a PSCO should either undertake a detailed inspection in accordance with the SRR[59] or he/she should ask the relevant authority of the Member State to carry out a detailed inspection in accordance with the SRR, as appropriate.

An *'invalid certificate'* is a document issued not in accordance with the provisions of the SRR (e.g. issued from a non-competent organisation, no IHM provided, IHM has not been verified as appropriate, IHM does not include all HM as referred to in the SRR etc).

7.2 PORT STATE CONTROL IN ACCORDANCE WITH THE SRR

Port State control in accordance with the Directive 2009/16/EC should not be confused with the application of port *State control, in accordance with the provisions of the SRR*[60], i.e. the capability of a Member State to ask for respective documentation and, if appropriate, **perform detailed inspections** on board a foreign flagged ship to verify compliance with the SRR as applicable.

54 Either in accordance with the Directive 2009/16/EC or in accordance with the SRR (Regulation (EU) 1257/2013). See chapter 7.1 and 7.2 respectively.
55 See Article 5.2 and Article 32.2(b) of the SRR.
56 See Article 12.1 and Article 32.2(b) of the SRR.
57 Or a 'ready for recycling certificate', as applicable, for EU ships.
58 i.e. IC, SoC or RfRC as appropriate. RfRC is included in accordance with Article 11.1 of the SRR.
59 Provided he/she is authorised to do so. This procedure should not fall within the scope of the Port State Control Directive.
60 Although may be exercised by the same personnel.

In this regard, a Member State as a port State may apply control provisions for foreign flagged ships when calling at a port or anchorage of that Member State. The control provisions should either be limited to checking the relevant documents on board or may be expanded to performing detailed inspections foreseen by the SRR. The detailed inspections are triggered either by 'missing certificate' or 'invalid certificate' or by 'clear grounds' taking into account the relevant IMO guidelines[61].

An *invalid certificate* is a document issued not in accordance with the provisions of the SRR (e.g. issued from a non-competent organisation, no IHM provided, IHM has not been verified as appropriate, IHM does not include all HM as referred to in the SRR etc).

The SRR and the IMO guidelines provide a non-exhaustive list of *'clear grounds'* to trigger a detailed inspection.

When checking the relevant document on board, particular attention should be given to the proper development and maintenance of the IHM.

Annex B of this guidance provides the list of the HM to be identified in an IHM developed in accordance with the SRR. If the threshold value used for reporting a specific HM exceeds the respective applicable threshold value, that does not necessarily mean that this HM is contained in the ship's systems and equipment (where in the respective column there is a 'not contained' entry). However, it may trigger a detailed inspection to verify that the IHM fully complies with the EU legislative requirements. In this case, the control officer may ask for additional assurances of the proper completion of the IHM (e.g. MD and SDoC or sampling reports specifying the presence or not of the HM).

If a ship cannot provide evidence of compliance to the satisfaction of the control officer, control measures may be taken in accordance with each Member State's national control and inspection system (i.e. consult the flag State, ask for proper correction of the IHM e.g. change the relevant entries to specify either 'contained' or 'Potentially Containing Hazardous Materials' etc).

A ship may be *warned, detained, dismissed or excluded* from the ports or offshore terminals under the jurisdiction of a Member State in the event that it fails to submit to the relevant authorities of that Member State a copy of the relevant certificate[62] as appropriate and on request of those authorities.

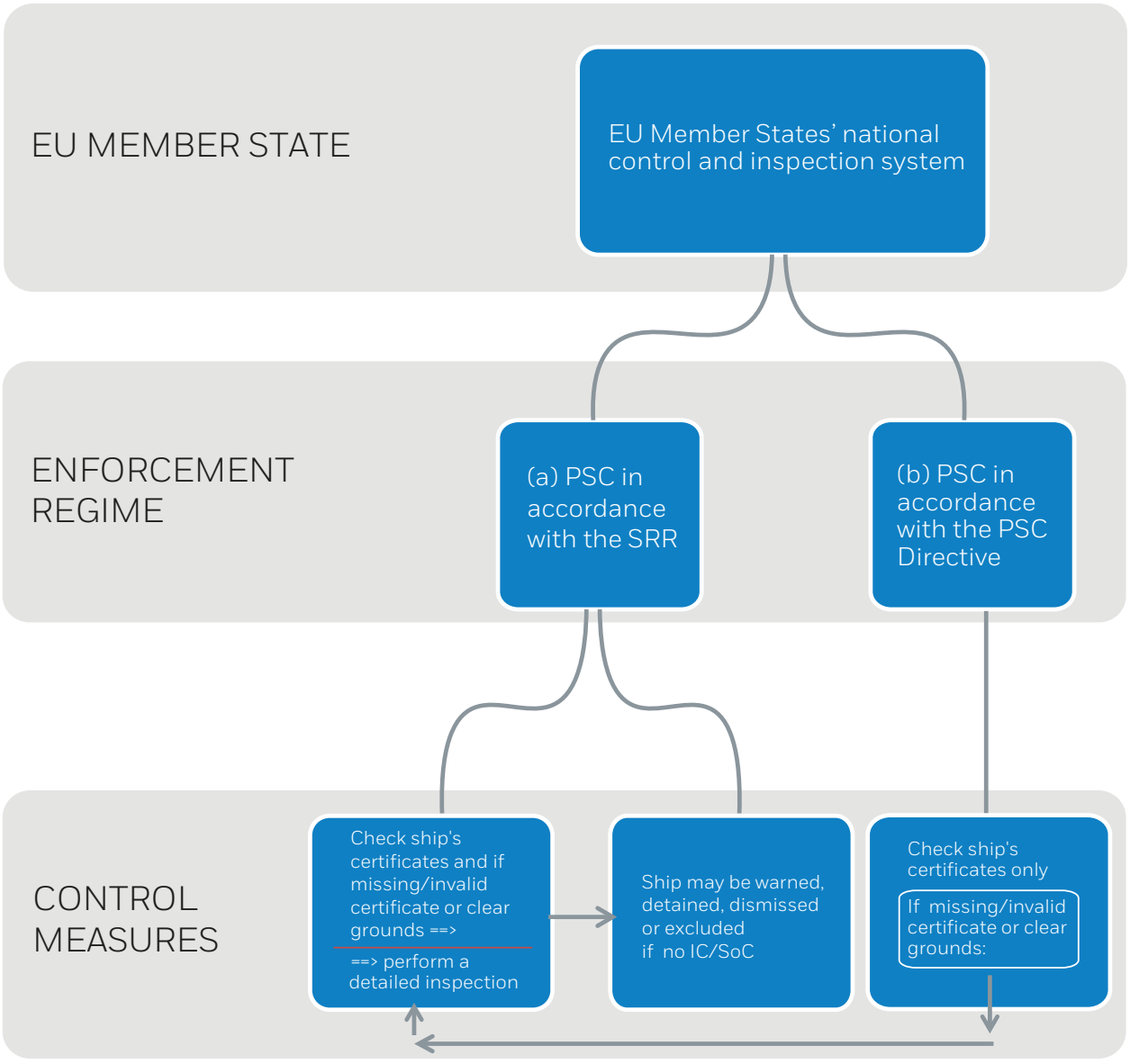
A Member State taking such action shall immediately inform the administration of another Member State or the relevant authorities of the third country concerned. Failure to update the IHM should not constitute a detainable deficiency, but any inconsistencies in the IHM should be reported to the administration[63] or the relevant authority concerned.

Access to a specific port or anchorage may be permitted by the relevant authority of a Member State in the event of *force majeure or overriding safety considerations,* or to *reduce or minimise the risk of pollution* or *to have deficiencies rectified,* provided that adequate measures to the satisfaction of the relevant authority of that Member State have been implemented by the owner, the operator or the master of the ship to ensure safe entry.

61 Resolution MEPC.223(64) "2012 Guidelines for the inspection of ships under the HKC".
62 i.e. IC, RfRC or SoC.
63 In this case, the inconsistencies should be rectified at the time of the next survey.

The following flow diagram describes the enforcement regime established by the SRR as regards the development and maintenance of the IHM on board ships:

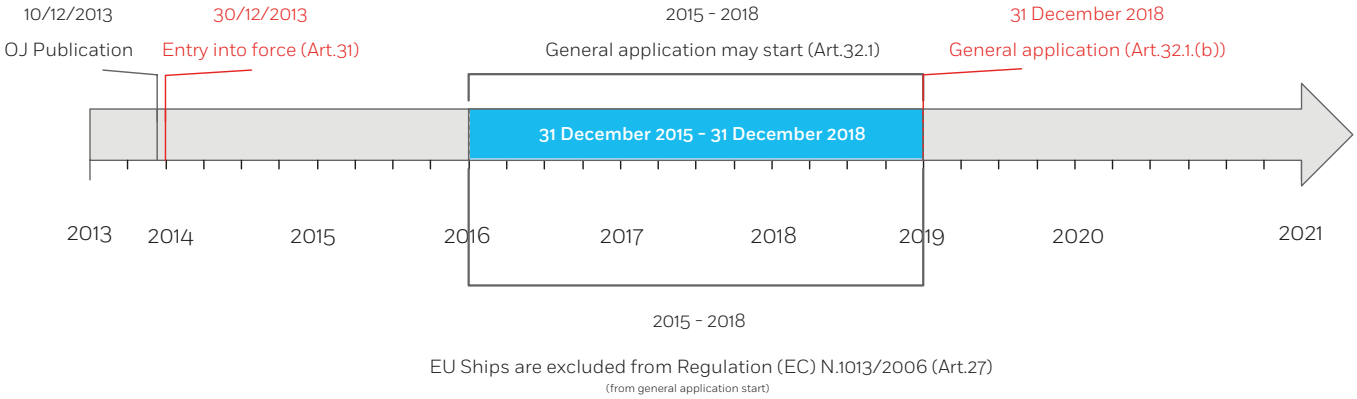
Graph 5 – Enforcement mechanism



ANNEX A

TIMELINE OF THE APPLICATION OF THE REGULATION (EU) N.1257/2013

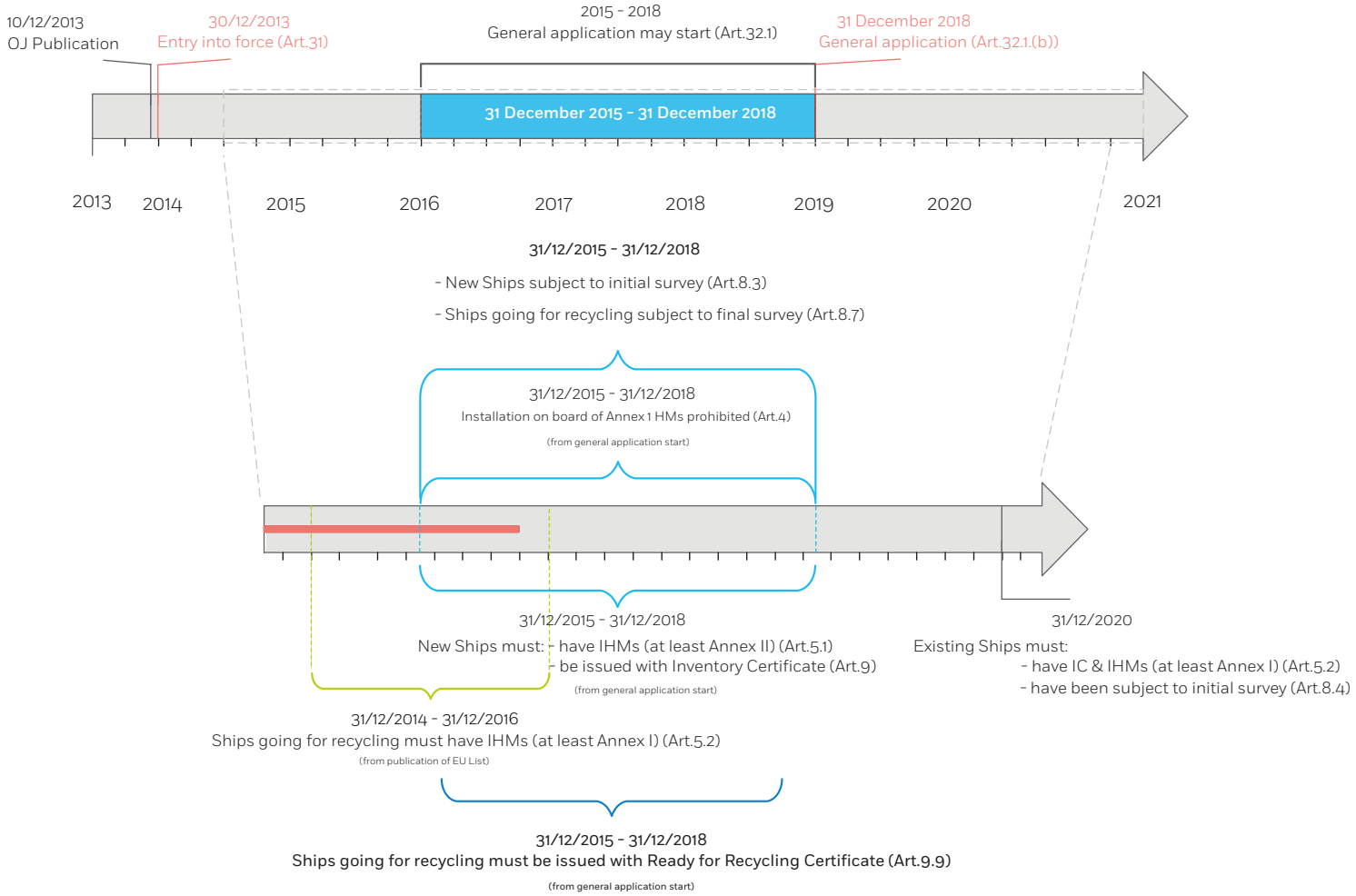
APPLICATION TIMELINE



General application starts the earlier date of (not before 31/12/2015) (Art.32.1):

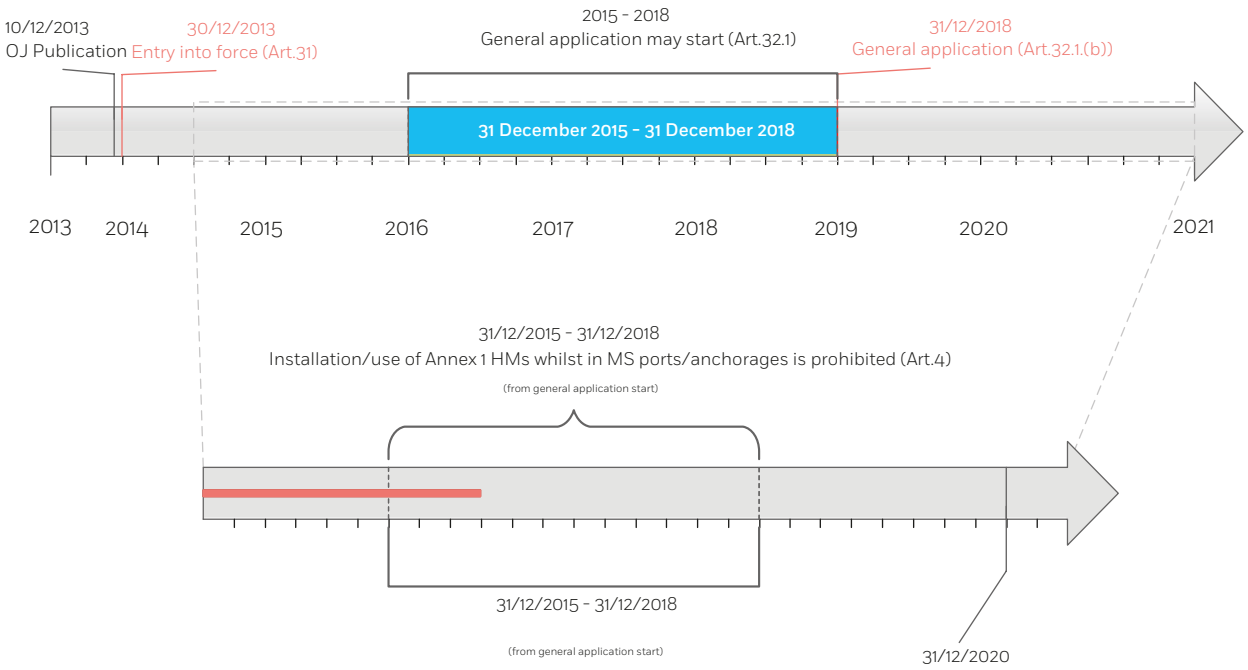
- 6 months after the combined output of the EU List SRFs is 2,5 million LDTs, or
- 31/12/2018

APPLICATION TIMELINE FOR EU FLAGGED SHIPS



APPLICATION TIMELINE FOR NON-EU FLAGGED SHIPS

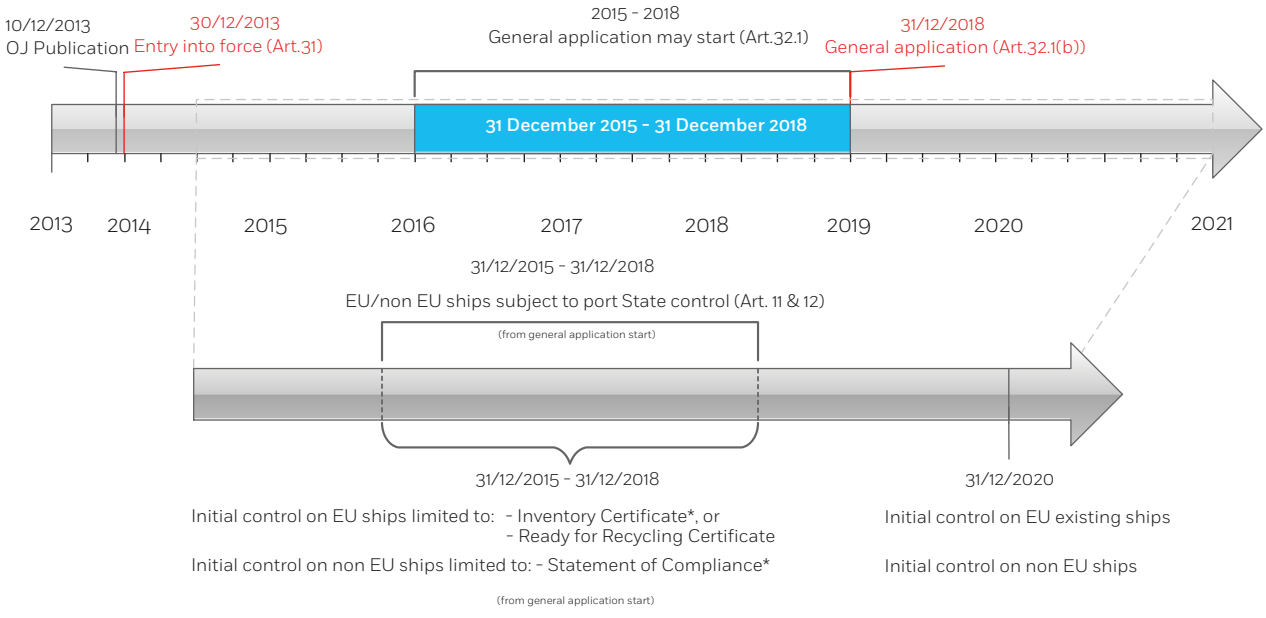
Regulation (EU) N.1257/2013 – Application Timeline for non-EU flagged Ships



- Ships calling EU ports/anchorages must have IHMs (Annex I) (Art.12.1) and SoC (Art. 12.6)
- Ships applying for MS registration must have IHMs within 6 months registration/next survey if earlier (Art.12.8)

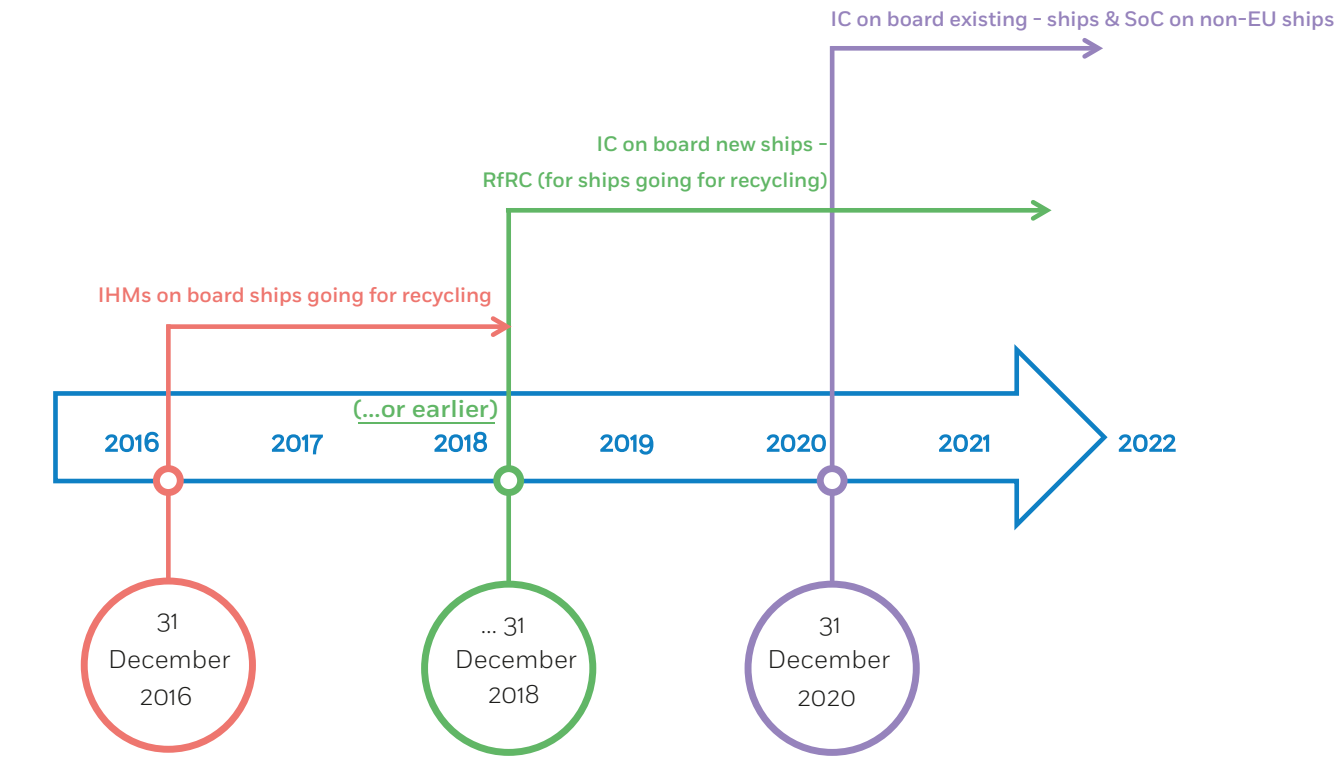
APPLICATION TIMELINE FOR PORT STATE CONTROL

Regulation (EU) N.1257/2013 – Application Timeline for port State control



* N.B.: For existing EU ships an IHM should be issued after 31/12/2020 (Art.5.2 & Art.32.2(b)). For non-EU ships an IHM should be issued after 31/12/2020 (Art.12.1 & Art.32.2(b)). Therefore, for all these ships an IC or a SoC resoectively may not be controlled before 31/12/2020

MILESTONES FOR THE APPLICATION OF THE SRR IN RELATION TO THE IHM



Publication of the EU List

General application date

Delayed application date for existing and non-EU ships


HAZMAT

MATERIALS TO BE LISTED IN THE IHM PART I

The following threshold values of reporting HM in the IHM should apply taking into account the IMO guidelines and the referenced EU legislation:

HAZARDOUS MATERIAL	THRESHOLD VALUE	REFERENCED EU LEGISLATION*
Asbestos[64]	0.1%	SRR/Annex I, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals" (REACH), Council Directive 76/769/EEC "on the approximation of the laws, regulations and administrative provisions of the MS relating to restrictions on the marketing and use of certain dangerous substances and preparations[65]", Directive 2009/148/EC "on the protection of workers from the risks related to exposure to asbestos at work[66]".
Ozone Depleting Substances[67] (ODS)	No threshold value	SRR/Annex I. Regulation No 1005/2009 on substances that deplete the ozone layer[68].
Polychlorinated Biphenyls (PCB)	50 mg/kg	SRR/Annex I, Regulation (EC) 850/2004 "on persistent organic pollutants[69]".
Perfluorooctane sulfonic acid[70] (PFOS) and its derivatives (CAS No: 1763-23-1) $C_8F_{17}SO_2X$ (X = OH, Metal salt (O-M +), halide, amide, and other derivatives including polymers) Examples of PFOS derivatives: Potassium perfluorooctane sulfonate (CAS no. 2795-39-3); Lithium perfluorooctane sulfonate (CAS no. 29457-72-5); Ammonium perfluorooctanesulfonate (CAS no. 29081-56-9); diethanolammonium perfluorooctane sulfonate (CAS no. 70225-14-8); tetraethylammonium perfluorooctane sulfonate (CAS no. 56773-42-3); didecyldimethylammonium perfluorooctane sulfonate (CAS no. 251099-16-8).	Concentrations of PFOS **above** 10 mg/kg (0.001% by weight) when it occurs in substances or in preparations or Concentrations of PFOS in semi-finished products or articles, or parts thereof **equal to or above** than 0.1% by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or For textiles or other coated materials, if the amount of PFOS is **equal to or above** than 1 µg/m² of the coated material.	SRR/Annex I, Regulation (EC) 850/2004 "on persistent organic pollutants", Directive 2006/122/EC "relating to restrictions on the marketing and use of certain dangerous substances and preparations (perfluorooctane sulfonates)[71]".
Anti-fouling compounds and systems	2500 mg total tin/kg	SRR/Annex I, Regulation (EC) 782/2003 "on the prohibition of Organotin Compounds on ships[72]", Council Directive 76/769/EEC "on the approximation of the laws, regulations and administrative provisions of the MS relating to restrictions on the marketing and use of certain dangerous substances and preparations[73]".
Cadmium and Cadmium Compounds	100 mg/kg	SRR/Annex II, RoHS Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment[74]", Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)".
Hexavalent Chromium and Hexavalent Chromium Compounds	1000 mg/kg	SRR/Annex II, RoHS Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)".

HAZARDOUS MATERIAL	THRESHOLD VALUE	REFERENCED EU LEGISLATION*
Lead and Lead Compounds	1000 mg/kg	SRR/Annex II, RoHS Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)".
Mercury and Mercury Compounds	1000 mg/kg	SRR/Annex II, RoHS Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)".
Polybrominated Biphenyl (PBBs)	50 mg/kg	SRR/Annex II, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)",
Polybrominated Diphenyl Ethers (PBDEs)	1000 mg/kg	SRR/Annex II, RoHS Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment".
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	50 mg/kg	SRR/Annex II, Regulation (EC) 850/2004 "on persistent organic pollutants".
Radioactive Substances	No threshold value	SRR/Annex II, Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation[75].
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	1%	SRR/Annex II, Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)", Regulation 519/2012, Regulation (EC) 850/2004 "on persistent organic pollutants".
Brominated Flame Retardant (HBCDD) EC No: 221-695-9, 247-148-4, CAS No: 3194-55-6 25637-99-4, alpha-hexabromocyclododecane CAS No: 134237-50-6, beta-hexabromocyclododecane CAS No: 134237-51-7, gamma-hexabromocyclododecane CAS No: 134237-52-8.	100 mg/kg (0.01%)**	SRR/Annex II, Regulation (EC) 850/2004 "on persistent organic pollutants"[76], Regulation (EC) 1907/2006 "Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)", Directive 2011/65/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment".

* N.B.: The referenced legislation is an indicative list of EU legal instruments not necessarily applicable on ships
** See below Annex C.b.3

64 N.B.: The IMO guidelines (Resolution MEPC.269(68)) provide the following in a footnote : "In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the UN recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN's Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as Category 1A (including asbestos mixtures) under the GHS are required to be labelled as carcinogenic if the ratio is more than 0.1%. However, if 1% is applied, this threshold value should be recorded in the Inventory and, if available, the Material Declaration and can be applied not later than five years after the entry into force of the Convention. The threshold value of 0.1% need not be retroactively applied to those Inventories and Material Declarations"
65 OJ L 262, 27-9-1976, p. 201
66 OJ L 330, 16-12-2009, p.28.
67 According to the HKC new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020. However, this provision has not been incorporated in the SRR.
68 OJ L 286, 31-10-2009, p.1.
69 OJ L 158, 30-4-2004, p. 7.
70 **Not applicable for ships flying the flag of a third country.**
71 OJ L 372, 27-12-2006, p.32.
72 OJ L 115, 9-5-2003, p.1.
73 OJ L 262, 27-9-1976, p. 201.
74 OJ L 174, 1-7-2011, p.88.
75 OJ L 159, 29-6-1996, p.1.
76 OJ L 55, 02-03-2016, p.7.

ANNEX C

PFOS AND HBCDD

A. PERFLUOROOCTANE SULFONIC ACID (PFOS)

PFOS has been used in a variety of industrial applications and consumer products since the 1950s, mainly due to its capability to create special surface properties. Applications range from textile and paper treatment and a variety of other areas within the coating industries, to chromium plating, hydraulic fluids (for aviation) and firefighting foam.

C.a.1 PFOS properties

PFOS can be formed by degradation from a large group of related substances, referred to as PFOS related substances, and is a member of a larger family of perflouroalkyl sulfonate (PFAS). In May 2009 PFOS was added to the Annex B of the Stockholm Convention and classified as a Persistent Organic Pollutant (POP).

PFOS is chronically toxic, injurious to reproduction, carcinogenic, toxic to aquatic organisms and widely distributed in the global environment. In the marine industry, it can be found in fire-fighting foams on vessels carrying inflammable fluids and those with helicopter decks, rubber and plastic materials (i.e.: cable sheaths, PVC flooring, gaskets and seals) and coatings (i.e.: paint).

C.a.2 Application on ships

The main application on board ships is considered to be firefighting foams of the type AFFF (Aqueous Film Forming Foams). PFOS-containing AFFF could be applied on board a range of ship types, but the larger volumes are usually installed on vessels carrying inflammable fluids, and on vessels with helicopter deck. Volumes normally range from some 100 litres to 10 000 litres, depending on the type and size of the vessel. The foam is typically stored in one tank serving a main system, potentially with additional smaller and separate devices (for example 20 litres), usually in the machinery room(s). Concentration of PFOS normally lay within 0.017-0.037 kg/litre foam.

A list of possible PFOS uses and those of related chemicals is given in Annex 1-A of the Draft Guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles (Secretariat of the Stockholm Convention 2013).

An indicative list of materials and components that may contain PFOS is the following:

- AFFF (Aqueous film-forming foams): used for aviation, marine and shallow spill fires developed in the 1960s
- FFFP (Film-forming Fluor-protein foams): used for aviation and shallow spill fires
- AR-AFFF (Alcohol-resistant aqueous film-forming foams): multi-purpose foams
- AR-FFFP (Alcohol-resistant film-forming flour-protein foams): multipurpose foams developed in the 1970s
- Hydraulic fluids
- Cable sheath
- Coatings
- Adhesives.

C.a.3 PFOS control

In accordance with Article 3 of the Regulation (EC) 850/2004 "on persistent organic pollutants" the production, placing on the market and use of substances listed in Annex I of this Regulation, whether on their own, in preparations or as constituents of articles, shall be prohibited.

However, Article 3 shall not apply in the case of a substance occurring as an unintentional trace contaminant in substances, preparations or articles . In this case, in accordance with Annex I of the Regulation (EC) 850/2004, this exemption shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001% by weight) when it occurs in substances or in preparations. Furthermore, the exemption shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1% by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than 1 µg/m² of the coated material.

Use of articles already in use in the Union before 25 August 2010 containing PFOS as a constituent of such articles shall be allowed.

C.a.4 Sampling and analysis of PFOS

Once standards are adopted by the European Committee for Standardisation (CEN) they should be used as the analytical test methods for demonstrating the conformity of substances, preparations and articles to the requirements set out in the Regulation (EC) 850/2004. Any other analytical method for which the user can prove equivalent performance could be used as an alternative to the CEN standards.

Reference should be made to the Draft Guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles[77].

- ✓ Sampling

A sampling protocol should be used and should contain the type of sample, the location of sampling and any relevant information on the sample.

The sample should be wrapped in aluminium foil and transferred into a vessel or container (e.g.: glass or another inert material) with a cap or screw top. The vessel should be labelled (readable, persistent against solvents and water, with unique information e.g.: code related to sampling protocol, if the sample represents any hazard this should be noted and the sample labelled respectively). The collected samples should be stored adequately (e.g. appropriate temperature; possibly exclusion of light).

Specific care should be given to cross contamination of the samples during the sampling process or in the laboratory.

- ✓ Analysis

Analytical standard methods for quantification of PFOS are under development, and very few technical standards have been defined. Due to their relative low volatility, good solubility in water and lack of chromospheres the analysis of perfluorinated alkyl substances is a challenging task. When using the different available analytical methods for PFOS and its related substances caution should be given to follow the measures needed to assure that they provide reliable results.

77 "Draft guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles Relevant to the substances listed in Annexes A, B and C to the Stockholm Convention on Persistent Organic Pollutants in 2009 and 2011" (Secretariat of the Stockholm Convention 2013).

Several methods may be utilized for example EPA 3550C:2007, EPA 3540C:1996, EPA 8321B:2007, ISO 25101-2009 often combined with laboratory in-house procedures.

The NPR-CEN/TS 15968 is a 'standard' for the determination of the extractable content of PFOS in solid items (e.g. textiles, leather, paper) and in chemical products (AFFF, cleaning agents, etc.) within the scope of supporting the Regulation (EC) 850/2004 on persistent organic pollutants (POP). A method has been developed here for "Determination of extractable perfluorooctanesulphonate (PFOS) in coated and impregnated solid articles, liquids and firefighting foams - Method for sampling, extraction and analysis by LCqMS or LC-tandem/MS".

The method is currently a technical specification (TS) meaning it is not fully validated. In addition, it only addresses the extractable PFOS and a few PFOS precursor. The method does not address the chemically bound PFOS related substances and also does not describe a holistic analysis of PFOS related substances. It is applicable to concentrations of PFOS in the extract solution in the range between 0.5 µg/L and 50 µg/L.

An analytical detection method for PFOS is currently Liquid Chromatography Mass-Spectrometer[78] (LC-MS or LC-MS/MS) for the anionic compounds (including PFOS), whereas both LC-MS(MS) and Gas Chromatography Mass Spectrometry (GC-MS) can be used for the determination of the neutral per-and poly-fluorinated alkylated substances including several precursors of PFOS.

B. BROMINATED FLAME RETARDANT (HBCDD)

HBCDD is used as flame retardant additive, providing fire protection during the service life of vehicles, buildings or articles, as well as protection while stored. The main uses of HBCDD globally are in expanded (EPS) and extruded (XPS) polystyrene foam insulation while the use in textile applications and electric and electronic appliances is smaller.

C.b.1 HBCDD properties

HBCDD is very toxic to aquatic organisms, persistent and may cause long-term adverse effects in the aquatic environment. HBCDD is a persistent, bioaccumulative and toxic (PBT) substance and has potential for long-range transport.

Extended Polystyrene (EPS) and Extruded Polystyrene (XPS) were the major uses of HBCDD in the world market. Only flame retarded EPS contains HBCD. The use of HBCDD in XPS and EPS depends on the application and on the region, e.g[79].: in Western Europe approximately 70 % of the EPS is flame retarded while in East Europe about 99%.

C.b.2 Application on ships

In the maritime industry, HBCDD can be found in expanded polystyrene (EPS) used for cryogenic insulation, such as for liquefied gas tanks (LGT), refrigerated areas, thermal insulation boards (i.e. foam materials), rubber and plastic materials (i.e. cable sheaths, PVC flooring, gaskets, seals) and coatings (i.e. paint).

The main application of HBCDD on board ships is considered to be expanded polystyrene (EPS) used for cryogenic insulation, such as for liquefied gas tanks (LGT), but also for refrigerator areas and similar. On larger LGT carriers, volumes of EPS insulation could potentially range up to several thousand cubic metres, depending on type and size of the vessel.

78 Reportedly, detection of organic compounds can be at ultra-low levels up to 1 ppm.
79 See the draft (2015) guidance for the inventory, identification and substitution of Hexabromocyclododecane (HBCD) (Secretariat of the Stockholm Convention 2013).

An indicative list of materials and components that may contain HBCDD is the following:

- Switch plug cover
- Electrical extension cover
- Polymer material of switch board
- Fire sensor/alarm cover
- Light cover, cable sheath
- Polymer made fire resistance insulation
- Coatings
- Flooring material.

C.b.3 HBCDD control

In accordance with Article 56 and Annex XIV of the Regulation[80] (EC) 1907/2006 HBCDD had a sunset date[81] on 21/08/2015. In addition, in May 2013, the Conference of the Parties amended the Stockholm Convention on persistent organic pollutants (POPs) to add HBCDD to Annex A of the convention.

An overview on derivation of International occupational exposure limits (OELs) is provided by the European Agency for Health and Safety at work (EU-OSHA website). No OEL has been derived by the European Scientific Committee on Occupational Exposure Limits (SCOEL). No OELs and threshold limit values (TLVs) of HBCDD are given at the International Chemical Safety Card -ICSC database, which was prepared in the context of cooperation between the International Programme on Chemical Safety and the European Commission.

In accordance with the POP Regulation[82], Article 4(1)(b) of this Regulation (exemptions from control measures) shall apply to concentrations of hexabromocyclododecane equal to or below 100 mg/kg (0,01 % by weight) when it occurs in substances, preparations, articles or as constituents of the flame-retarded parts of articles, subject to review by the Commission by 22 March 2019.

C.b.4 Sampling and analysis of HBCDD

HBCDD has been the only flame retardant used in EPS and XPS until recently. Therefore, all EPS and XPS tested bromine positive which have been produced before 2014 contain most likely HBCDD.

✓ Sampling

A sampling protocol should be used and should contain the type of sample, the location of sampling and any relevant information on the sample.

The screening of bromine can be a simple, rapid and cost-effective method for pre-selection steps of samples to determine which samples to select for a more complex and expensive confirmation analysis.

80 Regulation (EC) 1907/2006 "concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/ EC" as amended. (OJ L 396, 30.12.2006, p. 1).

81 As referred to in Article 58(1)(c)(i) of the REACH Regulation. In accordance with Article 58(1)(c)(i) placing on the market and the use of the substance shall be prohibited unless an authorisation is granted.

82 See Commission Regulation (EU) 2016/293 on amending Regulation (EC) No 850/2004 of the European Parliament and of the Council on persistent organic pollutants as regards Annex I, OJ L 55, 02-03-2016, p.7.

Since HBCDD has been the only flame retardant used in EPS and XPS until recently, all EPS and XPS tested bromine positive which have been produced before 2014 contain most likely HBCDD. Therefore, bromine screening can be used for a screening of HBCDD in EPS and XPS. In textiles also PBDE and other brominated flame retardants are used in addition to HBCDD. Therefore, for textiles bromine positive samples need a further confirmation analysis to determine the used flame retardant. Since also PBDE are listed as POPs a bromine positive textile sample might indicate the presence of POPs.

A range of technologies can be used for screening bromine in materials like plastics, polystyrene (PS) or polyurethane (PUR) foams, textile or rubber. Technologies used include X-ray fluorescence (XRF), Sliding Spark Spectroscopy, X-ray transmission (XRT) or Laser-Induced Breakdown Spectrometry (LIBS).

Reference should be made to the draft (2015) guidance for the inventory, identification and substitution of Hexabromocyclododecane (HBCDD) (Secretariat of the Stockholm Convention 2013). More details on screening of POPs in articles can be found in the Draft Guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles (Secretariat of the Stockholm Convention 2013).

- ✓ Analysis

Analysis refers to the extraction, purification, separation, identification, quantification and reporting of POP-PBDEs and/or HBCDD concentrations. In order to obtain meaningful and acceptable results, the analytical laboratory should have the necessary infrastructure (housing) and proven experience.

Extraction and clean-up is performed to isolate the HBCDD from the co-extracted interfering compounds. Extraction methods of HBCDD from polymers (such as EPS or XPS) have been developed and provide an appropriate base for the monitoring of HBCDD in articles and products.

Several methods may be utilized for example EPA8321B-2007, EPA3550C:2007, EPA 8270D:2007.

Current analytical methods allow the chromatographic separation and determination of all HBCDD stereoisomers (α- to ε-HBCDD). These methods are based on reversed phase liquid chromatography (LC). LC based separation methods of chiral compounds allow analysis of HBCDD enantiomers. HBCDD can also be determined by gas chromatography (GC), but the separation of stereoisomers is not possible by this approach. Also HBCDD can degrade on the GC column if too high temperatures are applied in the analysis (e.g. injector block) or if long GC columns are used.

Reference should be made to the draft (2015) guidance for the inventory, identification and substitution of Hexabromocyclododecane (HBCDD) (Secretariat of the Stockholm Convention 2013). More details on the analysis of POPs in articles can be found in the Draft Guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles (Secretariat of the Stockholm Convention 2013).

ANNEX D

SUPPLEMENT TO THE IMO FORM OF MATERIAL DECLARATION

<SUPPLEMENT attached to MD-ID-No:>

MD-ID-No.	
Date	

<Materials information>w

This materials information shows the amount of hazardous materials contained in

	Unit
1	

(unit: piece, kg, m, m^2, m^3, etc.) of the product.

Annex of EU SRR	Material name	Threshold value	Present above threshold value	If yes, material mass		If yes, information on where it is used
			Yes / No	Mass	Unit	
Annex I (materials listed in annex I of the EU SRR)	Perfluorooctane sulfonic acid (PFOS) and its derivatives	10 mg/kg (0.001% by weight*)				
Annex II (materials listed in annex II of the EU SRR)	Brominated Flame Retardant (HBCDD)	100 mg/kg (0.01% by weight)				

*Concentrations of PFOS above 10 mg/kg **(0.001% by weight)** when it occurs in substances or in preparations or concentrations of PFOS in semi-finished products or articles, or parts thereof equal to or above than **0.1% by weight** calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or for textiles or other coated materials, if the amount of PFOS is equal to or above than **1 µg/m²** of the coated material.

ANNEX E

EXAMPLES OF RCP – VSCP

A. RANDOM CHECKING PLAN (ONLY RANDOM SAMPLING, INDICATIVE & OPTIONAL)

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10		Column 11
Location, Zone, Compartment, System	Equipment	Object to check (Component, Material), Parts of use	Hazardous Material	Document Analysis Result (IHM + Documentation)	Check procedure	Sample No.	Pic. No.	Check Result	Quantity		Remarks
									Approx. Quantity of the Component/ Material/ Parts of use containing the HM	Approx. Quantity of the Hazardous Material (calculated)	
Bridge	Ceiling	Ceiling Panel	Asbestos	Not contained	Sampling check	P44-01	1	Contained	3000 kg	50 Kg	--
Accommodation area		Paint	Lead	Not contained	Sampling check	P44-02	2	Contained	30 Kg	0.2 Kg	--
Accommodation area	Fire doors in accommodation area	Sealing	Asbestos	Not contained	Sampling check	P44-03	3	Not contained	--	--	--

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10		Column 11
Location, Zone, Compartment, System	Equipment	Object to check (Component, Material), Parts of use	Hazardous Material	Document Analysis Result (IHM + Documentation)	Check procedure	Sample No.	Pic. No.	Check Result	Quantity		Remarks
									Approx. Quantity of the Component/ Material/ Parts of use containing the HM	Approx. Quantity of the Hazardous Material (calculated)	
Engine room	Exhaust gas system	Lagging for exhaust gas pipe	Asbestos	Not contained	Sampling check	P44-04	4	Contained	5000 Kg	200 Kg	IHM to be amended accordingly
Engine room	Auxiliary boiler	Insulation	Asbestos	Not contained	Sampling check	P44-05	5	Not contained	--	--	--
Engine room	Refrigeration plant	Refrigerant	CFCs	Not contained	Visual check	--	6	Not contained	--	--	--
Poop deck	Mooring winch	Brake lining	Asbestos	Not contained	Sampling check	P44-06	7	Contained	10 kg	0.1 Kg	IHM to be amended accordingly
Stern tube	Propeller shafting	Packing with hydraulic piping	Asbestos	PCHM	Sampling check	P44-07	8	Contained	200 kg		Checked during dry dock-repair works. IHM to be amended accordingly

B. VSCP (DEVELOPING AN IHM FOR EXISTING SHIP - TARGETED SAMPLING ONLY OR COMBINED WITH RANDOM SAMPLING)

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10		Column 11
Location: Zone, Compartment, System	Equipment	Object to check (Component, Material), Parts of use	Hazardous Material	Document Analysis Result	Check procedure	Sample No.	Pic. No.	Check Result	Quantity		Remarks
									Approx. Quantity of the Component/ Material/ Parts of use containing the HM	Approx. Quantity of the Hazardous Material (calculated)	
Bridge	Ceiling	Ceiling Panel	Asbestos	Contained	Visual check	--	1	Contained	3000 kg	50 Kg	--
Accommodation area		Paint	Lead	Contained	Visual check	P44-01	2	Contained	110 kg	1 Kg	--
Accommodation area	Fire doors in accommodation area (15 pieces)	Sealing (1kg)	Asbestos	Unknown	Sampling check	P44-02	3	Contained	15 x 1 = 15 kg	3 Kg	--
Engine room	Exhaust gas system	Lagging for exhaust gas pipe	Asbestos	unknown	Sampling check	P44-03	4	Contained	5000 Kg	200 Kg	--
Engine room	Main engine	Piston pin bush (10 pieces)	Lead	Unknown	Assumption	--	5	PCHM	1 x 10 = 10 kg	10 Kg	No access, relevant for ship operation
		Thermometers charge air temperature	Mercury	Contained	Visual check	--	6	Contained	0.04 kg	0.04 Kg	--
Engine room	Diesel generator (x3)	Thermometers	Mercury	Contained	Visual check	--	7	Contained	0.03 kg	0.03 Kg	--

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10		Column 11
									Quantity		
Location: Zone, Compartment, System	Equipment	Object to check (Component, Material), Parts of use	Hazardous Material	Document Analysis Result	Check procedure	Sample No.	Pic. No.	Check Result	Approx. Quantity of the Component/ Material/ Parts of use containing the HM	Approx. Quantity of the Hazardous Material (calculated)	Remarks
Engine room	Auxiliary boiler	Insulation	Asbestos	Not contained	Sampling check	P44-04	8	Contained	500 kg	100 Kg	Assumption Asbestos containing (experience). Random sampling
		Thermometers	Mercury	Contained	Visual check	--	9	Contained	0.01 kg	0.001 Kg	--
Engine room	Refrigeration plant	Refrigerant	CFCs	Not contained	Visual check	--	10	Not contained	--	--	--
Throughout the ship	FC valve (*100)	Insulation and gaskets (2 Kg each)	Asbestos	Unknown	Sampling check	P44-05	11	Contained	100 x 2 = 200 kg	30 Kg	--
Stern tube	Propeller shafting	Packing with hydraulic piping	Asbestos	Unknown	Assumption	--	12	PCHM	--	--	No access relevant for ship operation
Poop deck	Mooring winch (x 6)	Brake lining (3 Kg each)	Asbestos	Not contained	Sampling check	P44-06	13	Contained	6 x 3 = 18 kg	5.4 Kg	Assumption Asbestos containing (experience). Random sampling

ANNEX F

REFERENCES

1. Regulation (EC) 1907/2006 “Registration, Evaluation, Authorisation and Restriction of Chemicals” (REACH)
2. RoHS Directive 2011/65/EU “on the restriction of the use of certain hazardous substances in electrical and electronic equipment”
3. Regulation (EC) 850/2004 “on persistent organic pollutants”
4. Directive 2006/122/EC “relating to restrictions on the marketing and use of certain dangerous substances and preparations (perfluorooctane sulfonates)”
5. Directive 2009/148/EC “on the protection of workers from the risks related to exposure to asbestos at work”
6. Regulation (EC) 782/2003 “on the prohibition of Organotin Compounds on ships”
7. Council Directive 76/769/EEC “on the approximation of the laws, regulations and administrative provisions of the MS relating to restrictions on the marketing and use of certain dangerous substances and preparations”
8. Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation
9. Practical Guidelines for the information and training of workers involved with Asbestos removal or maintenance work (European Commission, October 2011)
10. Joint Industry Guide (JIG) JIG-101 Ed 4.1 (Revision of JIG-101 Ed. 4.0, March 2011) May 21, 2012 (Material Composition Declaration for Electrotechnical Products)
11. MEPC 57/3/19 8 February 2008 “proposal to include three Hazardous Materials in the draft Convention submitted by Norway”
12. MSC.1/Circ.1426 “Unified Interpretation of SOLAS Regulation II-1/3-5 (June 2012)”
13. MSC.1/Circ.1374 “Information on Prohibiting the Use of Asbestos On board Ships (December 2010)”
14. MSC.1/Circ.1379 “Unified Interpretation of SOLAS Regulation II-1/3-5 (December 2010)”
15. MSC/Circ.1045 “Guidelines for maintenance and monitoring of on-board materials containing asbestos” (May 2002)
16. Resolution MEPC.196(62) “2011 Guidelines for the development of the ship recycling plan”
17. Resolution MEPC.222(64) “2012 Guidelines for the survey and certification of ships under the HKC”

18. Resolution MEPC.210(63) “2012 Guidelines for safe and environmentally sound ship recycling”

19. Resolution MEPC.211(63) “2012 Guidelines for the authorisation of ship recycling facilities”

20. Resolution MEPC.222(64) “2012 Guidelines for the survey and certification of ships under the HKC”

21. Resolution MEPC.223(64) “2012 Guidelines for the inspection of ships under the HKC”

22. SC-4/17 “Listing of perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride”

23. UNEP/POPS/COP.7/INF/21 “Revised draft guidance on best available techniques and best environmental practices for the use of perfluorooctane sulfonic acid and related chemicals listed under the Stockholm Convention”

24. UNEP/POPS/COP.7/INF/26 “Revised draft guidance for the inventory of perfluorooctane sulfonic acid and related chemicals listed under the Stockholm Convention”

25. “Guidance on best available techniques and best environmental practices for the use of perfluorooctane sulfonic acid (PFOS) and related chemicals listed under the Stockholm Convention on Persistent Organic Pollutants” Draft July 2012

26. “Draft guidance on Sampling, Screening and Analysis of Persistent Organic Pollutants in Products and Articles Relevant to the substances listed in Annexes A, B and C to the Stockholm Convention on Persistent Organic Pollutants in 2009 and 2011” Draft February 2013

27. “Guidance for the inventory, identification and substitution of Hexabromocyclododecane (HBCD)” Draft April 2015.

LIST OF ABBREVIATIONS	
ACM	Asbestos Containing Material
AFS	Anti-fouling compounds and systems
EMSA	European Maritime Safety Agency
EU	European Union
GT	Gross Tonnage
HM	Hazardous Material
HBCDD	Brominated Flame Retardant
HKC	Hong Kong International Convention for the Safe and Sound Recycling of Ships
IC	Inventory Certificate
IHM	Inventory of Hazardous Materials
IMO	International Maritime Organization
LDT	Light Displacement Tonnes
MD	Material Declaration
ODS	Ozone-depleting substances
MARPOL	International Convention for the Prevention of Pollution from Ships
PCB	Polychlorinated biphenyls
PBB	Polybrominated Biphenyl
PBDE	Polybrominated Diphenyl Ethers
PCHM	Potentially Containing Hazardous Material
PFOS	Perfluorooctane sulfonic acid
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PSC	Port State Control
PSCO	Port State Control Officer
RCP	Random Checking Plan
RO	Recognised Organisation
RfRC	Ready for Recycling Certificate
SDoC	Supplier's Declaration of Conformity
SoC	Statement of Compliance
SRF	Ship Recycling Facility
SRP	Ship Recycling Plan
SRR	Ship Recycling Regulation
VSCP	Visual/Sampling Check Plan

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ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

The European Maritime Safety Agency is one of the European Union's decentralised agencies. Based in Lisbon, the Agency's mission is to ensure a high level of maritime safety, maritime security, prevention of and response to pollution from ships, as well as response to marine pollution from oil and gas installations. The overall purpose is to promote a safe, clean and economically viable maritime sector in the EU.

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II

(Information)

INFORMATION FROM EUROPEAN UNION INSTITUTIONS, BODIES, OFFICES AND AGENCIES

EUROPEAN COMMISSION

Commission Notice

Guidelines on the enforcement of obligations under the EU Ship Recycling Regulation relating to the Inventory of Hazardous Materials of vessels operating in European waters

(2020/C 349/01)

Introduction

As of 31 December 2020, the EU Ship Recycling Regulation ([1]) requires all existing EU flagged ships and non-EU flagged ships calling to an EU port or anchorage to carry on-board an Inventory of Hazardous Materials (IHM) with a certificate or statement of compliance as appropriate.

The Commission has received reports from industry stakeholders that Covid-19 restrictions have led to significant difficulties in surveying ships and producing certified IHMs. The lockdown measures and widespread travel restrictions which were introduced to control Covid-19 have reportedly prevented many ship owners (or their agents) from producing the IHM in the first instance, but also inhibited flag State surveyors and recognised organisations from verifying and certifying the IHMs.

As a consequence, industry stakeholders estimate that several thousand ships are likely to be unable to comply with the IHM obligations and may not have the required certification by the deadline of 31 December 2020.

Therefore, considering the disruptions caused by Covid-19, it is desirable to establish some common guidelines in order to ensure a harmonised approach towards enforcement by the EU port States authorities during ship inspections as of 1 January 2021.

General guiding principles

As a basic principle, the primary responsibility regarding compliance with the IHM-related obligations remains with the ship owner, and monitoring compliance with these legal obligations is the responsibility of the authorities of the EU port States.

Nevertheless, it may be necessary to take into account the exceptional circumstances linked to the Covid-19 crisis in the enforcement of those obligations by Member States, where those circumstances create situations where the compliance with these obligations is temporarily not possible, or excessively difficult.

Because of its links with the principle of proportionality ([2]), *force majeure* can be considered a general principle of EU law, which can be invoked even in the absence of explicit provisions. ([3]) Concerning the content of the notion of *force majeure*, the case law of the Court of Justice defined the notion as follows:

([1]) Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC (OJ L 330, 10.12.2013, p. 1).

([2]) See already, to that effect, the Commission notice of 1988 concerning force majeure in European agricultural law, C(88) 1696 (OJ C 259, 6.10.1988, p. 10).

([3]) See Case 71/87, Inter-Kom, EU:C:1988:186, paragraphs 10 to 17 and Case C-12/92, Huygen and Others, EU:C:1993:914, paragraph 31, repeatedly followed by the General Court, in particular in Case T-220/04, Spain v Commission, EU:T:2007:97, paragraphs 165 to 172. See also Opinion of AG Trstenjak, in Case C-101/08, Audilux, EU:C:2009:410, paragraph 71.

'It is apparent from settled case-law, established in various spheres of EU law, that the concept of force majeure must be understood as referring to abnormal and unforeseeable circumstances which were outside the control of the party by whom it is pleaded and the consequences of which could not have been avoided in spite of the exercise of all due care.' ([4])

In the particular case of the enforcement of obligations stemming from the EU Ship Recycling Regulation, however, no automatic recourse to the notion of *force majeure* can be made.

In this context, Member States are invited to carefully assess the specific circumstances of each ship owner and the degree to which this case-law might apply.

In their assessment, Member States are also invited to take due account of the length of the period between the entry into force of the Ship Recycling Regulation and the applicability date of the IHM deadline and consider whether and to what extent that period was used by the particular ship owner to prepare for compliance with those obligations.

It must be further recalled that in October 2019 the European Maritime Safety Agency (EMSA) published guidance on inspections carried out by EU port States to enforce provisions of the Ship Recycling Regulation ([5]). The aim of this EMSA guidance is to assist the Member States and their designated inspectors in their efforts to fulfil the requirements of Ship Recycling Regulation and the port State control Directive ([6]), in relation to inspections covering the respective requirements of these two instruments. It is a non-binding, reference document that provides both technical information and procedural guidance, thus contributing to harmonised implementation and enforcement of the provisions of the Ship Recycling Regulation and the port State control Directive. During inspections from the EU port States, it is therefore generally recommended to follow this EMSA guidance.

In this context, specific reference is made to the general considerations referred to in the EMSA guidance (under Section 6.3.2) in relation to the enforcement actions to be taken in the event of non-compliances. The guidance reads: 'if SR [ship recycling-related] non-compliances are found, the inspector should decide on the appropriate action to be taken. The inspector should be satisfied that any ship recycling-related non-compliances confirmed or revealed by the inspection are, or will be, rectified in accordance with the SRR [Ship Recycling Regulation]'. The EMSA guidance furthermore emphasises that 'the inspector should use professional judgement in order to decide the appropriate action(s) to be taken for any identified SR [ship recycling-related] non-compliance.'. These general guiding principles should also be followed in relation to any identified non-compliances with respect to the IHM obligations which may result from the Covid-19 crisis.

Specific scenarios due to Covid-19

In relation to the enforcement of the Ship Recycling Regulation, the EU port States authorities are likely to be confronted with two specific Covid-19 related scenarios that may require a more harmonised approach during inspections building on the general guiding principles referred to above. It is suggested to apply this harmonised approach temporarily for a limited period of 6 months after the entry into application of the IHM-related obligations for existing EU flagged vessels and non-EU flagged vessels calling at EU ports (i.e. until 30 June 2021).

1) *Vessels without a valid IHM and/or accompanying certificate*

In this case the vessel may arrive at an EU port after 31 December 2020 without carrying on board a valid IHM and/or accompanying certificate (Inventory Certificate or Ready for Recycling certificate for EU flagged vessel or Statement of Compliance for non-EU flagged vessel) and the ship owner/master claims that this non-compliance is due to the Covid-19 situation.

In all such cases where the failure to carry a valid IHM and/or the necessary certificate is involved, there is a burden of proof on the owner/master, who needs to provide evidence that all possible measures were taken to undertake the work and get the certification required. Such evidence of compliance efforts may include e.g. a service contract for sampling or a survey. It may also include a justification why it was not possible to obtain a semi-completed IHM and associated certificate as referred to in Section 2, including evidence of impossibility to comply with other elements of the certification than the on-board inspection. It is then for the inspector to decide whether this is acceptable on a case-by-case basis depending on the specific circumstances of the vessel in question and using his professional judgement.

([4]) Case C-640/15, Vilkas, EU:C:2017:39, paragraph 53.

([5]) http://www.emsa.europa.eu/news-a-press-centre/external-news/item/3721-guidance-on-inspections-of-shipsby-the-port-states-in-accordance-with-regulation-eu-1257-2013-on-ship-recycling.html

([6]) Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control (OJ L 131, 28.5.2009, p. 57).

If the inspector decides to accept the evidence provided by the owner/master, then for the Inventory Certificate or Statement of Compliance the inspector should specify that the documents should be completed and approved within 4 months after the inspection. In addition, a warning should be given to the vessel and the inspection result and warning should be registered in the ship recycling module of THETIS – EU.

If these plans have to be amended further after the inspection, due to continuing travel or access restrictions, then the owner/master needs to provide sufficient written evidence from the IHM inspectors that it has not been feasible to meet the initial plans. Again, it is then for the inspector undertaking the next inspection to decide whether this evidence is acceptable on a case-by-case basis depending on the specific circumstances of the vessel in question and using his professional judgement.

For the Ready for Recycling Certificate, if the inspector accepts the evidence after evaluation on a case-by-case basis, the owner/master of the vessel should be warned that they are required to obtain the Ready for Recycling Certificate before entering the ship recycling facility. As the Ready for Recycling Certificate is only valid for 3 months, it should be completed and approved at the earliest possible opportunity prior to the vessel undertaking its last voyage. The inspection result and warning should be registered in the ship recycling module of THETIS – EU.

2) *Vessels with a semi-completed IHM with an associated approved Inventory Certificate or Ready for Recycling Certificate (for EU flagged ships) or the Statement of Compliance (for non-EU Flagged ships), that does not contain on-board (either targeted or random) sampling*

In this case the vessel may call at an EU port or anchorage after 31 December 2020 with an IHM and associated certificate on-board, but the IHM was prepared remotely without any on-board sampling. This situation may arise as the on-board surveys that should have been undertaken to support the IHM could not be done because of the restrictions on inspecting a vessel during the Covid-19 pandemic.

In all such cases where a certificate is based on an IHM without the on-board sampling element, the IHM should in principle not be acceptable as it is not complete ([7]). However, considering that since March 2020 there has been little or no opportunity for surveyors to go on-board ships and undertake these surveys, such a remote survey/sampling could be exceptionally accepted, if there is evidence that the flag State has agreed to this ([8]). Furthermore, in this case, there would also have to be documented plans and arrangements kept on-board the ship indicating when it will be feasible for qualified samplers to complete the IHM with respect to limitations caused by the Covid-19 pandemic. It is then for the inspector to decide whether this evidence is acceptable on a case-by-case basis depending on the specific circumstances of the vessel in question and using his professional judgement.

If the inspector does accept the evidence provided by the owner/master, then for the Inventory Certificate or Statement of Compliance the inspector should specify that the IHM should be completed and approved within 4 months after the inspection. In addition, a warning should be given to the vessel and the inspection result and warning should registered in the ship recycling module of THETIS – EU.

If these plans have to be amended further after the inspection, due to continuing travel or access restrictions, then the owner/master needs to provide sufficient written evidence from the IHM inspectors that it has not been feasible to meet the initial plans. Again, it is then for the inspector undertaking the next inspection to decide whether this evidence is acceptable on a case-by-case basis depending on the specific circumstances of the vessel in question and using his professional judgement.

For the Ready for Recycling Certificate, if the inspector does accept this evidence after evaluation on a case-by-case basis, the owner/master of the vessel should be warned that it is required to complete the IHM and obtain an updated Ready for Recycling Certificate before entering the ship recycling facility. The inspection result and warning should be registered in the ship recycling module of THETIS – EU.

([7]) According to Article 5(3)(c) of the Regulation, the IHM shall be compiled taking into account the relevant IMO guidelines. If the sampling element has not been completed then the IHM is not in line with the said guidelines.

([8]) It is understood that this is also the solution that the International Association of Classification Societies (IACS) is recommending to their members, adding that the remaining sampling be done at a later date.

ANNEX 18

RESOLUTION MEPC.379(80)
(adopted on 7 July 2023)

2023 GUIDELINES FOR THE DEVELOPMENT OF THE INVENTORY OF HAZARDOUS MATERIALS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that the International Conference on the Safe and Environmentally Sound Recycling of Ships held in May 2009 adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention) together with six Conference resolutions,

NOTING that regulations 5.1 and 5.2 of the annex to the Hong Kong Convention require that ships shall have on board an Inventory of Hazardous Materials which shall be prepared and verified taking into account guidelines, including any threshold values and exemptions contained in those guidelines, developed by the Organization,

NOTING ALSO that, at its sixty-second session, it adopted, by resolution MEPC.197(62), the *Guidelines for the development of the Inventory of Hazardous Materials*,

NOTING FURTHER that, at its sixty-eighth session, it adopted, by resolution MEPC.269(68), the *2015 Guidelines for the development of the Inventory of Hazardous Materials*, which superseded the Guidelines adopted through resolution MEPC.197(62), to improve the guidance on threshold values and exemptions,

RECOGNIZING the need for a consequential revision of the Guidelines associated with amendments to Annex 1 to the *International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001* (AFS Convention) (resolution MEPC.331(76)), which introduced controls on cybutryne and entered into force on 1 January 2023,

HAVING CONSIDERED, at its eightieth session, the recommendation made by the Sub-Committee on Pollution Prevention and Response at its tenth session,

1 ADOPTS the *2023 Guidelines for the development of the Inventory of Hazardous Materials* as set out in the annex to this resolution;

2 INVITES Member Governments to apply the 2023 Guidelines as soon as possible, or at the latest when the Convention enters into force;

3 AGREES to keep the 2023 Guidelines under review in the light of experience gained with their application;

4 AGREES ALSO that the 2023 Guidelines supersede the guidelines adopted by resolution MEPC.269(68).

ANNEX

2023 GUIDELINES FOR THE DEVELOPMENT OF THE INVENTORY OF HAZARDOUS MATERIALS

1 INTRODUCTION

1.1 Objectives

These guidelines provide recommendations for developing the Inventory of Hazardous Materials (hereinafter referred to as "the Inventory" or "the IHM") to assist compliance with regulation 5 (Inventory of Hazardous Materials) of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention").

1.2 Application

These guidelines have been developed to provide relevant stakeholders (e.g. shipbuilders, equipment suppliers, repairers, shipowners and ship management companies) with the essential requirements for the practical and logical development of the Inventory.

1.3 Objectives

The objectives of the Inventory are to provide ship-specific information on the actual hazardous materials present on board, in order to protect health and safety and to prevent environmental pollution at ship recycling facilities. This information will be used by the ship recycling facilities to decide how to manage the types and amounts of materials identified in the Inventory of Hazardous Materials (regulation 9 of the Convention).

2 DEFINITIONS

The terms used in these guidelines have the same meaning as those defined in the Convention, with the following additional definitions which apply to these guidelines only.

2.1 *Exemption* (as referred to in regulation 5 of the Convention) means materials specified in paragraph 3.3 in these guidelines that do not need to be listed on the IHM, even if such materials or items exceed the IHM threshold values.

2.2 *Fixed* means the conditions that equipment or materials are securely fitted with the ship, such as by welding or with bolts, riveted or cemented, and used at their position, including electrical cables and gaskets.

2.3 *Homogeneous material* means a material of uniform composition throughout that cannot be mechanically disjointed into different materials, meaning that the materials cannot, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

2.4 *Loosely fitted equipment* means equipment or materials present on board the ship by the conditions other than "fixed", such as fire extinguishers, distress flares and lifebuoys.

2.5 *Product* means machinery, equipment, materials and applied coatings on board a ship.

2.6 *Supplier* means a company which provides products; it may be a manufacturer, trader or agency.

2.7 *Supply chain* means the series of entities involved in the supply and purchase of materials and goods, from raw materials to final product.

2.8 *Threshold value* is defined as the concentration value in homogeneous materials.

3 REQUIREMENTS FOR THE INVENTORY

3.1 Scope of the Inventory

The Inventory consists of:

Part I: Materials contained in ship structure or equipment;

Part II: Operationally generated wastes; and

Part III: Stores.

3.2 Materials to be listed in the Inventory

3.2.1 Appendix 1 of these guidelines (Items to be listed in the Inventory of Hazardous Materials), provides information on the hazardous materials that may be found on board a ship. Materials set out in appendix 1 should be listed in the Inventory. Each item in appendix 1 of these guidelines is classified under tables A, B, C or D, according to its properties:

.1 table A comprises the materials listed in appendix 1 of the Convention;

.2 table B comprises the materials listed in appendix 2 of the Convention;

.3 table C (Potentially hazardous items) comprises items which are potentially hazardous to the environment and human health at ship recycling facilities; and

.4 table D (Regular consumable goods potentially containing hazardous materials) comprises goods which are not integral to a ship and are unlikely to be dismantled or treated at a ship recycling facility.

3.2.2 Tables A and B correspond to part I of the Inventory. Table C corresponds to parts II and III and table D corresponds to part III.

3.2.3 For loosely fitted equipment, there is no need to list this in part I of the Inventory. Such equipment which remains on board when the ship is recycled should be listed in part III.

3.2.4 Those batteries containing lead acid or other hazardous materials that are fixed in place should be listed in part I of the Inventory. Batteries that are loosely fitted, which include consumer batteries and batteries in stores, should be listed in part III of the Inventory.

3.2.5 Similar materials or items that contain hazardous materials that potentially exceed the threshold value can be listed together (not individually) on the IHM with their general location and approximate amount specified there (hereinafter referred to as "bulk listing"). An example of how to list those materials and items is shown in row 3 of table 1 of appendix 3.

3.3 Exemptions – Materials not required to be listed in the Inventory

3.3.1 Materials listed in table B that are inherent in solid metals or metal alloys, such as steels, aluminium, brasses, bronzes, plating and solders, provided they are used in general construction, such as hull, superstructure, pipes or housings for equipment and machinery, are not required to be listed in the Inventory.

3.3.2 Although electrical and electronic equipment is required to be listed in the Inventory, the amount of hazardous materials potentially contained in printed wiring boards (printed circuit boards) installed in the equipment does not need to be reported in the Inventory.

3.4 Standard format of the Inventory of Hazardous Materials

The Inventory should be developed on the basis of the standard format set out in appendix 2 of these guidelines: Standard format of the Inventory of Hazardous Materials. Examples of how to complete the Inventory are provided for guidance purposes only.

3.5 Revision of threshold values

Revised threshold values in tables A and B of appendix 1 should be used for IHMs developed or updated after the adoption of the revised values and need not be applied to existing IHMs and IHMs under development. However, when materials are added to the IHM, such as during maintenance, the revised threshold values should be applied and recorded in the IHM.

4 REQUIREMENTS FOR DEVELOPMENT OF THE INVENTORY

4.1 Development of part I of the Inventory for new ships[1]

4.1.1 Part I of the Inventory for new ships should be developed at the design and construction stage.

4.1.2 *Checking of materials listed in table A*

During the development of the Inventory (part I), the presence of materials listed in table A of appendix 1 should be checked and confirmed; the quantity and location of table A materials should be listed in part I of the Inventory. If such materials are used in compliance with the Convention, they should be listed in part I of the Inventory. Any spare parts containing materials listed in table A are required to be listed in part III of the Inventory.

[1] In ascertaining whether a ship is a "new ship" or an "existing ship" according to the Convention, the term "a similar stage of construction" in regulation 1.4.2 of the annex to the Convention means the stage at which:

.1 construction identifiable with a specific ship begins; and

.2 assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

4.1.3 *Checking of materials listed in table B*

If materials listed in table B of appendix 1 are present in products above the threshold values provided in table B, the quantity and location of the products and the contents of the materials present in them should be listed in part I of the Inventory. Any spare parts containing materials listed in table B are required to be listed in part III of the Inventory.

4.1.4 *Process for checking of materials*

The checking of materials as provided in paragraphs 4.1.2 and 4.1.3 above should be based on the Material Declaration furnished by the suppliers in the shipbuilding supply chain (e.g. equipment suppliers, parts suppliers, material suppliers).

4.2 Development of part I of the Inventory for existing ships

4.2.1 In order to achieve comparable results for existing ships with respect to part I of the Inventory, the following procedure should be followed:

.1 collection of necessary information;
.2 assessment of collected information;
.3 preparation of visual/sampling check plan;
.4 onboard visual check and sampling check; and
.5 preparation of part I of the Inventory and related documentation.

4.2.2 The determination of hazardous materials present on board existing ships should, as far as practicable, be conducted as prescribed for new ships, including the procedures described in sections 6 and 7 of these guidelines. Alternatively, the procedures described in this section may be applied for existing ships, but these procedures should not be used for any new installation resulting from the conversion or repair of existing ships after the initial preparation of the Inventory.

4.2.3 The procedures described in this section should be carried out by the shipowner, who may draw upon expert assistance. Such an expert or expert party should not be the same as the person or organization authorized by the Administration to approve the Inventory).

4.2.4 Reference is made to appendix 4 (Flow diagram for developing part I of the Inventory for existing ships) and appendix 5 (Example of development process for part I of the Inventory for existing ships).

4.2.5 *Collection of necessary information (step 1)*

The shipowner should identify, research, request and procure all reasonably available documentation regarding the ship. Information that will be useful includes maintenance, conversion and repair documents; certificates, manuals, ship's plans, drawings and technical specifications; product information data sheets (such as Material Declarations); and hazardous material inventories or recycling information from sister ships. Potential sources of information could include previous shipowners, the shipbuilder, historical societies, classification society records and ship recycling facilities with experience working with similar ships.

4.2.6 *Assessment of collected information (step 2)*

The information collected in step 1 above should be assessed. The assessment should cover all materials listed in table A of appendix 1; materials listed in table B should be assessed as far as practicable. The results of the assessment should be reflected in the visual/sampling check plan.

4.2.7 *Preparation of visual/sampling check plan (step 3)*

4.2.7.1 To specify the materials listed in appendix 1 of these guidelines, a visual/sampling check plan should be prepared taking into account the collated information and any appropriate expertise. The visual/sampling check plan should be based on the following three lists:

.1 List of equipment, system and/or area for visual check (any equipment, system and/or area specified regarding the presence of the materials listed in appendix 1 by document analysis should be entered in the List of equipment, system and/or area for visual check);

.2 List of equipment, system and/or area for sampling check (any equipment, system and/or area which cannot be specified regarding the presence of the materials listed in appendix 1 by document or visual analysis should be entered in the List of equipment, system and/or area as requiring sampling check. A sampling check is the taking of samples to identify the presence or absence of hazardous material contained in the equipment, systems and/or areas, by suitable and generally accepted methods such as laboratory analysis); and

.3 List of equipment, system and/or area classed as "potentially containing hazardous material" (any equipment, system and/or area which cannot be specified regarding the presence of the materials listed in appendix 1 by document analysis may be entered in the List of equipment, system and/or area classed as "potentially containing hazardous material" without the sampling check. The prerequisite for this classification is a comprehensible justification such as the impossibility of conducting sampling without compromising the safety of the ship and its operational efficiency).

4.2.7.2 Visual/sampling checkpoints should be all points where:

.1 the presence of materials to be considered for the Inventory part I as listed in appendix 1 is likely;

.2 the documentation is not specific; or

.3 materials of uncertain composition were used.

4.2.8 *Onboard visual/sampling check (step 4)*

4.2.8.1 The onboard visual/sampling check should be carried out in accordance with the visual/sampling check plan. When a sampling check is carried out, samples should be taken and the sample points should be clearly marked on the ship plan and the sample results should be referenced. Materials of the same kind may be sampled in a representative manner. Such materials are to be checked to ensure that they are of the same kind. The sampling check should be carried out drawing upon expert assistance.

4.2.8.2 Any uncertainty regarding the presence of hazardous materials should be clarified by a visual/sampling check. Checkpoints should be documented in the ship's plan and may be supported by photographs.

4.2.8.3 If the equipment, system and/or area of the ship are not accessible for a visual check or sampling check, they should be classified as "potentially containing hazardous material". The prerequisite for such classification should be the same prerequisite as in section 4.2.7. Any equipment, system and/or area classed as "potentially containing Hazardous Material" may be investigated or subjected to a sampling check at the request of the shipowner during a later survey (e.g. during repair, refit or conversion).

4.2.9 *Preparation of part I of the Inventory and related documentation (step 5)*

If any equipment, system and/or area is classed as either "containing hazardous material" or "potentially containing hazardous material", their approximate quantity and location should be listed in part I of the Inventory. These two categories should be indicated separately in the "Remarks" column of the Inventory.

4.2.10 *Testing methods*

4.2.10.1 Samples may be tested by a variety of methods. "Indicative" or "field tests" may be used when:

.1 the likelihood of a hazard is high;

.2 the test is expected to indicate that the hazard exists; and

.3 the sample is being tested by "specific testing" to show that the hazard is present.

4.2.10.2 Indicative or field tests are quick, inexpensive and useful on board the ship or on-site, but they cannot be accurately reproduced or repeated, and cannot identify the hazard specifically, and therefore cannot be relied upon except as "indicators".

4.2.10.3 In all other cases, and in order to avoid dispute, "specific testing" should be used. Specific tests are repeatable, reliable and can demonstrate definitively whether a hazard exists or not. They will also provide a known type of the hazard. The methods indicated are found qualitative and quantitative appropriate and only testing methods to the same effect can be used. Specific tests are to be carried out by a suitably accredited laboratory, working to international standards[2] or equivalent, which will provide a written report that can be relied upon by all parties.

4.2.10.4 Specific test methods for appendix 1 materials are provided in appendix 9.

4.2.11 *Diagram of the location of hazardous materials on board a ship*

Preparation of a diagram showing the location of the materials listed in table A is recommended in order to help ship recycling facilities gain a visual understanding of the Inventory.

[2] For example ISO 17025.

4.3 Maintaining and updating part I of the Inventory during operations

4.3.1 Part I of the Inventory should be appropriately maintained and updated, especially after any repair or conversion or sale of a ship.

4.3.2 *Updating of part I of the Inventory in the event of new installation*

If any machinery or equipment is added to, removed or replaced or the hull coating is renewed, part I of the Inventory should be updated according to the requirements for new ships as stipulated in paragraphs 4.1.2 to 4.1.4. Updating is not required if identical parts or coatings are installed or applied.

4.3.3 *Continuity of part I of the Inventory*

Part I of the Inventory should belong to the ship and the continuity and conformity of the information it contains should be confirmed, especially if the flag, owner or operator of the ship changes.

4.4 Development of part II of the Inventory (operationally generated waste)

4.4.1 Once the decision to recycle a ship has been taken, part II of the Inventory should be developed before the final survey, taking into account that a ship destined to be recycled shall conduct operations in the period prior to entering the ship recycling facility in a manner that minimizes the amount of cargo residues, fuel oil and wastes remaining on board (regulation 8.2 of the Convention).

4.4.2 *Operationally generated wastes to be listed in the Inventory*

If the wastes listed in part II of the Inventory provided in table C (Potentially hazardous items) of appendix 1 are intended for delivery with the ship to a ship recycling facility, the quantity of the operationally generated wastes should be estimated and their approximate quantities and locations should be listed in part II of the Inventory.

4.5 Development of part III of the Inventory (stores)

4.5.1 Once the decision to recycle has been taken, part III of the Inventory should be developed before the final survey, taking into account the fact that a ship destined to be recycled shall minimize the wastes remaining on board (regulation 8.2 of the Convention). Each item listed in part III should correspond to the ship's operations during its last voyage.

4.5.2 *Stores to be listed in the Inventory*

If the stores to be listed in part III of the Inventory provided in table C of appendix 1 are to be delivered with the ship to a ship recycling facility, the unit (e.g. capacity of cans and cylinders), quantity and location of the stores should be listed in part III of the Inventory.

4.5.3 *Liquids and gases sealed in ship's machinery and equipment to be listed in the Inventory*

If any liquids and gases listed in table C of appendix 1 are integral in machinery and equipment on board a ship, their approximate quantity and location should be listed in part III of the Inventory. However, small amounts of lubricating oil, anti-seize compounds and grease which are applied to or injected into machinery and equipment to maintain normal performance do not fall within the scope of this provision. For subsequent completion of part III of the Inventory

during the recycling preparation processes, the quantity of liquids and gases listed in table C of appendix 1 required for normal operation, including the related pipe system volumes, should be prepared and documented at the design and construction stage. This information belongs to the ship, and continuity of this information should be maintained if the flag, owner or operator of the ship changes.

4.5.4 *Regular consumable goods to be listed in the Inventory*

Regular consumable goods, as provided in table D of appendix 1 should not be listed in part I or part II but should be listed in part III of the Inventory if they are to be delivered with the ship to a ship recycling facility. A general description including the name of item (e.g. TV set), manufacturer, quantity and location should be entered in part III of the Inventory. The check on materials provided for in paragraphs 4.1.2 and 4.1.3 of these guidelines does not apply to regular consumable goods.

4.6 Description of location of hazardous materials on board

The locations of hazardous materials on board should be described and identified using the name of location (e.g. second floor of engine-room, bridge DK, APT, No.1 cargo tank, frame number) given in the plans (e.g. general arrangement, fire and safety plan, machinery arrangement or tank arrangement).

4.7 Description of approximate quantity of hazardous materials

In order to identify the approximate quantity of hazardous materials, the standard unit used for hazardous materials should be kg, unless other units (e.g. m^3 for materials of liquid or gases, m^2 for materials used in floors or walls) are considered more appropriate. An approximate quantity should be rounded up to at least two significant figures.

5 REQUIREMENTS FOR ASCERTAINING THE CONFORMITY OF THE INVENTORY

5.1 Design and construction stage

The conformity of part I of the Inventory at the design and construction stage should be ascertained by reference to the collected Supplier's Declaration of Conformity described in section 7 and the related Material Declarations collected from suppliers.

5.2 Operational stage

Shipowners should implement the following measures in order to ensure the conformity of part I of the Inventory:

.1 to designate a person as responsible for maintaining and updating the Inventory (the designated person may be employed ashore or on board);

.2 the designated person, in order to implement paragraph 4.3.2, should establish and supervise a system to ensure the necessary updating of the Inventory in the event of new installation;

.3 to maintain the Inventory including dates of changes or new deleted entries and the signature of the designated person; and

.4 to provide related documents as required for the survey or sale of the ship.

6 MATERIAL DECLARATION

6.1 General

Suppliers to the shipbuilding industry should identify and declare whether or not the materials listed in table A or table B are present above the threshold value specified in appendix 1 of these guidelines. However, this provision does not apply to chemicals which do not constitute a part of the finished product.

6.2 Information required in the declaration

6.2.1 At a minimum the following information is required in the Material Declaration:

.1 date of declaration;

.2 Material Declaration identification number;

.3 supplier's name;

.4 product name (common product name or name used by manufacturer);

.5 product number (for identification by manufacturer);

.6 declaration of whether or not the materials listed in table A and table B of appendix 1 of these guidelines are present in the product above the threshold value stipulated in appendix 1 of these guidelines; and

.7 mass of each constituent material listed in table A and/or table B of appendix 1 of these guidelines if present above threshold value.

6.2.2 An example of the Material Declaration is shown in appendix 6.

7 SUPPLIER'S DECLARATION OF CONFORMITY

7.1 Purpose and scope

7.1.1 The purpose of the Supplier's Declaration of Conformity is to provide assurance that the related Material Declaration conforms to section 6.2, and to identify the responsible entity.

7.1.2 The Supplier's Declaration of Conformity remains valid as long as the products are present on board.

7.1.3 The supplier compiling the Supplier's Declaration of Conformity should establish a company policy.[3] The company policy on the management of the chemical substances in products which the supplier manufactures or sells should cover:

.1 Compliance with law:

The regulations and requirements governing the management of chemical substances in products should be clearly described in documents which should be kept and maintained; and

[3] A recognized quality management system may be utilized.

.2 Obtaining of information on chemical substance content:

In procuring raw materials for components and products, suppliers should be selected following an evaluation, and the information on the chemical substances they supply should be obtained.

7.2 Contents and format

7.2.1 The Supplier's Declaration of Conformity should contain the following:

.1 unique identification number;

.2 name and contact address of the issuer;

.3 identification of the subject of the Declaration of Conformity (e.g. name, type, model number, and/or other relevant supplementary information);

.4 statement of conformity;

.5 date and place of issue; and

.6 signature (or equivalent sign of validation), name and function of the authorized person(s) acting on behalf of the issuer.

7.2.2 An example of the Supplier's Declaration of Conformity is shown in appendix 7.

8 LIST OF APPENDICES

Appendix 1: Items to be listed in the Inventory of Hazardous Materials

Appendix 2: Standard format of the Inventory of Hazardous Materials

Appendix 3: Example of the development process for part I of the Inventory for new ships

Appendix 4: Flow diagram for developing part I of the Inventory for existing ships

Appendix 5: Example of the development process for part I of the Inventory for existing ships

Appendix 6: Form of Material Declaration

Appendix 7: Form of Supplier's Declaration of Conformity

Appendix 8: Examples of table A and table B materials of appendix 1 with CAS-numbers

Appendix 9: Specific test methods

Appendix 10: Examples of radioactive sources

APPENDIX 1

ITEMS TO BE LISTED IN THE INVENTORY OF HAZARDOUS MATERIALS

Table A – Materials listed in appendix 1 of the Annex to the Convention

No.	Materials		Inventory			Threshold value
			Part I	Part II	Part III	
A-1	Asbestos		x			0.1%[4]
A-2	Polychlorinated biphenyls (PCBs)		x			50 mg/kg[5]
A-3	Ozone-depleting substances	CFCs	x			no threshold value[6]
		Halons	x			
		Other fully halogenated CFCs	x			
		Carbon tetrachloride	x			
		1,1,1-Trichloroethane (Methyl chloroform)	x			
		Hydrochlorofluorocarbons	x			
		Hydrobromofluorocarbons	x			
		Methyl bromide	x			
		Bromochloromethane	x			
A-4	Anti-fouling systems containing organotin compounds as a biocide		x			2,500 mg total tin/kg[7]
	Anti-fouling systems containing cybutryne		x			1,000 mg/kg[8]

[4] In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the UN recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN's Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as Category 1A (including asbestos mixtures) under the GHS are required to be labelled as carcinogenic if the ratio is more than 0.1%. However, if 1% is applied, this threshold value should be recorded in the Inventory and, if available, the Material Declaration and can be applied not later than five years after the entry into force of the Convention. The threshold value of 0.1% need not be retroactively applied to those Inventories and Material Declarations.

[5] In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain PCBs shall be prohibited. The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PCB are characterized as hazardous under the Basel Convention.

[6] "No threshold value" is in accordance with the Montreal Protocol for reporting ODS. Unintentional trace contaminants should not be listed in the Material Declarations and in the Inventory.

[7] This threshold value is based on the *2022 Guidelines for brief sampling of anti-fouling systems on ships* (resolution MEPC.356(78)).

[8] When samples are directly taken from the hull, average values of cybutryne should not be present above 1,000 mg of cybutryne per kilogram of dry paint.

Table B – Materials listed in appendix 2 of the annex to the Convention

No.	Materials	Inventory			Threshold value
		Part I	Part II	Part III	
B-1	Cadmium and cadmium compounds	x			100 mg/kg[9]
B-2	Hexavalent chromium and hexavalent chromium compounds	x			1,000 mg/kg[8]
B-3	Lead and lead compounds	x			1,000 mg/kg[8]
B-4	Mercury and mercury compounds	x			1,000 mg/kg[8]
B-5	Polybrominated biphenyl (PBBs)	x			50 mg/kg[10]
B-6	Polybrominated diphenyl ethers (PBDEs)	x			1,000 mg/kg[8]
B-7	Polychlorinated naphthalenes (more than 3 chlorine atoms)	x			50mg/kg[11]
B-8	Radioactive substances	x			no threshold value[12]
B-9	Certain short-chain chlorinated paraffins (alkanes, C10-C13, chloro)	x			1%[13]

9 The Organization set this as the threshold value referring to the Restriction of Hazardous Substances (RoHS Directive 2011/65/EU, Annex II).

10 The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PBB are characterized as hazardous under the Basel Convention.

11 The Organization set 50 mg/kg as the threshold value referring to the concentration level at which wastes, substances and articles containing, consisting of or contaminated with PCN are characterized as hazardous under the Basel Convention.

12 All radioactive sources should be included in the Material Declaration and in the Inventory. *Radioactive source* means radioactive material permanently sealed in a capsule or closely bonded and in a solid form that is used as a source of radiation. This includes consumer products and industrial gauges with radioactive materials. Examples are listed in appendix 10.

13 The Organization set 1% as the threshold value referring to the EU legislation that restricts chlorinated paraffins from being placed on the market for use as substances or as constituents of other substances or preparations in concentrations higher than 1% (EU Regulation 1907/2006, Annex XVII Entry 42 and Regulation 519/2012).

Table C – Potentially hazardous items

No.	Properties		Goods	Inventory		
				Part I	Part II	Part III
C-1	Liquid	Oiliness	Kerosene			x
C-2			White spirit			x
C-3			Lubricating oil			x
C-4			Hydraulic oil			x
C-5			Anti-seize compounds			x
C-6			Fuel additive			x
C-7			Engine coolant additives			x
C-8			Antifreeze fluids			x
C-9			Boiler and feed water treatment and test re-agents			x
C-10			De-ionizer regenerating chemicals			x
C-11			Evaporator dosing and descaling acids			x
C-12			Paint stabilizers/rust stabilizers			x
C-13			Solvents/thinners			x
C-14			Paints			x
C-15			Chemical refrigerants			x
C-16			Battery electrolyte			x
C-17			Alcohol, methylated spirits			x
C-18	Gas	Explosives/ inflammables	Acetylene			x
C-19			Propane			x
C-20			Butane			x
C-21			Oxygen			x
C-22		Green House Gases	CO_2			x
C-23			Perfluorocarbons (PFCs)			x
C-24			Methane			x
C-25			Hydrofluorocarbon (HFCs)			x
C-27			Nitrous oxide (N_2O)			x
C-28			Sulphur hexafluoride (SF_6)			x
C-29	Liquid	Oiliness	Bunkers: fuel oil			x
C-30			Grease			x
C-31			Waste oil (sludge)		x	
C-32			Bilge and/or wastewater generated by the after-treatment systems fitted on machineries		x	
C-33			Oily liquid cargo tank residues		x	
C-34			Ballast water		x	
C-35			Raw sewage		x	
C-36			Treated sewage		x	
C-37			Non-oily liquid cargo residues		x	
C-38	Gas	Explosibility/ inflammability	Fuel gas			x

No.	Properties	Goods	Inventory		
			Part I	Part II	Part III
C-39	Solid	Dry cargo residues		x	
C-40		Medical waste/infectious waste		x	
C-41		Incinerator ash[14]		x	
C-42		Garbage		x	
C-43		Fuel tank residues		x	
C-44		Oily solid cargo tank residues		x	
C-45		Oily or chemical contaminated rags		x	
C-46		Batteries (incl. lead acid batteries)			x
C-47		Pesticides/insecticide sprays			x
C-48		Extinguishers			x
C-49		Chemical cleaner (incl. electrical equipment cleaner, carbon remover)			x
C-50		Detergent/bleacher (could be a liquid)			x
C-51		Miscellaneous medicines			x
C-52		Fire-fighting clothing and personal protective equipment			x
C-53		Dry tank residues		x	
C-54		Cargo residues		x	
C-55		Spare parts which contain materials listed in table A or table B			x

Table D – Regular consumable goods potentially containing hazardous materials*[15]*

No.	Properties	Example	Inventory		
			Part I	Part II	Part III
D-1	Electrical and electronic equipment	Computers, refrigerators, printers, scanners, television sets, radio sets, video cameras, video recorders, telephones, consumer batteries, fluorescent lamps, filament bulbs, lamps			x
D-2	Lighting equipment	Fluorescent lamps, filament bulbs, lamps			x
D-3	Non-ship-specific furniture, interior and similar equipment	Chairs, sofas, tables, beds, curtains, carpets, garbage bins, bed-linen, pillows, towels, mattresses, storage racks, decoration, bathroom installations, toys, not structurally relevant or integrated artwork			x

[14] Definition of garbage is identical to that in MARPOL Annex V. However, incinerator ash is classified separately because it may include hazardous substances or heavy metals.

[15] This table does not include ship-specific equipment integral to ship operations, which has to be listed in part I of the inventory.

APPENDIX 2

STANDARD FORMAT OF THE INVENTORY OF HAZARDOUS MATERIALS[16]

Part I

Hazardous materials contained in the ship's structure and equipment

I-1 – Paints and coating systems containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Application of paint	Name of paint	Location	Materials (classification in appendix 1)	Approximate quantity		Remarks
1	Anti-drumming compound	Primer, xx Co., xx primer #300	Hull part	Lead	35.00	kg	
2	Anti-fouling	xx Co., xx coat #100	Underwater parts	TBT	120.00	kg	

16 Examples of how to complete the Inventory are provided for guidance purposes only in accordance with paragraph 3.4 of the Guidelines.

I-2 – Equipment and machinery containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Switchboard	Engine control room	Cadmium	Housing coating	0.02	kg	
			Mercury	Heat gauge	<0.01	kg	less than 0.01kg
2	~~Diesel engine, xx Co., xx #150~~	~~Engine room~~	~~LeadCadmium~~	~~BearingStarter for blower~~	~~0.02~~	~~kg~~	
3	Diesel engine, xx Co., xx #200	Engine-room	Lead	Starter for blower	0.01	kg	revised by XXX on Oct. XX, 2008 (revoking No.2)
4	Diesel generator (x 3)	Engine-room	Lead	Ingredient of copper compounds	0.01	kg	
5	Radioactive level gauge	No. 1 Cargo tank	Radioactive substances	Gauge	5 (1.8E+11)	Ci (Bq)	Radionuclides: ^{60}Co

I-3 - Structure and hull containing materials listed in table A and table B of appendix 1 of these guidelines

No.	Name of structural element	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Wall panel	Accommodation	Asbestos	Insulation	2,500.00	kg	
2	Wall insulation	Engine control room	Lead	Perforated plate	0.01	kg	cover for insulation material
			Asbestos	Insulation	25.00	kg	under perforated plates
3							

Part II
Operationally generated waste

No.	Location[1]	Name of item (classification in appendix 1) and detail (if any) of the item	Approximate quantity		Remarks
1	Garbage locker	Garbage (food waste)	35.00	kg	
2	Bilge tank	Bilgewater	15.00	m^3	
3	No.1 cargo hold	Dry cargo residues (iron ore)	110.00	kg	
4	No.2 cargo hold	Waste oil (sludge) (crude)	120.00	kg	
5	No.1 ballast tank	Ballast water	2,500.00	m^3	
		Sediments	250.00	kg	

[1] The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

Part III
Stores

III-1 - *Stores*

No.	Location[1]	Name of item (classification in appendix 1)	Unit quantity		Figure		Approximate quantity		Remarks[2)]
								m^3	
								kg	
								kg	
									Details are shown in the attached list.
5	Paint stores	Paint, xx Co., #600	20.00	kg	5	pcs	100.00	kg	Cadmium containing.

1 The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

2 In column "Remarks" for part III items, if hazardous materials are integrated in products, the approximate amount of the contents should be shown as far as possible.

III-2 – Liquids sealed in ship's machinery and equipment

No.	Type of liquids (classification in appendix 1)	Name of machinery or equipment	Location	Approximate quantity		Remarks
1	Hydraulic oil	Deck crane hydraulic oil system	Upper deck	15.00	m^3	
		Deck machinery hydraulic oil system	Upper deck and bosun store	200.00	m^3	
		Steering gear hydraulic oil system	Steering gear room	0.55	m^3	
2	Lubricating oil	Main engine system	Engine-room	0.45	m^3	
3	Boiler water treatment	Boiler	Engine-room	0.20	m^3	

III-3 – Gases sealed in ship's machinery and equipment

No.	Type of gases (classification in appendix 1)	Name of machinery or equipment	Location	Approximate quantity		Remarks
1	HFC	AC system	AC room	100.00	kg	
2	HFC	Refrigerated provision chamber machine	AC room	50.00	kg	

III-4 – Regular consumable goods potentially containing hazardous materials

No.	Location[17]	Name of item	Quantity	Remarks
1	Accommodation	Refrigerators	1	
2	Accommodation	Personal computers	2	

[17] The location of a part II or part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of part I items is recommended to be described similarly, as far as practicable.

APPENDIX 3

EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART I OF THE INVENTORY FOR NEW SHIPS

1 OBJECTIVE OF THE TYPICAL EXAMPLE

This example has been developed to give guidance and to facilitate understanding of the development process for part I of the Inventory of Hazardous Materials for new ships.

2 DEVELOPMENT FLOW FOR PART I OF THE INVENTORY

Part I of the Inventory should be developed using the following three steps. However, the order of these steps is flexible and can be changed depending on the schedule of shipbuilding:

.1 collection of hazardous materials information;
.2 utilization of hazardous materials information; and
.3 preparation of the Inventory (by filling out standard format).

3 COLLECTION OF HAZARDOUS MATERIALS INFORMATION

3.1 Data-collection process for hazardous materials

Materials Declaration (MD) and Supplier's Declaration of Conformity (SDoC) for products from suppliers (tier 1 suppliers) should be requested and collected by the shipbuilding yard. Tier 1 suppliers may request from their suppliers (tier 2 suppliers) the relevant information if they cannot develop the MD based on the information available. Thus the collection of data on hazardous materials may involve the entire shipbuilding supply chain (figure 1).

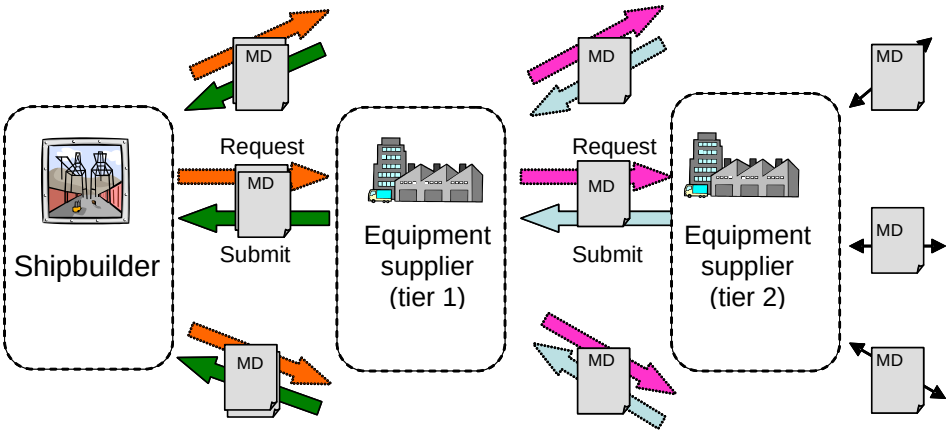


Figure 1 – Process of MD (and SDoC) collection showing involvement of supply chain

3.2 Declaration of hazardous materials

Suppliers should declare whether or not the hazardous materials listed in table A and table B in the MD are present in concentrations above the threshold values specified for each homogeneous material in a product.

3.2.1 *Materials listed in table A*

If one or more materials listed in table A are found to be present in concentrations above the specified threshold value according to the MD, the products which contain these materials shall not be installed on a ship. However, if the materials are used in a product in accordance with an exemption specified by the Convention (e.g. new installations containing hydrochlorofluorocarbons (HCFCs) before 1 January 2020), the product should be listed in the Inventory.

3.2.2 *Materials listed in table B*

If one or more materials listed in table B are found to be present in concentrations above the specified threshold value according to the MD, the products should be listed in the Inventory.

3.3 Example of homogeneous materials

Figure 2 shows an example of four homogeneous materials which constitute a cable. In this case, sheath, intervention, insulator and conductor are all individual homogeneous materials.

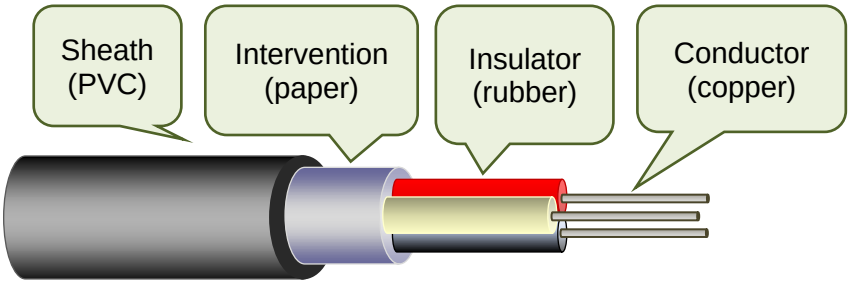


Figure 2 – *Example of homogeneous materials (cable)*

4 UTILIZATION OF HAZARDOUS MATERIALS INFORMATION

Products which contain hazardous materials in concentrations above the specified threshold values should be clearly identified in the MD. The approximate quantity of the hazardous materials should be calculated if the mass data for hazardous materials are declared in the MD using a unit which cannot be directly utilized in the Inventory.

5 PREPARATION OF INVENTORY (BY FILLING OUT STANDARD FORMAT)

The information received for the Inventory, as contained in table A and table B of appendix 1 of these guidelines, ought to be structured and utilized according to the following categorization for part I of the Inventory:

Part I-1 Paints and coating systems;

Part I-2 Equipment and machinery; and

Part I-3 Structure and hull.

5.1 "Name of equipment and machinery" column

5.1.1 *Equipment and machinery*

5.1.1.1 The name of each item of equipment or machinery should be entered in this column. If more than one hazardous material is present in the equipment or machinery, the row relating to that equipment or machinery should be appropriately divided such that all of the hazardous materials contained in the piece of equipment or machinery are entered. If more than one item of equipment or machinery is situated in one location, both name and quantity of the equipment or machinery should be entered in the column. Examples are shown in rows 1 and 2 of table 1.

5.1.1.2 For identical or common items, such as but not limited to bolts, nuts and valves, there is no need to list each item individually (see Bulk Listing in paragraph 3.2 of the guidelines). An example is shown in row 3 of table 1.

Table 1 – Example showing more than one item of equipment or machinery situated in one location

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Engine-room	Lead	Piston pin bush	0.75	kg	
			Mercury	Thermometer charge air temperature	0.01	kg	
2	Diesel generator (x 3)	Engine-room	Mercury	Thermometer	0.03	kg	
3	FC valve (x 100)	Throughout the ship	Lead and lead compounds		20.5	kg	

5.1.2 *Pipes and cables*

The names of pipes and of systems, including electric cables, which are often situated in more than one compartment of a ship, should be described using the name of the system concerned. A reference to the compartments where these systems are located is not necessary as long as the system is clearly identified and properly named.

5.2 "Approximate quantity" column

The standard unit for approximate quantity of solid hazardous materials should be kg. If the hazardous materials are liquids or gases, the standard unit should be either m^3 or kg. An approximate quantity should be rounded up to at least two significant figures. If the hazardous material is less than 10 g, the description of the quantity should read "<0.01 kg".

Table 2 – Example of a switchboard

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
	Switchboard	Engine control room	Cadmium	Housing coating	0.02	kg	
			Mercury	Heat gauge	<0.01	kg	less than 0.01 kg

5.3 "Location" column

5.3.1 *Example of a location list*

It is recommended to prepare a location list which covers all compartments of a ship based on the ship's plans (e.g. general arrangement, engine-room arrangement, accommodation and tank plan) and on other documentation on board, including certificates or spare parts lists. The description of the location should be based on a location such as a deck or room to enable easy identification. The name of the location should correspond to the ship's plans so as to ensure consistency between the Inventory and the ship's plans. Examples of names of locations are shown in table 3. For bulk listings, the locations of the items or materials may be generalized. For example, the location may only include the primary classification such as "Throughout the ship" as shown in the table 3 below.

Table 3 – Examples of location names

(A) Primary classification	(B) Secondary classification	(C) Name of location
Throughout the ship		
Hull part	Fore part	Bosun store
		…
	Cargo part	No.1 cargo hold/tank
		No.1 garage deck
		…
	Tank part	Fore peak tank
		No.1 WBT
		No.1 FOT
		…
		Aft Peak Tank
	Aft part	Steering gear room
		Emergency fire pump space
		…
	Superstructure	Accommodation
		Compass deck
		Nav. bridge deck
		…
		Wheel house
		Engine control room
		Cargo control room
		…
	Deck house	Deck house
		…
(A) Primary classification	(B) Secondary classification	(C) Name of location
Machinery part	Engine-room	Engine-room
		Main floor
		2nd floor
		…
		Generator space/room
		Purifier space/room
		Shaft space/room
		Engine casing
		Funnel
		Engine control room
		…
	Pump-room	Pump-room
		…
Exterior part	Superstructure	Superstructure
	Upper deck	Upper deck
	Hull shell	Hull shell
		bottom
		under waterline
		…

5.3.2 *Description of location of pipes and electrical systems*

5.3.2.1 Locations of pipes and systems, including electrical systems and cables situated in more than one compartment of a ship, should be described for each system concerned. If they are situated in a number of compartments, the most practical of the following two options should be used:

.1 listing of all components in the column; or

.2 description of the location of the system using an expression such as those shown under "primary classification" and "secondary classification" in table 3.

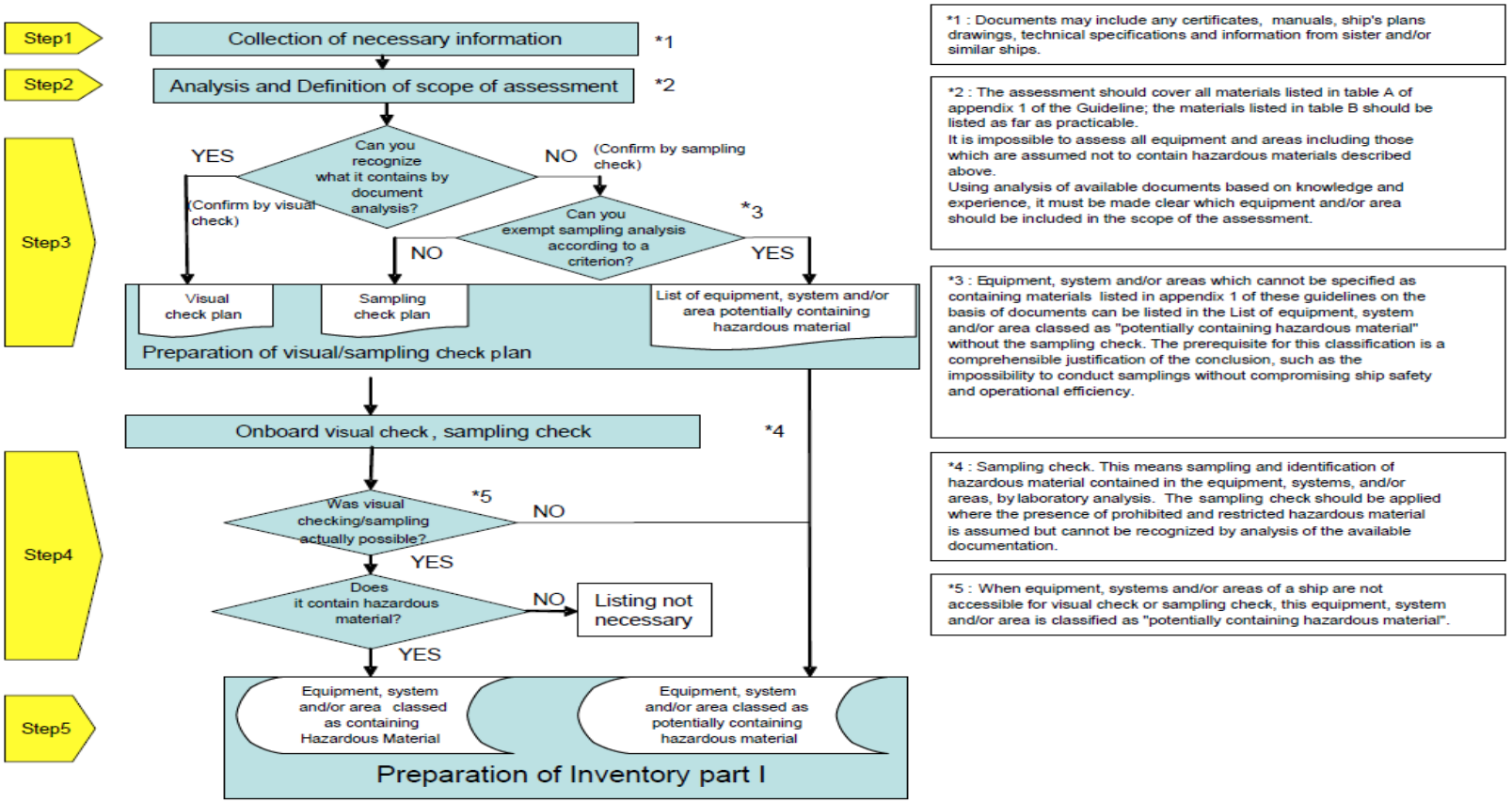
5.3.2.2 A typical description of a pipe system is shown in table 4.

Table 4 – Example of description of a pipe system

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
	Ballast water system	Engine-room, Hold parts					

APPENDIX 4

FLOW DIAGRAM FOR DEVELOPING PART I OF THE INVENTORY FOR EXISTING SHIPS



*1 : Documents may include any certificates, manuals, ship's plans drawings, technical specifications and information from sister and/or similar ships.

*2 : The assessment should cover all materials listed in table A of appendix 1 of the Guideline; the materials listed in table B should be listed as far as practicable.
It is impossible to assess all equipment and areas including those which are assumed not to contain hazardous materials described above.
Using analysis of available documents based on knowledge and experience, it must be made clear which equipment and/or area should be included in the scope of the assessment.

*3 : Equipment, system and/or areas which cannot be specified as containing materials listed in appendix 1 of these guidelines on the basis of documents can be listed in the List of equipment, system and/or area classed as "potentially containing hazardous material" without the sampling check. The prerequisite for this classification is a comprehensible justification of the conclusion, such as the impossibility to conduct samplings without compromising ship safety and operational efficiency.

*4 : Sampling check. This means sampling and identification of hazardous material contained in the equipment, systems, and/or areas, by laboratory analysis. The sampling check should be applied where the presence of prohibited and restricted hazardous material is assumed but cannot be recognized by analysis of the available documentation.

*5 : When equipment, systems and/or areas of a ship are not accessible for visual check or sampling check, this equipment, system and/or area is classified as "potentially containing hazardous material".

APPENDIX 5

EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART I OF THE INVENTORY FOR EXISTING SHIPS

1 INTRODUCTION

1.1 In order to develop part I of the Inventory of Hazardous Materials for existing ships, documents of the individual ship as well as the knowledge and experience of specialist personnel (experts) is required. An example of the development process for part I of the Inventory of Hazardous Materials for existing ships is useful to understand the basic steps as laid out in the guidelines and to ensure a unified application. However, attention should be paid to variations in different types of ships.[18]

1.2 Compilation of part I of the Inventory of Hazardous Material for existing ships involves the following five steps which are described in paragraph 4.2 and appendix 4 of these guidelines.

Step 1: Collection of necessary information;

Step 2: Assessment of collected information;

Step 3: Preparation of visual/sampling check plan;

Step 4: Onboard visual/sampling check; and

Step 5: Preparation of part I of the Inventory and related documentation.

2 STEP 1 – COLLECTION OF NECESSARY INFORMATION

2.1 Sighting of available documents

A practical first step is to collect detailed documents for the ship. The shipowner should try to collate documents normally retained on board the ship or by the shipping company as well as relevant documents that the shipyard, manufacturers or classification society may have. The following documents should be used when available:

.1 Ship's specification

.2 General Arrangement

.3 Machinery Arrangement

.4 Spare Parts and Tools List

.5 Piping Arrangement

.6 Accommodation Plan

.7 Fire-Control Plan

.8 Fire Protection Plan

.9 Insulation Plan (Hull and Machinery)

[18] The example of a 28,000 gross tonnage bulk carrier constructed in 1985 is used in this appendix.

.10 International Anti-Fouling System Certificate

.11 Related manuals and drawings

.12 Information from other inventories and/or sister or similar ships, machinery, equipment, materials and coatings

.13 Results of previous visual/sampling checks and other analysis

2.1.2 If the ship has undergone conversions or major repair work, it is necessary to identify as far as possible the modifications from the initial design and specification of the ship.

2.2 Indicative list

2.2.1 It is impossible to check all equipment, systems and/or areas on board the ship to determine the presence or absence of hazardous materials. The total number of parts on board may exceed several thousand. In order to take a practical approach, an indicative list should be prepared that identifies the equipment, system and/or area on board that is presumed to contain hazardous materials. Field interviews with the shipyard and suppliers may be necessary to prepare such lists. A typical example of an indicative list is shown below.

2.2.2 *Materials to be checked and documented*

Hazardous Materials, as identified in appendix 1 of these guidelines, should be listed in part I of the Inventory for existing ships. Appendix 1 of the guidelines contains all the materials concerned. Table A shows those which are required to be listed and table B shows those which should be listed as far as practicable.

2.2.3 *Materials listed in table A*

2.2.3.1 Table A lists the following four materials:

.1 Asbestos

.2 Polychlorinated biphenyls (PCBs)

.3 Ozone-depleting substances

.4 Anti-fouling systems containing organotin compounds as a biocide or cybutryne

2.2.3.2 *Asbestos*

Field interviews were conducted with over 200 Japanese shipyards and suppliers regarding the use of asbestos in production. Indicative lists for asbestos developed on the basis of this research are shown below:

Structure and/or equipment	Component
Propeller shafting	Packing with low pressure hydraulic piping flange
	Packing with casing
	Clutch
	Brake lining
	Synthetic stern tubes

Structure and/or equipment	Component
Diesel engine	Packing with piping flange
	Lagging material for fuel pipe
	Lagging material for exhaust pipe
	Lagging material turbocharger
Turbine engine	Lagging material for casing
	Packing with flange of piping and valve for steam line, exhaust line and drain line
	Lagging material for piping and valve of steam line, exhaust line and drain line

Structure and/or equipment	**Component**
Structure and/or equipment	Component
Boiler	Insulation in combustion chamber
	Packing for casing door
	Lagging material for exhaust pipe
	Gasket for manhole
	Gasket for hand hole
	Gas shield packing for soot blower and other hole
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Exhaust gas economizer	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Gas shield packing for soot blower
	Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line
	Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door
	Packing with manhole
	Packing with hand hole
	Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve
	Gland packing
	Brake lining
Heat exchanger	Packing with casing
	Gland packing for valve
	Lagging material and insulation
Valve	Gland packing with valve, sheet packing with piping flange
	Gasket with flange of high pressure and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipment (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material
Airborne asbestos	Wall, ceiling
Ceiling, floor and wall in accommodation area	Ceiling, floor, wall
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air conditioning system	Sheet packing, lagging material for piping and flexible joint

Structure and/or equipment	Component
Miscellaneous	Ropes
	Thermal insulating materials
	Fire shields/fire proofing
	Space/duct insulation
	Electrical cable materials
	Brake linings
	Floor tiles/deck underlay
	Steam/water/vent flange gaskets
	Adhesives/mastics/fillers
	Sound damping
	Moulded plastic products
	Sealing putty
	Shaft/valve packing
	Electrical bulkhead penetration packing
	Circuit breaker arc chutes
	Pipe hanger inserts
	Weld shop protectors/burn covers
	Fire-fighting blankets/clothing/equipment
	Concrete ballast

2.2.3.3 *Polychlorinated biphenyl (PCBs)*

Worldwide restriction of PCBs began on 17 May 2004 as a result of the implementation of the Stockholm Convention, which aims to eliminate or restrict the production and use of persistent organic pollutants. In Japan, domestic control began in 1973, with the prohibition of all activities relating to the production, use and import of PCBs. Japanese suppliers can provide accurate information concerning their products. The indicative list of PCBs has been developed as shown below:

Equipment	**Component of equipment**
Transformer	Insulating oil
Condenser	Insulating oil
Fuel heater	Heating medium
Electric cable	Covering, insulating tape
Lubricating oil	
Heat oil	Thermometers, sensors, indicators
Rubber/felt gaskets	
Rubber hose	
Plastic foam insulation	
Thermal insulating materials	
Voltage regulators	
Switches/reclosers/bushings	
Electromagnets	
Adhesives/tapes	
Surface contamination of machinery	
Oil-based paint	
Caulking	
Rubber isolation mounts	
Pipe hangers	

Equipment	Component of equipment
Light ballasts (component within fluorescent light fixtures)	
Plasticizers	
Felt under septum plates on top of hull bottom	

2.2.3.4 *Ozone-depleting substances*

The indicative list for ozone-depleting substances is shown below. Ozone-depleting substances have been controlled according to the Montreal Protocol and MARPOL Convention. Although almost all substances have been banned since 1996, HCFC can still be used until 2020.

Materials	Component of equipment	Period for use of ODS in Japan
CFCs (R11, R12)	Refrigerant for refrigerators	Until 1996
CFCs	Urethane formed material	Until 1996
	Blowing agent for insulation of LNG carriers	Until 1996
Halons	Extinguishing agent	Until 1994
Other fully halogenated CFCs	The possibility of usage in ships is low	Until 1996
Carbon tetrachloride	The possibility of usage in ships is low	Until 1996
1,1,1-Trichloroethane (methyl chloroform)	The possibility of usage in ships is low	Until 1996
HCFC (R22, R141b)	Refrigerant for refrigerating machine	It is possible to use it until 2020
HBFC	The possibility of usage in ships is low	Until 1996
Methyl bromide	The possibility of usage in ships is low	Until 2005

2.2.3.5 *Organotin compounds*

Organotin compounds include tributyl tins (TBT), triphenyl tins (TPT) and tributyl tin oxide (TBTO). Organotin compounds have been used as anti-fouling paint on ships' bottoms, and the International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention, as amended) stipulates that all ships shall not apply or reapply organotin compounds after 1 January 2003, and that, after 1 January 2008, all ships shall either not bear such compounds on their hulls or shall bear a coating that forms a barrier preventing such compounds from leaching into the sea. The above-mentioned dates may have been extended by permission of the Administration bearing in mind that the AFS Convention entered into force on 17 September 2008.

2.2.3.6 *Cybutryne*

Cybutryne has been used as biocide in anti-fouling systems, and the International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention, as amended) stipulates that all ships shall not apply or reapply cybutryne after 1 January 2023, and that ships bearing an anti-fouling system that contains this substance in the external coating layer of their hulls or external parts or surfaces on 1 January 2023 shall either remove the anti-fouling system or apply a coating that forms a barrier to this substance leaching from the underlying non-compliant anti-fouling system at the next scheduled renewal of the anti-fouling system after 1 January 2023, but no later than 60 months following the last application to the ship of an anti-fouling system containing cybutryne.

2.2.4 *Materials listed in table B*

For existing ships it is not obligatory for materials listed in table B to be listed in part I of the Inventory. However, if they can be identified in a practical way, they should be listed in the Inventory, because the information will be used to support ship recycling processes. The Indicative list of materials listed in table B is shown below:

Materials	Component of equipment
Cadmium and cadmium compounds	Plating film, bearing
Hexavalent chromium compounds	Plating film
Mercury and mercury compounds	Fluorescent light, mercury lamp, mercury cell, liquid-level switch, gyro compass, thermometer, measuring tool, manganese cell, pressure sensors, light fittings, electrical switches, fire detectors
Lead and lead compounds	Corrosion resistant primer, solder (almost all electric appliances contain solder), paints, preservative coatings, cable insulation, lead ballast, generators
Polybrominated biphenyls (PBBs)	Non-flammable plastics
Polybrominated diphenyl ethers (PBDE)	Non-flammable plastics
Polychlorinated naphthalenes	Paint, lubricating oil
Radioactive substances	Refer to appendix 10
Certain short-chain chlorinated paraffins	Non-flammable plastics

3 STEP 2 – ASSESSMENT OF COLLECTED INFORMATION

Preparation of a checklist is an efficient method for developing the Inventory for existing ships in order to clarify the results of each step. Based on collected information including the indicative list mentioned in step 1, all equipment, systems and/or areas on board assumed to contain hazardous materials listed in tables A and B should be included in the checklist. Each listed equipment, system and/or area on board should be analysed and assessed for its hazardous materials content.

The existence and volume of hazardous materials may be judged and calculated from the Spare parts and tools list and the maker's drawings. The existence of asbestos contained in floors, ceilings and walls may be identified from Fire Protection Plans, while the existence of TBT in coatings can be identified from the International Anti-Fouling System Certificate, Coating scheme and the History of Paint.

Example of weight calculation

No.	Hazardous Materials	Location/equipment/ component	Reference	Calculation
1.1-2	TBT	Flat bottom/paint	History of coatings	
1.2-1	Asbestos	Main engine/ exh. pipe packing	Spare parts and tools list	250 g x 14 sheet = 3.50 kg
1.2-3	HCFC	Ref. provision plant	Maker's drawings	20 kg x 1 cylinder = 20 kg
1.2-4	Lead	Batteries	Maker's drawings	6kg x 16 unit = 96 kg
1.3-1	Asbestos	Engine-room ceiling	Accommodation plan	

When a component or coating is determined to contain hazardous materials, a "Y" should be entered in the column for "Result of document analysis" in the checklist, to denote "Contained". Likewise, when an item is determined not to contain hazardous materials, the entry "N" should be made in the column to denote "Not contained". When a determination cannot be made as to the hazardous materials content, the column should be completed with the entry "Unknown".

Checklist (step 2)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting and coating	A/F Paints			NIL	Paints Co./marine P1000	N			・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat Bottom				3000m²		Unknown AF	Unknown			
[Inventory part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14		Diesel Co.	Y			M-100
2	A	Asbestos	3rd deck	Aux.boiler	Lagging		12		Unknown lagging	Unknown			M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM			
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1		Reito Co.	Y			Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16		Denchi Co.	Y			E-300
[Inventory part I-1.3]													
1	A	Asbestos	Upper deck	Back deck ceilings	Engine room ceiling		20m²		Unknown ceiling	Unknown			O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of Check:. V=Visual check, S=Sampling check

*4 Result of Check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

4 STEP 3 – PREPARATION OF VISUAL/SAMPLING CHECK PLAN

4.1 Each item classified as "Contained" or "Not contained" in step 2 should be subjected to a visual check on board, and the entry "V" should be made in the "Check procedure" column to denote "Visual check".

4.2 For each item categorized as "unknown", a decision should be made as to whether to apply a sampling check. However, any item categorized as "unknown" may be classed as "potentially containing hazardous material" provided comprehensive justification is given, or if it can be assumed that there will be little or no effect on disassembly as a unit and later ship recycling and disposal operations. For example, in the following checklist, in order to carry out a sampling check for "Packing with aux. boiler" the shipowner needs to disassemble the auxiliary boiler in a repair yard. The costs of this check are significantly higher than the later disposal costs at a ship recycling facility. In this case, therefore, the classification as "potentially containing hazardous material" is justifiable.

Checklist (step 3)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting & Coating	A/F Paints			NIL	Paints Co./marine P1000	N	V		・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat bottom				3000m^2		Unknown AF	Unknown	S		
[Inventory Part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14		Diesel Co.	Y	V		M-100
2	A	Asbestos	3rd deck	Aux.boiler	Lagging		12		Unknown lagging	Unknown	S		M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM	V		
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1		Reito Co.	Y	V		Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16		Denchi Co.	Y	V		E-300
[Inventory Part I-1.3]													
1	A	Asbestos	Upper deck	Back deck ceilings	Engine room ceiling		20m^2		Unknown ceiling	Unknown	S		O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of check:. V=Visual check, S=Sampling check

*4 Result of check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

4.3 Before any visual/sampling check on board is conducted, a "visual/sampling check plan" should be prepared. An example of such a plan is shown below.

4.4 To prevent any incidents during the visual/sampling check, a schedule should be established to eliminate interference with other ongoing work on board. To prevent potential exposure to hazardous materials during the visual/sampling check, safety precautions should be in place on board. For example, sampling of potential asbestos containing materials could release fibres into the atmosphere. Therefore, appropriate personnel safety and containment procedures should be implemented prior to sampling.

4.5 Items listed in the visual/sampling check should be arranged in sequence so that the onboard check is conducted in a structured manner (e.g. from a lower level to an upper level and from a fore part to an aft part).

Example of visual/sampling check plan

Name of ship	XXXXXXXXXX
IMO number	XXXXXXXXXX
Gross tonnage	28,000 GT
L x B x D	xxx.xx × xx.xx × xx.xx m
Date of delivery	dd.mm.1987
Shipowner	XXXXXXXXXX
Contact point (Address, Telephone, Fax, Email)	XXXXXXXXXX Tel: XXXX-XXXX Fax: XXXX-XXXX Email: abcdefg@hijk.co.net
Check schedule	Visual check： dd, mm, 20XX Sampling check：dd, mm, 20XX
Site of check	XX shipyard, No. Dock
In charge of check	XXXX XXXX
Check engineer	XXXX XXXX, YYYY YYYY, ZZZZ ZZZZ
Sampling engineer	Person with specialized knowledge of sampling
Sampling method and anti-scattering measure for asbestos	Wet the sampling location prior to cutting and allow it to harden after cutting to prevent scatter. Notes: Workers performing sampling activities shall wear protective equipment.
Sampling of fragments of paints	Paints suspected to contain TBT should be collected and analysed from load line, directly under bilge keel and flat bottom near amidships.
Laboratory	QQQQ QQQQ
Chemical analysis method	Method by ISO/DIS 22262-1 Bulk materials – Part 1: Sampling and qualitative determination of asbestos in commercial bulk materials and ISO/CD 22262-2 Bulk materials – Part 2: Quantitative determination of asbestos by gravimetric and microscopic methods. ICP Luminous analysis (TBT)
Location of visual/sampling check	Refer to lists for visual/sampling check

Listing for equipment, system and/or area for visual check
See attached "Analysis and definition of scope of investigation for sample ship"

List of equipment, system and/or area for sampling check				
Location	**Equipment, machinery and/or zone**	**Name of parts**	**Materials**	**Result of doc. checking**
Upper deck	Back deck ceilings	Engine-room ceiling	Asbestos	Unknown
Engine-room	Exhaust gas pipe	Insulation	Asbestos	Unknown
Engine-room	Pipe/flange	Gasket	Asbestos	Unknown
Refer to attached "Analysis and definition of scope of investigation for sample ship" and "Location plan of hazardous materials for sample ship"				

List of equipment, system and/or area classed as PCHM				
Location	**Equipment, machinery and/or zone**	**Name of part**	**Material**	**Result of doc. checking**
Floor	Propeller cap	Gasket	Asbestos	PCHM
Engine-room	Air operated shut-off valve	Gland packing	Asbestos	PCHM
Refer to attached "Analysis and definition of scope of investigation for sample ship" and "Location plan of hazardous materials for sample ship"				

This plan is established in accordance with the guidelines for the development of the Inventory of Hazardous Materials

・Document check・date/place：
dd, mm, 20XX at XX Lines Co. Ltd.

・Preparation date of plan：dd. mm, 20XX

5 STEP 4 – ONBOARD VISUAL/SAMPLING CHECK

5.1 The visual/sampling check should be conducted according to the plan. Checkpoints should be marked in the ship's plan or recorded with photographs.

5.2 A person taking samples should be protected by the appropriate safety equipment relevant to the suspected type of hazardous materials encountered. Appropriate safety precautions should also be in place for passengers, crew members and other persons on board, to minimize the potential exposure to hazardous materials. Safety precautions could include the posting of signs or other verbal or written notification for personnel to avoid such areas during sampling. The personnel taking samples should ensure compliance with relevant national regulations.

5.3 The results of visual/sampling checks should be recorded in the checklist. Any equipment, systems and/or areas of the ship that cannot be accessed for checks should be classified as "potentially containing hazardous material". In this case, the entry in the "Result of check" column should be "PCHM".

6 STEP 5 – PREPARATION OF PART I OF THE INVENTORY AND RELATED DOCUMENTATION

6.1 *Development of part I of the Inventory*

The results of the check and the estimated quantity of hazardous materials should be recorded on the checklist. Part I of the Inventory should be developed with reference to the checklist.

6.2 *Development of location diagram of hazardous materials*

With respect to part I of the Inventory, the development of a location diagram of hazardous materials is recommended in order to help the ship recycling facility gain a visual understanding of the Inventory.

Checklist (step 4 and step 5)

Analysis and definition of scope of assessment for "Sample Ship"

No.	Table A/B	Hazardous materials *1	Location	Name of equipment	Component	Quantity			Manufacturer/brand name	Result of documents analysis *2	Procedure of check *3	Result of check *4	Reference/DWG No.
						Unit (kg)	No.	Total (kg)					
[Inventory part I-1.1]													
1	A	TBT	Top side	Painting & Coating	A/F Paints			NIL	Paints Co./marine P1000	N	V	N	・On Aug., 200X, Sealer Coat applied to all over submerged area before tin-free coating.
2	A	TBT	Flat Bottom			0.02	3000m^2	60.00	Unknown AF	Unknown	S	Y	
[Inventory part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14	3.50	Diesel Co.	Y	V	Y	M-100
2	A	Asbestos	3rd deck	Aux. boiler	Lagging		12		Unknown lagging	Unknown	S	N	M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM	V	PCHM	
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1	20.00	Reito Co.	Y	V	Y	Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16	96.00	Denchi Co.	Y	V	Y	E-300
[Inventory part I-1.3]													
1	A	Asbestos	Upp.deck	Back deck ceilings	Engine room ceiling	0.19	20m^2	3.80	Unknown ceiling	Unknown	S	Y	O-25

Notes

*1 Hazardous materirials: material classification

*2 Result of documents analysis: Y=Contained, N=Not contained, Unknown, PCHM=Potentially containing hazardous material

*3 Procedure of check:. V=Visual check, S=Sampling check

*4 Result of check: Y=Contained, N=Not contained, PCHM=Potentially containing hazardous material

Example of the Inventory for existing ships

Inventory of Hazardous Materials for "Sample Ship"

Particulars of the "Sample Ship"

Distinctive number or letters	XXXXNNN
Port of registry	Port of World
Type of vessel	Bulk carrier
Gross tonnage	28,000 GT
IMO number	NNNNNNN
Name of shipbuilder	xx Shipbuilding Co. Ltd
Name of shipowner	yy Maritime SA
Date of delivery	MM/DD/1988

This inventory was developed in accordance with the guidelines for the development of the Inventory of Hazardous Materials.

Attachment:

1: Inventory of Hazardous Materials

2: Assessment of collected information

3: Location diagram of hazardous materials

Prepared by XYZ (Name & address) (dd/mm/20XX)

Inventory of Hazardous Materials: "Sample Ship"

Part I – *Hazardous materials contained in the ship's structure and equipment*

I-1 Paints and coating systems containing materials listed in table A and table B of appendix 1 of the guidelines

No.	Application of paint	Name of paint	Location*	Materials (classification in appendix 1)	Approximate quantity		Remarks
1	AF paint	Unknown paints	Flat bottom	TBT	60.00	kg	Confirmed by sampling
2							
3							

I-2 Equipment and machinery containing materials listed in table A and table B of appendix 1 of the guidelines

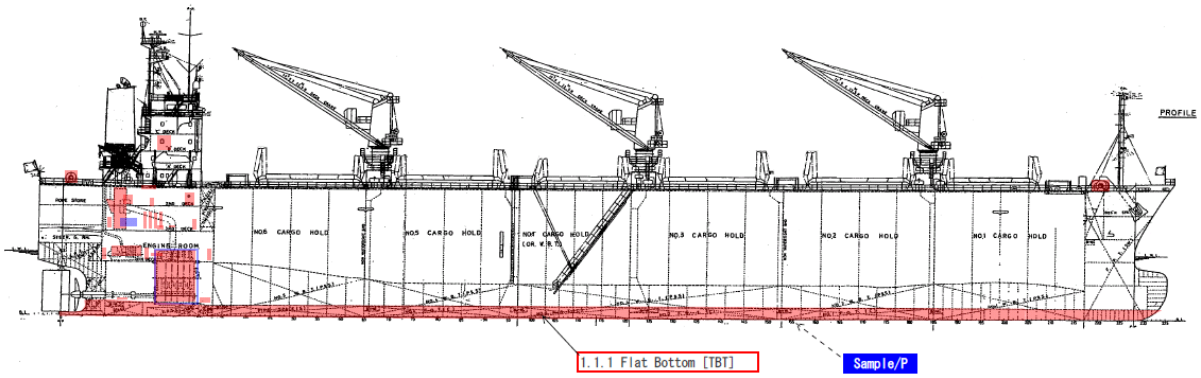
No.	Name of equipment and machinery	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	kg	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	kg	PCHM (potentially containing hazardous material)
3	Piping/flange	Engine-room	Asbestos	Packing	50.00	kg	PCHM
4	Ref. provision plant	2nd deck	HCFC	Refrigerant (R22)	20.00	kg	
5	Batteries	Navig. bridge deck	Lead		96.00	kg	

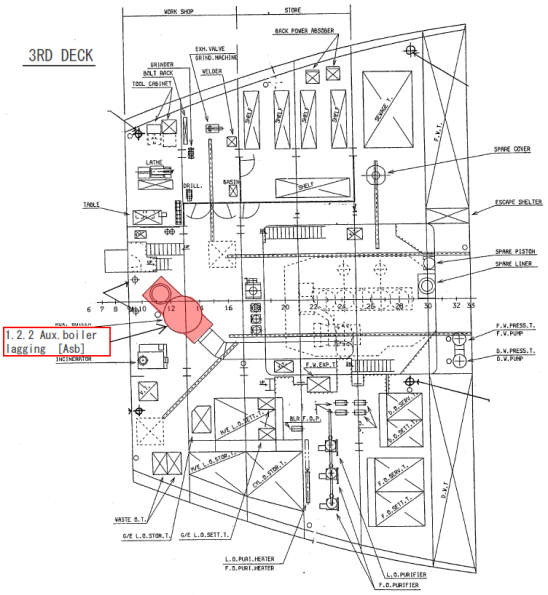
I-3 Structure and hull containing materials listed in table A and table B of appendix 1 of the guidelines

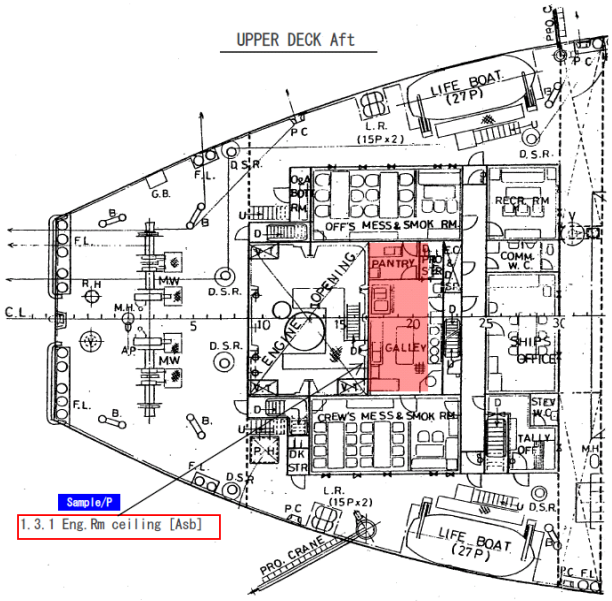
No.	Name of structural element	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Back deck ceiling	Upper deck	Asbestos	Engine-room ceiling (A class)	3.80	kg	Confirmed by sampling
2							
3							

* Each item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part.

Example of location diagram of hazardous materials







APPENDIX 6

FORM OF MATERIAL DECLARATION

<Date of declaration>

Date	

<MD ID number>

MD- ID No.	

<Other information>

Remark 1	
Remark 2	
Remark 3	

<Supplier (respondent) information>

Company name	
Division name	
Address	
Contact person	
Telephone number	
Fax number	
Email address	
SDoC ID no.	

<Product information>

Product name	Product number	Delivered unit			Product information
		Amount	Unit		

<Materials information>

	Unit
This materials information shows the amount of hazardous materials contained in 1	(unit: piece, kg, m, m^2, m^3, etc.) of the product.

Table	Material name		Threshold value	Present above threshold value	If yes, material mass		If yes, information on where it is used
				Yes / No	Mass	Unit	
Table A (materials listed in appendix 1 of the Convention)	Asbestos	Asbestos	0.1%[19]				
	Polychlorinated biphenyls (PCBs)	Polychlorinated biphenyls (PCBs)	50 mg/kg				
	Ozone-depleting substance	Chlorofluorocaobons (CFCs)	no threshold value				
		Halons					
		Other fully halogenated CFCs					
		Carbon tetrachloride					
		1,1,1-Trichloroethane					
		Hydrochlorofluorocaobons					
		Hydrobromofluorocaobons					
		Methyl bromide					
		Bromochloromethane					
	Anti-fouling systems containing organotin compounds as a biocide		2,500 mg total tin/kg				
	Anti-fouling systems containing cybutryne		1,000 mg/kg[20]				

19 In accordance with regulation 4 of the Convention, for all ships, new installation of materials which contain asbestos shall be prohibited. According to the UN recommendation "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" adopted by the United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (UNSCEGHS), the UN'S Sub-Committee of Experts, in 2002 (published in 2003), carcinogenic mixtures classified as Category 1A (including asbestos mixtures) under the GHS are required to be labelled as carcinogenic if the ratio is more than 0.1%. However, if 1% is applied, this threshold value should be recorded in the Inventory and, if available, the Material Declaration and can be applied not later than five years after the entry into force of the Convention. The threshold value of 0.1% need not be retroactively applied to those Inventories and Material Declarations.

20 When samples are directly taken from the hull, average values of cybutryne should not be present above 1,000 mg of cybutryne per kilogram of dry paint.

Table	Material name	Threshold value	Present above threshold value	If yes, material mass		If yes, information on where it is used
			Yes / No	Mass	Unit	
Table B (materials listed in appendix 2 of the Convention)	Cadmium and cadmium compounds	100 mg/kg				
	Hexavalent chromium and hexavalent chromium compounds	1,000 mg/kg				
	Lead and lead compounds	1,000 mg/kg				
	Mercury and mercury compounds	1,000 mg/kg				
	Polybrominated biphenyl (PBBs)	50 mg/kg				
	Polybrominated dephenyl ethers (PBDEs)	1,000 mg/kg				
	Polychloronaphthalenes (Cl >= 3)	50 mg/kg				
	Radioactive substances	no threshold value				
	Certain short-chain chlorinated paraffins	1%				

APPENDIX 7

FORM OF SUPPLIER'S DECLARATION OF CONFORMITY

SUPPLIER'S DECLARATION OF CONFORMITY FOR MATERIAL DECLARATION MANAGEMENT

1 Identification number _____

2 Issuer's name _____

Issuer's address _____

3 Object(s) of the declaration _____

_____

_____

4 The object(s) of the declaration described above is in conformity with the following documents：

	Document No.	Title	Edition/date of issue
5	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

6 Additional information _____

_____

Signed for and on behalf of

_____

_____

(place and date of issue)

7 _____ _____

(name, function) *(signature)*

APPENDIX 8

EXAMPLES OF TABLE A AND TABLE B MATERIALS OF APPENDIX 1 WITH CAS NUMBERS

This list was developed with reference to Joint Industry Guide No.101. This list is not exhaustive; it represents examples of chemicals with known CAS numbers and may require periodical updating.

Table	Material Category	Substances	CAS Numbers
Table A (materials listed in appendix 1 of the Convention)	Asbestos	Asbestos	1332-21-4
		Actinolite	77536-66-4
		Amosite (Grunerite)	12172-73-5
		Anthophyllite	77536-67-5
		Chrysotile	12001-29-5
		Crocidolite	12001-28-4
		Tremolite	77536-68-6
	Polychlorinated biphenyls (PCBs)	Polychlorinated biphenyls	1336-36-3
		Aroclor	12767-79-2
		Chlorodiphenyl (Aroclor 1260)	11096-82-5
		Kanechlor 500	27323-18-8
		Aroclor 1254	11097-69-1
	Ozone-depleting substances/ isomers (they may contain isomers that are not listed here)	Trichlorofluoromethane (CFC11)	75-69-4
		Dichlorodifluoromethane (CFC12)	75-71-8
		Chlorotrifluoromethane (CFC 13)	75-72-9
		Pentachlorofluoroethane (CFC 111)	354-56-3
		Tetrachlorodifluoroethane (CFC 112)	76-12-0
		Trichlorotrifluoroethane (CFC 113)	354-58-5
		1,1,2 Trichloro-1,2,2 trifluoroethane	76-13-1
		Dichlorotetrafluoroethane (CFC 114)	76-14-2
		Monochloropentafluoroethane (CFC 115)	76-15-3
		Heptachlorofluoropropane (CFC 211)	422-78-6
			135401-87-5
		Hexachlorodifluoropropane (CFC 212)	3182-26-1
		Pentachlorotrifluoropropane (CFC 213)	2354-06-5
			134237-31-3
		Tetrachlorotetrafluoropropane (CFC 214) 1,1,1,3-Tetrachlorotetrafluoropropane	29255-31-0 2268-46-4
		Trichloropentafluoropropane (CFC 215) 1,1,1-Trichloropentafluoropropane 1,2,3-Trichloropentafluoropropane	1599-41-3 4259-43-2 76-17-5
		Dichlorohexafluoropropane (CFC 216)	661-97-2
		Monochloroheptafluoropropane (CFC 217)	422-86-6
		Bromochlorodifluoromethane (Halon 1211)	353-59-3
		Bromotrifluoromethane (Halon 1301)	75-63-8
		Dibromotetrafluoroethane (Halon 2402)	124-73-2
		Carbon tetrachloride (Tetrachloromethane)	56-23-5
		1,1,1, - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
		Bromomethane (Methyl bromide)	74-83-9
		Bromodifluoromethane and isomers (HBFC's)	1511-62-2
		Dichlorofluoromethane (HCFC 21)	75-43-4
		Chlorodifluoromethane (HCFC 22)	75-45-6
		Chlorofluoromethane (HCFC 31)	593-70-4

Table	Material Category	Substances	CAS Numbers
		Tetrachlorofluoroethane (121) HCFC 1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a) 1,1,2,2-tetracloro-1-fluoroethane	134237-32-4 354-11-0 354-14-3
		Trichlorodifluoroethane (HCFC 122) 1,2,2-trichloro-1,1-difluoroethane	41834-16-6 354-21-2
		Dichlorotrifluoroethane(HCFC 123) Dichloro-1,1,2-trifluoroethane 2,2-dichloro-1,1,1-trifluroethane 1,2-dichloro-1,1,2-trifluroethane (HCFC-123a) 1,1-dichloro-1,2,2-trifluroethane (HCFC-123b) 2,2-dichloro-1,1,2-trifluroethane (HCFC-123b)	34077-87-7 90454-18-5 306-83-2 354-23-4 812-04-4 812-04-4
		Chlorotetrafluoroethane (HCFC 124) 2-chloro-1,1,1,2-tetrafluoroethane 1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	63938-10-3 2837-89-0 354-25-6
		Trichlorofluoroethane (HCFC 131) 1-Fluoro-1,2,2-trichloroethane 1,1,1-trichloro-2-fluoroethane (HCFC131b)	27154-33-2; (134237-34-6) 359-28-4 811-95-0
		Dichlorodifluoroethane (HCFC 132) 1,2-dichloro-1,1-difluoroethane (HCFC 132b) 1,1-dichloro-1,2-difluoroethane (HFCF 132c) 1,1-dichloro-2,2-difluoroethane 1,2-dichloro-1,2-difluoroethane	25915-78-0 1649-08-7 1842-05-3 471-43-2 431-06-1
		Chlorotrifluoroethane (HCFC 133) 1-chloro-1,2,2-trifluoroethane 2-chloro-1,1,1-trifluoroethane (HCFC-133a)	1330-45-6 1330-45-6 75-88-7
		Dichlorofluoroethane(HCFC 141) 1,1-dichloro-1-fluoroethane (HCFC-141b) 1,2-dichloro-1-fluoroethane	1717-00-6; (25167-88-8) 1717-00-6 430-57-9
		Chlorodifluoroethane (HCFC 142) 1-chloro-1,1-difluoroethane (HCFC142b) 1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4 75-68-3 25497-29-4
		Hexachlorofluoropropane (HCFC 221)	134237-35-7
		Pentachlorodifluoropropane (HCFC 222)	134237-36-8
		Tetrachlorotrifluropropane (HCFC 223)	134237-37-9
		Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
		Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225)	127564-92-5; (2713-09-9)
		2,2-Dichloro-1,1,1,3,3-pentafluoropropane(HCFC 225aa)	128903-21-9
		2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba)	422-48-0
		1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb)	422-44-6
		3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca)	422-56-0
		1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb)	507-55-1
		1,1-Dichloro-1,2,2,3,3-pentafluoropropane(HCFC 225cc)	13474-88-9
		1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da)	431-86-7
		1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea)	136013-79-1
		1,1-Dichloro-1,2,3,3,3-pentafluoropropane(HCFC 225eb)	111512-56-2
		Chlorohexafluoropropane (HCFC 226)	134308-72-8
		Pentachlorofluoropropane (HCFC 231)	134190-48-0
		Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
		Trichlorotrifluoropropane (HCFC 233) 1,1,1-Trichloro-3,3,3-trifluoropropane	134237-40-4 7125-83-9
		Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
		Chloropentafluoropropane (HCFC 235) 1-Chloro-1,1,3,3,3-pentafluoropropane	134237-41-5 460-92-4
		Tetrachlorofluoropropane (HCFC 241)	134190-49-1
		Trichlorodifluoropropane (HCFC 242)	134237-42-6
		Dichlorotrifluoropropane (HCFC 243) 1,1-dichloro-1,2,2-trifluoropropane 2,3-dichloro-1,1,1-trifluoropropane 3,3-Dichloro-1,1,1-trifluoropropane	134237-43-7 7125-99-7 338-75-0 460-69-5
		Chlorotetrafluoropropane (HCFC 244)	134190-50-4

Table	Material Category	Substances	CAS Numbers
		3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
		Trichlorofluoropropane (HCFC 251)	134190-51-5
		1,1,3-trichloro-1-fluoropropane	818-99-5
		Dichlorodifluoropropane (HCFC 252)	134190-52-6
		Chlorotrifluoropropane (HCFC 253)	134237-44-8
		3-chloro-1,1,1-trifluoropropane (HCFC 253fb)	460-35-5
		Dichlorofluoropropane (HCFC 261)	134237-45-9
		1,1-dichloro-1-fluoropropane	7799-56-6
		Chlorodifluoropropane (HCFC 262)	134190-53-7
		2-chloro-1,3-difluoropropane	102738-79-4
		Chlorofluoropropane (HCFC 271)	134190-54-8
		2-chloro-2-fluoropropane	420-44-0
	Organotin compounds (tributyl tin, triphenyl tin, tributyl tin oxide)	Bis(tri-n-butyltin) oxide	56-35-9
		Triphenyltin N,N'-dimethyldithiocarbamate	1803-12-9
		Triphenyltin fluoride	379-52-2
		Triphenyltin acetate	900-95-8
		Triphenyltin chloride	639-58-7
		Triphenyltin hydroxide	76-87-9
		Triphenyltin fatty acid salts (C=9-11)	47672-31-1
		Triphenyltin chloroacetate	7094-94-2
		Tributyltin methacrylate	2155-70-6
		Bis(tributyltin) fumarate	6454-35-9
		Tributyltin fluoride	1983-10-4
		Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5
		Tributyltin acetate	56-36-0
		Tributyltin laurate	3090-36-6
		Bis(tributyltin) phthalate	4782-29-0
		Copolymer of alkyl acrylate, methyl methacrylate and tributyltin methacrylate(alkyl; C=8)	-
		Tributyltin sulfamate	6517-25-5
		Bis(tributyltin) maleate	14275-57-1
		Tributyltin chloride	1461-22-9
		Mixture of tributyltin cyclopentanecarboxylate and its analogues (Tributyltin naphthenate)	-
		Mixture of tributyltin 1,2,3,4,4a, 4b, 5,6,10,10adecahydro-7-isopropyl-1, 4a-dimethyl-1-phenanthlenecarboxylate and its analogues (Tributyltin rosin salt)	-
		Other tributyl tins & triphenyl tins	-
	Anti-fouling systems containing cybutryne	Cybutryne	28159-98-0
Table B (Materials listed in appendix 2 of the Convention)	Cadmium/ cadmium compounds	Cadmium	7440-43-9
		Cadmium oxide	1306-19-0
		Cadmium sulfide	1306-23-6
		Cadmium chloride	10108-64-2
		Cadmium sulfate	10124-36-4
		Other cadmium compounds	-
	Chromium VI compounds	Chromium (VI) oxide	1333-82-0
		Barium chromate	10294-40-3
		Calcium chromate	13765-19-0
		Chromium trioxide	1333-82-0
		Lead (II) chromate	7758-97-6
		Sodium chromate	7775-11-3
		Sodium dichromate	10588-01-9
		Strontium chromate	7789-06-2
		Potassium dichromate	7778-50-9
		Potassium chromate	7789-00-6
		Zinc chromate	13530-65-9

Table	Material Category	Substances	CAS Numbers
		Other hexavalent chromium compounds	-
	Lead/lead compounds	Lead	7439-92-1
		Lead (II) sulfate	7446-14-2
		Lead (II) carbonate	598-63-0
		Lead hydrocarbonate	1319-46-6
		Lead acetate	301-04-2
		Lead (II) acetate, trihydrate	6080-56-4
		Lead phosphate	7446-27-7
		Lead selenide	12069-00-0
		Lead (IV) oxide	1309-60-0
		Lead (II,IV) oxide	1314-41-6
		Lead (II) sulfide	1314-87-0
		Lead (II) oxide	1317-36-8
		Lead (II) carbonate basic	1319-46-6
		Lead hydroxidcarbonate	1344-36-1
		Lead (II) phosphate	7446-27-7
		Lead (II) chromate	7758-97-6
		Lead (II) titanate	12060-00-3
		Lead sulfate, sulphuric acid, lead salt	15739-80-7
		Lead sulphate, tribasic	12202-17-4
		Lead stearate	1072-35-1
		Other lead compounds	-
	Mercury/ mercury compounds	Mercury	7439-97-6
		Mercuric chloride	33631-63-9
		Mercury (II) chloride	7487-94-7
		Mercuric sulfate	7783-35-9
		Mercuric nitrate	10045-94-0
		Mercuric (II) oxide	21908-53-2
		Mercuric sulfide	1344-48-5
		Other mercury compounds	-
	Polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs)	Bromobiphenyl and its ethers	2052-07-5 (2-Bromobiphenyl)
			2113-57-7 (3-Bromobiphenyl)
			92-66-0 (4-Bromobiphenyl)
			101-55-3 (ether)
		Decabromobiphenyl and its ethers	13654-09-6
			1163-19-5 (ether)
		Dibromobiphenyl and its ethers	92-86-4
			2050-47-7 (ether)
		Heptabromobiphenylether	68928-80-3
		Hexabromobiphenyl and its ethers	59080-40-9
			36355-01-8 (hexabromo-1,1'-biphenyl)
			67774-32-7 (Firemaster FF-1)
			36483-60-0 (ether)
		Nonabromobiphenylether	63936-56-1
		Octabromobiphenyl and its ethers	61288-13-9
			32536-52-0 (ether)
		Pentabromobidphenyl ether (note: commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides)	32534-81-9 (CAS number used for commercial grades of PeBDPO)
		Polybrominated biphenyls	59536-65-1
		Tetrabromobiphenyl and its ethers	40088-45-7
			40088-47-9 (ether)
		Tribromobiphenyl ether	49690-94-0
	Polychlorinated naphthalenes	Polychlorinated naphthalenes	70776-03-3
		Other polychlorinated naphthalenes	-
	Radioactive substances	Uranium	-
		Plutonium	-
		Radon	-

Table	Material Category	Substances	CAS Numbers
		Americium	-
		Thorium	-
		Caesium	7440-46-2
		Strontium	7440-24-6
		Other radioactive substances	-
	Certain short-chain chlorinated paraffins (with carbon length of 10-13 atoms)	Chlorinated paraffins (C10-13)	85535-84-8
		Other short-chain chlorinated paraffins	-

APPENDIX 9

SPECIFIC TEST METHODS

1 Asbestos

Types to test for: Actinolite CAS 77536-66-4 Amosite (Grunerite) CAS 12172-73-5 Anthophyllite CAS 77536-67-5 Chrysotile CAS 12001-29-5 Crocidolite CAS 12001-28-4 Asbestos Tremolite CAS 77536-68-6.

Specific testing techniques: Polarized Light Microscopy, electron microscope techniques and/or X-Ray Diffraction (XRD) as applicable.

Specific reporting information: The presence/no presence of asbestos, indicate the concentration range, and state the type when necessary.

Notes: .1 The suggested three kinds of testing techniques are most commonly used methods when analysing asbestos and each of them has its limitation. Laboratories should choose the most suitable methods to determine, and in most cases, two or more techniques should be utilized together.

.2 The quantification of asbestos is difficult at this stage, although the XRD technique is applicable. Only a few laboratories conduct the quantification rather than the qualification, especially when a precise number is required. Considering the demand from the operators and ship recycling parties, the precise concentration is not strictly required. Thereby, the concentration range is recommended to report, and the recommended range division according to standard VDI 3866 is as follows:

- Asbestos not detected
- Traces of asbestos detected
- Asbestos content approx. 1% to 15% by mass
- Asbestos content approx. 15% to 40% by mass
- Asbestos content greater than 40% by mass

Results that specified more precisely must be provided with a reasoned statement on the uncertainty.

.3 As to the asbestos types, to distinguish all six different types is time-consuming and in some cases not feasible by current techniques; while on the practical side, the treatment of different types of asbestos is the same. Therefore, it is suggested to report the type when necessary.

2 Polychlorinated biphenyls (PCBs)

Note: There are 209 different congeners (forms) of PCB of it is impracticable to test for all. Various organizations have developed lists of PCBs to test for as indicators. In this instance two alternative approaches are recommended. Method 1 identifies the seven congeners used by the International Council for the Exploration of the Sea (ICES). Method 2 identifies 19 congeners and seven types of aroclor (PCB mixtures commonly found in solid shipboard materials containing PCBs). Laboratories should be familiar with the requirements and consequences for each of these lists.

Types to test for: Method 1: ICES7 congeners (28, 52, 101, 118, 138, 153, 180). Method 2: 19 congeners and seven types of aroclor, using the US EPA 8082a test.

Specific testing technique: GC-MS (congener specific) or GC-ECD or GC-ELCD for applicable mixtures such as aroclors. Note: standard samples must be used for each type.

Sample Preparation: It is important to properly prepare PCB samples prior to testing. For solid materials (cables, rubber, paint, etc.), it is especially critical to select the proper extraction procedure in order to release PCBs since they are chemically bound within the product.

Specific reporting information: PCB congener, ppm per congener in sample, and for Method 2, ppm per aroclor in sample should also be reported.

Notes:

.1 Certain field or indicator tests are suitable for detecting PCBs in liquids or surfaces. However, there are currently no such tests that can accurately identify PCBs in solid shipboard materials. It is also noted that many of these tests rely on the identification of free chlorine ions and are thus highly susceptible to chlorine contamination and false readings in a marine environment where all surfaces are highly contaminated with chlorine ions from the seawater and atmosphere.

.2 Several congeners are tested for as "indicator" congeners. They are used because their presence often indicates the likelihood of other congeners in greater quantities (many PCBs are mixes, many mixes use a limited number of PCBs in small quantities, therefore the presence of these small quantities indicates the potential for a mix containing far higher quantities of other PCBs).

.3 Many reports refer to "total PCB", which is often a scaled figure to represent likely total PCBs based on the sample and the common ratios of PCB mixes. Where this is done the exact scaling technique must be stated, and is for information only and does not form part of the specific technique.

3 Ozone-depleting substances

Types to test for: as per appendix 8 of these guidelines all the listed CFCs, Halons, HCFCs and other listed substance as required by Montreal Protocol.

Specific testing technique: Gas Chromatography-Mass Spectrometry (GC-MS), coupled Electron Capture Detectors (GC-ECD) and Electrolytic Conductivity Detectors (GC-ELCD).

Specific reporting information: Type and concentration of ODS.

4 Anti-fouling systems containing organotin compounds as a biocide and/or cybutryne

4.1 Anti-fouling systems containing organotin compounds as a biocide

Types to test for: Anti-fouling compounds and systems regulated under annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention, as amended), including: tributyl tins (TBT), triphenyl tins (TPT) and tributyl tin oxide (TBTO).

Specific testing technique: As per resolution MEPC.356(78) (*2022 Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, using ICPOES, ICP, AAS, XRF, GC-MS as applicable.

Specific reporting information: Type and concentration of organotin compound.

Note: For "field" or "indicative" testing it may be acceptable to simply identify presence of tin, owing to the expected good documentation on anti-fouling systems.

4.2 Anti-fouling systems containing cybutryne

Types to test for: Anti-fouling systems containing cybutryne regulated under Annex 1 to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention, as amended).

Specific testing technique: As per resolution MEPC.356(78) (*2022 Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, using GC-MS.

Specific reporting information: Concentration of cybutryne.

4.3 Simplified approach to detect organotin compounds or cybutryne

Types to test for: Anti-fouling systems containing organotin compounds as biocides and/or cybutryne regulated under Annex 1 to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention, as amended).

Specific testing technique: As per resolution MEPC.356(78) (*2022 Guidelines for brief sampling of anti-fouling systems on ships*), adopted on 10 June 2022, using GC-MS.

Specific reporting information: Concentration of organotin compound and/or cybutryne.

APPENDIX 10

EXAMPLES OF RADIOACTIVE SOURCES

The following list contains examples of radioactive sources that should be included in the Inventory, regardless of the number, the amount of radioactivity or the type of radionuclide.

Examples of consumer products with radioactive materials

Ionization chamber smoke detectors (typical radionuclides ^{241}Am; ^{226}Ra)
Instruments/signs containing gaseous tritium light sources (^{3}H)
Instruments/signs containing radioactive painting (typical radionuclide ^{226}Ra)
High intensity discharge lamps (typical radionuclides ^{85}Kr; ^{232}Th)
Radioactive lighting rods (typical radionuclides ^{241}Am; ^{226}Ra)

Examples of industrial gauges with radioactive materials

Radioactive level gauges
Radioactive dredger gauges[21]
Radioactive conveyor gauges[21]
Radioactive spinning pipe gauges[21]

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[21] Typical radionuclides: ^{241}Am; $^{241}Am/Be$; ^{252}Cf; ^{244}Cm; ^{60}Co; ^{137}Cs; ^{153}Gd; ^{192}Ir; ^{147}Pm; ^{238}Pu; $^{239}Pu/Be$; ^{226}Ra; ^{75}S; ^{90}Sr (^{90}Y); ^{170}Tm; ^{169}Yb