ST KITTS & NEVIS INTERNATIONAL SHIP REGISTRY

MARITIME CIRCULAR – MC 144 25

COMPLIANCE WITH THE HONG KONG CONVENTION
ON SHIP RECYCLING

1. Purpose

1.1. The purpose of this Maritime Circular is to inform Maritime Registrars, Shipowners, Ship Managers, Ship Operators and Recognised Organisations about requirements of this Administration on compliance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (Ship Recycling Convention or Hong Kong Convention).

2. Introduction

2.1. The Hong Kong Convention was adopted at a Diplomatic Conference held in Hong Kong, China, in May 2009 and was developed with input from IMO Member States and non-governmental organisations, and in co-operation with the International Labour Organization and the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. It will enter into force on 26 June 2025.

2.2. The Hong Kong Convention is aimed at ensuring that vessels, when being recycled after reaching the end of their operational lives, do not pose any unnecessary risk to human health and safety or to the environment.

3. Application

3.1. In accordance with the Hong Kong Convention, after its entry into force on 26 June 2025, all vessels above 500 GT are required to develop and maintain an Inventory of Hazardous Materials (IHM), which identifies the amount and location of hazardous materials onboard a vessel.

3.2. The IMO *Resolution 379(80)* on *the 2023 Guidelines for the development of the Inventory of Hazardous Materials* suggests that each vessel must be in possession of an Inventory of Hazardous Materials (IHM) related to materials contained within the ship's structure or equipment (Part I), operationally generated wastes (Part II) and stores (Part III). A copy of the IMO 2023 Guidance is attached to this Maritime Circular.

3.3. After 26 June 2025, vessels applicable under the Convention will be required to be recycled at authorized Ship Recycling Facilities operating under the jurisdiction of a State that is a party to the Convention.

3.4. For a vessel that is flying a Flag of a State that isn't a party to the Hong Kong Convention, the Convention still applies when the vessel calls at ports within the jurisdiction of party States. This means that non-party flagged vessels are expected to comply with the Hong Kong Convention requirements, such as carrying an Inventory of Hazardous Materials (IHM), being recycled at authorized facilities, and having a Ship-Specific Recycling Plan (SRP).

4. Guidance from the Administration

4.1. The Government of Saint Kitts and Nevis is currently in the process of ratifying the Hong Kong Convention.

4.2. To ensure that the vessels flying the flag of the Federation of St. Kitts and Nevis comply with the applicable requirements, the Administration has authorised its Recognised Organisations to conduct the related surveys under the Hong Kong Convention on SKAN vessels above 500 GT and issue a Statement of Compliance, International Certificate on Inventory of Hazardous Materials and International Ready for Recycling Certificate on its behalf.

4.3. Following the requirements stipulated in the IMO Resolution 379(80) on *the 2023 Guidelines for the development of the Inventory of Hazardous Materials*, this Administration requires that each vessel should be in possession of an Inventory of Hazardous Materials (IHM) related to materials contained within the ship structure or equipment (Part I), operationally generated wastes (Part II) and stores (Part III).

4.4. Part I of the IHM for existing vessels, contracted for construction before 26 June 2025, will need to be developed not later than 5 years (or by the time of recycling) after the entry into force of the Convention.

4.5. IHM Parts I and International Ready for Recycling Certificate should be issued for vessels prior to departure at designated ship recycling facilities.

4.6. Parts II and III of the IHM will need to be prepared prior to vessels being recycled, once the decision has been taken to send vessels for recycling. IHM Parts II and III can be prepared by the crew or, if vessels' Ship Owners/Managers prefer by a hazmat expert.

This Administration intends to revise this Maritime Circular and provide the detailed information on application of the provisions of the Hong Kong Convention after the Convention is ratified by the Government.

If you have any questions, please contact this office at enquiries@skanregistry.com

Yours truly,

Graeme Morkel Digitally signed by Graeme Morkel Date: 2025.06.24 16:19:35 +01'00'

Graeme Morkel
Deputy International Registrar of Shipping and Seamen

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).

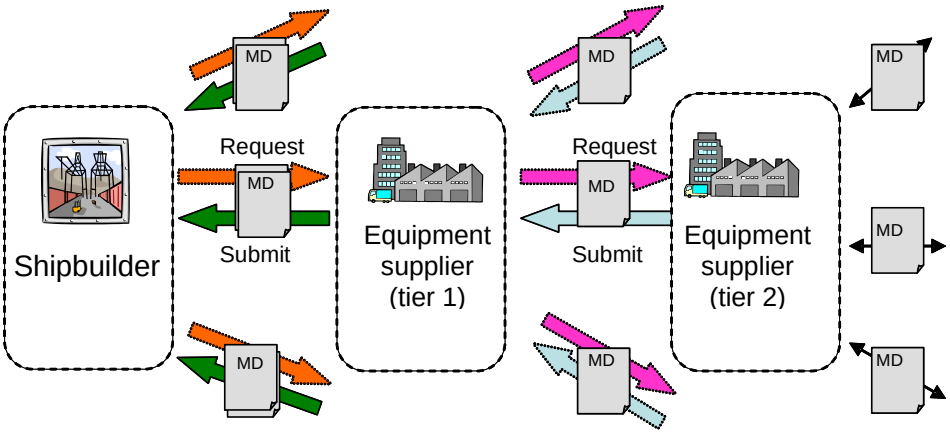


Figure 1 – Process of MD (and SDoC) collection showing involvement of supply chain

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.

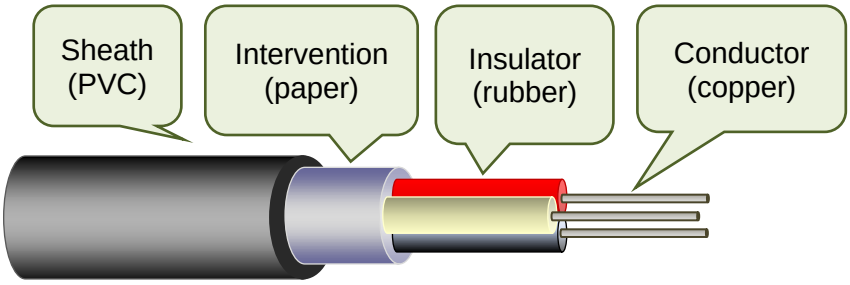


Figure 2 – *Example of homogeneous materials (cable)*

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.

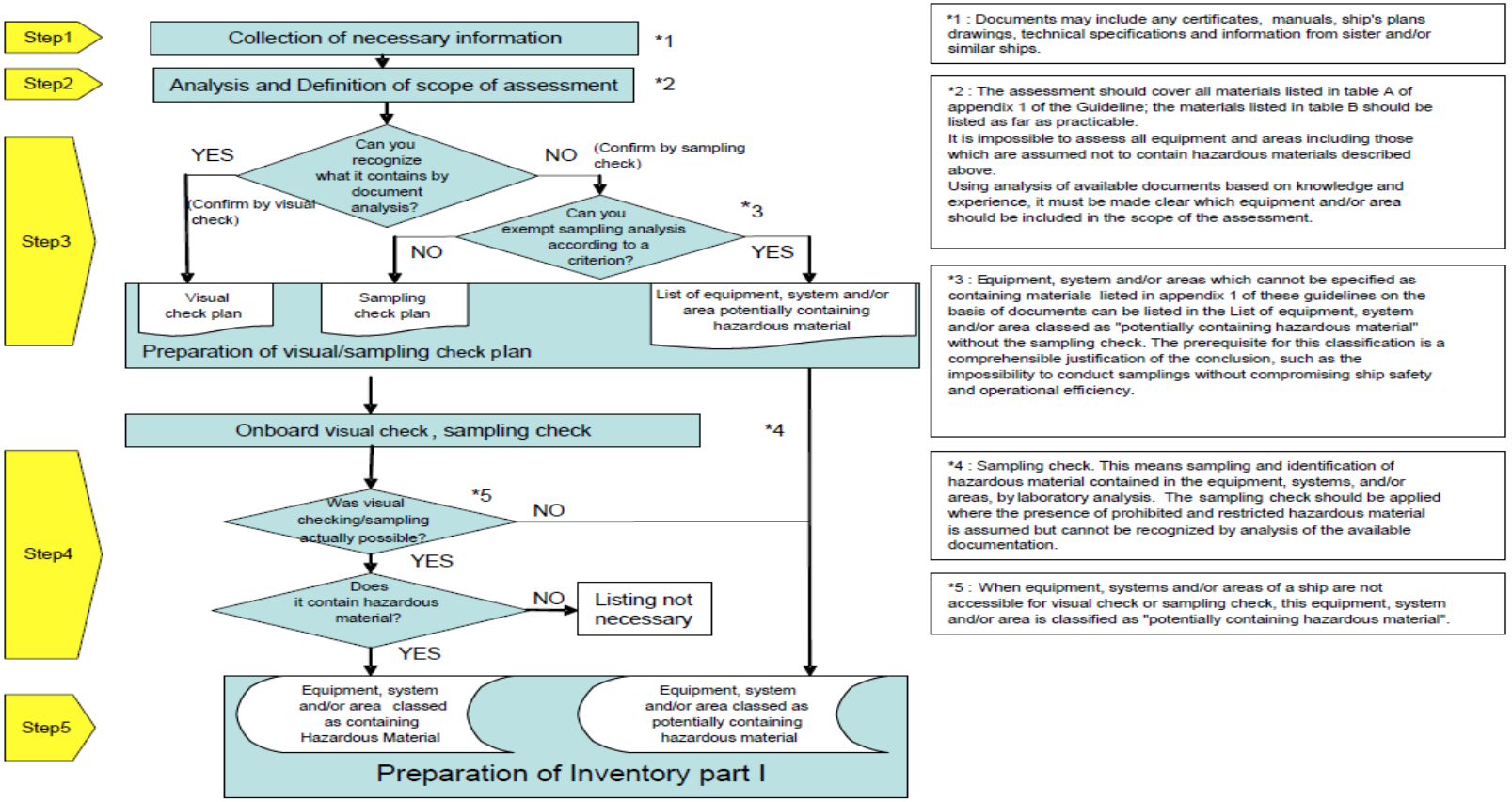
5.3.2.2 A typical description of a pipe system is shown in table 4.

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

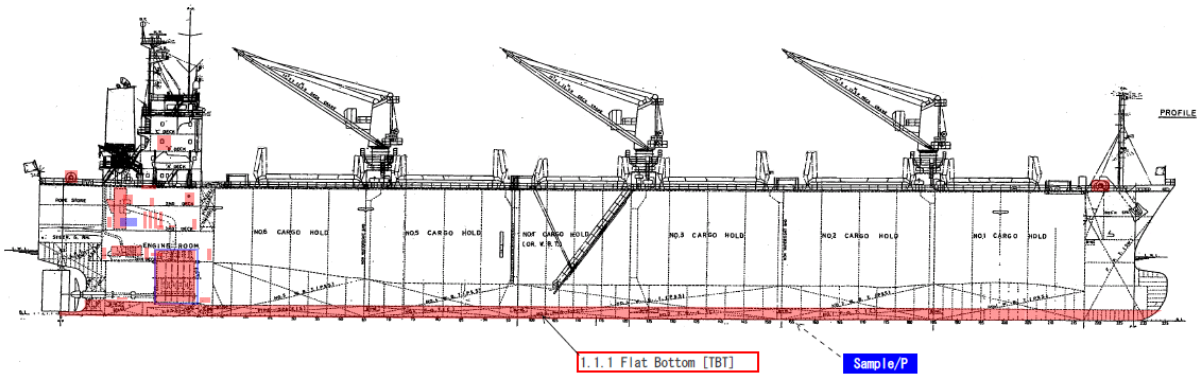
No.	Name of equipment and machinery	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	kg	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	kg	PCHM (potentially containing hazardous material)
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	

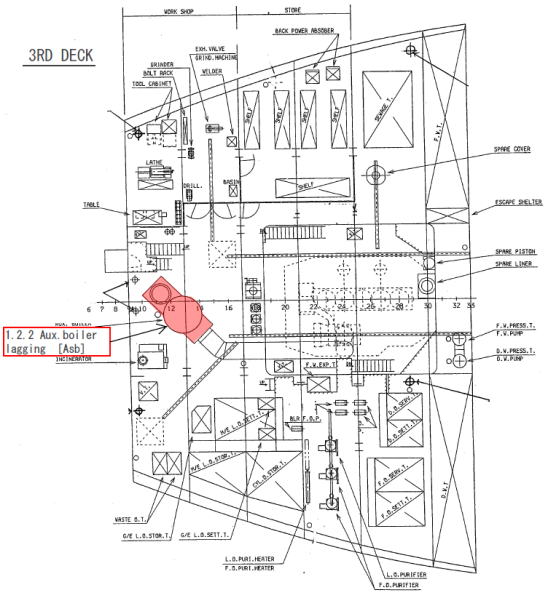
I-3 Structure and hull containing materials listed in table A and table B of appendix 1 of the guidelines

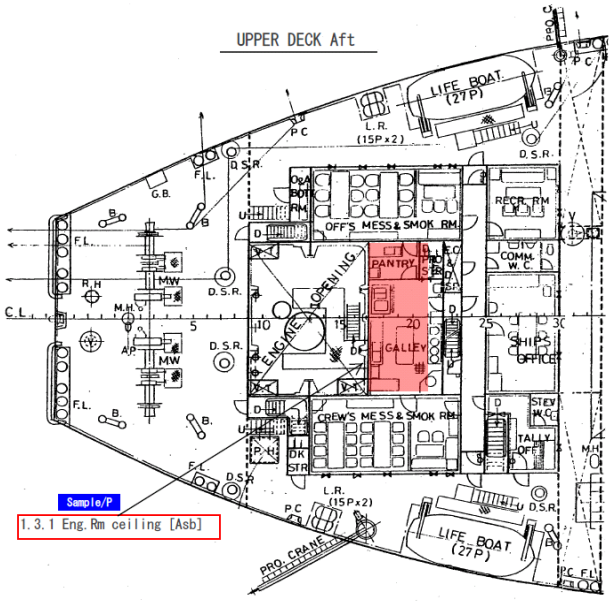
No.	Name of structural element	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Back deck ceiling	Upper deck	Asbestos	Engine-room ceiling (A class)	3.80	kg	Confirmed by sampling
2							
3							

* 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