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**THÔNG BÁO KỸ THUẬT TÀU BIỂN  
TECHNICAL INFORMATION ON SEA-GOING SHIPS**

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**Ngày 18 tháng 12 năm 2023  
Số thông báo: 14TI/23TB**

*Nội dung: Công ước quốc tế Hồng Kông về tái chế tàu an toàn, thân thiện môi trường năm 2009 sẽ có hiệu lực vào ngày 26/6/2025.*

Kính gửi:

- Các chủ tàu, công ty quản lý tàu biển
- Các đơn vị đăng kiểm tàu biển

Năm 2005, Tổ chức Hàng hải quốc tế (International Maritime Organization-IMO) đã thông qua nghị quyết A.981(24) để Ủy ban Bảo vệ Môi trường biển (MEPC) xây dựng một công cụ ràng buộc pháp lý mới cho việc tái chế tàu.

Vào 15/5/2009, Công ước quốc tế Hồng Kông về tái chế tàu an toàn, thân thiện môi trường đã được thông qua tại Hồng Kông, Trung Quốc. Tại thời điểm thông qua, Công ước quy định sẽ có hiệu lực sau 24 tháng sau khi các tiêu chí yêu cầu sau được đáp ứng:

1. Được ít nhất 15 quốc gia phê chuẩn
2. Các quốc gia phê chuẩn chiếm không ít hơn 40% tổng trọng tải tàu biển của thế giới;
3. Các quốc gia phê chuẩn có tổng trọng tải tàu tái chế hàng năm không ít hơn 3% tổng trọng tải của tàu biển của các quốc gia phê chuẩn.

Ngày 26/6/2023, Bangladesh và Liberia đã phê chuẩn công ước và nâng tổng số quốc gia ký kết Công ước Tái chế Tàu biển lên tới 22, chiếm 45,81% tổng trọng tải tàu biển thế giới, và tổng trọng tải tàu tái chế hàng năm tối đa là 3,31% tổng trọng tải của các quốc gia phê chuẩn. 22 nước đã phê chuẩn Công ước bao gồm: Bangladesh, Bỉ, Congo, Croatia, Đan Mạch, Estonia, Pháp, Đức, Ghana, Ấn Độ, Nhật Bản, Liberia, Luxembourg, Malta, Hà Lan, Na Uy, Panama, Bồ Đào Nha, Sao Tome and Principe, Serbia, Tây Ban Nha, Thổ Nhĩ Kỳ. Ngày 26/6/2023, IMO đã thông qua thông tư HKSRC.1/Circ.21, Công ước sẽ có hiệu lực vào ngày 26/6/2025.

Mục đích chính của các yêu cầu mới của Công ước đối với tàu và Cơ sở phá dỡ tàu là đảm bảo việc tái chế tàu khi tàu hết vòng đời sử dụng được thực hiện theo cách an toàn và để giảm thiểu rủi ro đối với môi trường, con người trong suốt quá trình tàu hoạt động và trong quá trình tái chế tàu.

### **I - Các yêu cầu chính của Công ước:**

Công ước đặt ra các yêu cầu về kiểm soát và ghi lại việc sử dụng một số vật liệu nguy hiểm, bao gồm: amiăng, các chất làm suy giảm tầng ôzôn, PCBs, hợp chất chống hà, và các vật liệu nguy hiểm được tìm thấy tại các kết cấu tàu và các hệ thống trang thiết bị của tàu.

#### **1) Áp dụng**

Công ước này sẽ áp dụng đối với tàu có dung tích từ 500GT trở lên và mang cờ quốc tịch các quốc gia là thành viên của Công ước này. Cụ thể là các loại tàu hoạt động trong môi trường biển và bao gồm tàu lặn, phương tiện nổi, công trình nổi, giàn tự nâng, kho chứa nổi (FSUs và FPSOs), kể cả tàu đã tháo bỏ thiết bị hoặc được lai dắt.

#### **2) Nội dung chính**

Tàu sẽ được yêu cầu phát triển và duy trì Danh mục các vật liệu nguy hiểm (Inventory of Hazardous Materials-IHM) bao gồm ba phần:

- Phần I: Các vật liệu nguy hiểm được liệt kê trong Phụ lục 1 và 2 của Công ước, có trong kết cấu và thiết bị của tàu, bao gồm cả vị trí và số lượng gần đúng của chúng. Công ước cấm hoặc hạn chế việc lắp đặt mới các vật liệu nguy hiểm được liệt kê trong Phụ lục 1 và yêu cầu ghi lại các thiết bị lắp đặt mới có chứa các vật liệu nguy hiểm được liệt kê trong Phụ lục 2.

- Phần II: Chất thải phát sinh trong quá trình vận hành có khả năng gây nguy hiểm cho môi trường và sức khỏe con người tại các Cơ sở tái chế tàu.

- Phần III: Các kho, ví dụ như kho chứa hàng tiêu dùng thông thường, có khả năng chứa các vật liệu nguy hiểm mà chúng không phải là một phần của một con tàu.

Phần I nên được phát triển theo cách tiếp cận 5 bước được nêu trong Hướng dẫn IHM, được xác minh trên tàu và được bảo trì trong suốt thời gian hoạt động của tàu. Phần II và III sẽ được phát triển để trình bày chi tiết các vật liệu nguy hiểm sẽ được chuyển cùng tàu đến Cơ sở tái chế.

#### **3) Các yêu cầu đối với tàu và Cơ sở tái chế tàu**

**a)** Đối với tất cả các tàu hiện có, việc kiểm soát sẽ được thực hiện thông qua quá trình phát triển và duy trì trong thời gian hoạt động đối với Danh mục các vật liệu nguy hiểm (IHM Phần I). IHM Phần I phải được xác minh và kiểm tra bởi Tổ chức được công nhận có thẩm quyền (Recognized Organization-RO) không muộn hơn ngày 26/6/2030, tuân theo thông tư MEPC.379(80) về Hướng dẫn kiểm kê vật liệu nguy hiểm 2023.

Khi phát triển IHM Phần I, trong trường hợp tàu không có Bản khai báo vật liệu nguy hiểm hoàn chỉnh từ khi đóng mới đến khi xác minh các vật liệu nguy hiểm trên tàu, chủ tàu có thể cần phải thực hiện lấy mẫu và phân tích các vật liệu nguy hiểm trước khi IHM Phần I hoàn thành.

**b)** Đối với tất cả các tàu đóng mới (dung tích trên 500GT được ký hợp đồng đóng mới vào hoặc sau ngày 26/6/2025) yêu cầu phát triển và duy trì IHM Phần I - Danh mục các vật liệu nguy hiểm và giấy chứng nhận quốc tế về Danh mục vật liệu nguy hiểm có hiệu lực tại thời điểm bàn giao.

Trong quá trình đóng mới, IHM Phần I phải được xây dựng dựa trên Khai báo vật liệu được thu thập từ việc cung cấp vật tư bởi công ty đóng tàu, tuân theo thông tư MEPC.379(80) về Hướng dẫn kiểm kê vật liệu nguy hiểm 2023, thay thế thông tư MEPC.269(68).

**c)** Các tàu trước khi đưa vào tái chế phải có đợt kiểm tra cuối cùng, IHM phải được cập nhật để bao gồm các dữ liệu chất thải được tạo ra trong quá trình vận hành (Phần II) và các vật phẩm dự trữ trên tàu (Phần III). Từ ngày 26/6/2025, các tàu đi tái chế sẽ phải có Giấy chứng nhận Sẵn sàng Tái chế (Ready for Recycling Certificate - RfRC) hợp lệ được cấp. RfRC được cấp dựa trên việc xem xét IHM đã hoàn thành (Phần I, II & III), xác minh rằng cơ sở tái chế tàu được ủy quyền đã được chọn và kế hoạch tái chế dành riêng cho tàu đã được lập dựa trên thông tin được cung cấp trong IHM đã hoàn thành.

**d)** Các Cơ sở tái chế tàu phải được cấp phép bởi cơ quan có thẩm quyền theo quy định của Công ước từ ngày 26/6/2023. Các Cơ sở này phải có Kế hoạch cơ sở tái chế tàu và phải lập Kế hoạch tái chế dành riêng cho tàu sẽ được tái chế theo các thông tin trong IHM của tàu.

- Kế hoạch cơ sở tái chế tàu (Ship Recycling Facility Plan-SRFP)

Các cơ sở tái chế tàu sẽ phải có Kế hoạch SRFP được Hội đồng quản trị hoặc Cơ quan quản lý hợp pháp của cơ sở tái chế tàu thông qua. Kế hoạch SRFP cần được phát triển và duy trì theo thông tư MEPC.210(63) về Hướng dẫn tái chế tàu an toàn và thân thiện với môi trường 2012. Mục đích là xác định cơ sở tái chế đã thiết lập quản lý hệ thống, hoạt động, quy trình và kỹ thuật để giảm thiểu rủi ro về sức khỏe cho người lao động và giảm tác động bất lợi cho môi trường.

- Kế hoạch tái chế cho tàu (Ship Specific Recycling Plan-SRP)

Các Cơ sở tái chế tàu có trách nhiệm xây dựng Kế hoạch SRP cho mỗi tàu mà họ sẽ tái chế. Kế hoạch SRP phải được xây dựng trước khi việc tái chế tàu diễn ra, theo thông tư MEPC.196(62) về Hướng dẫn phát triển kế hoạch tái chế tàu. SRP nên dựa trên quy trình hoạt động được nêu trong SRFP và xem xét thông tin do chủ tàu cung cấp trong IHM (Phần I, II và III). Mỗi SRP sau đó phải được phê duyệt bởi cơ quan có thẩm quyền theo quy định của Công ước.

- Ủy quyền/Giấy phép (Authorisation)

Cơ sở tái chế tàu sẽ phải được cơ quan có thẩm quyền cấp phép theo hướng dẫn quy định trong thông tư MEPC.211(63) về Cấp phép cho các Cơ sở Tái chế

Tàu và yêu cầu có Giấy Ủy quyền có hiệu lực để thực hiện tiến hành tái chế tàu (Document of Authorisation to conduct ship recycling-DASR).

Để đạt được Giấy ủy quyền DASR, Kế hoạch SRFP phải được duyệt. Giấy ủy quyền DASR sẽ có hiệu lực không quá 05 năm. Ít nhất một cuộc đánh giá bổ sung phải được cơ quan có thẩm quyền thực hiện khoảng giữa thời hạn hiệu lực của Giấy ủy quyền DASR. Ngoài ra, bất kỳ thay đổi nào đối với Cơ sở tái chế tàu có thể dẫn đến một yêu cầu kiểm tra của cơ quan có thẩm quyền.

## **II - Khuyến nghị cho tàu hoạt động tại các các quốc gia đã phê chuẩn Công ước này**

Đối với những tàu đóng mới (hoạt động tại các các quốc gia đã phê chuẩn Công ước này), chủ tàu phải thực hiện ký hợp đồng đóng mới theo quy định của Công ước để có Danh mục các vật liệu nguy hiểm (IHM) và Giấy chứng nhận quốc tế/ Giấy chứng nhận phù hợp về Danh mục vật liệu nguy hiểm có hiệu lực tại thời điểm bàn giao.

Đối với tàu hiện có (hoạt động tại các các quốc gia đã phê chuẩn Công ước này) không có IHM, chủ tàu nên bắt đầu chuẩn bị phê duyệt IHM càng sớm càng tốt (không muộn hơn ngày 26/6/2030) để đạt được Giấy chứng nhận quốc tế/ Giấy chứng nhận phù hợp về Danh mục vật liệu nguy hiểm.

Cục ĐKVN đề nghị các chủ tàu, công ty quản lý tàu biển và các đơn vị đăng kiểm tàu biển duy trì hợp tác chặt chẽ trong quá trình thực hiện Công ước.

Thông báo kỹ thuật này được nêu trong mục: Thông báo/ Thông báo kỹ thuật tàu biển của trang tin điện tử Cục ĐKVN: <http://www.vr.org.vn>.

Nếu Quý cơ quan cần thêm thông tin, đề nghị vui lòng liên hệ:

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Xin gửi đến các Quý Đơn vị lời chào trân trọng./.

*Tài liệu gửi kèm:*

- 1. HKSRC.1/Circ.21 Hong Kong International Convention for the safe and environmentally sound recycling of ships, 2009, Accession by Bangladesh and Liberia, Entry into force*
- 2. Annex SR/CONF/45 - Hong Kong International Convention for the safe and environmentally sound recycling of ships, 2009*
- 3. Resolution MEPC.379(80) – 2023 Guidelines for the development of the inventory of hazardous materials (adopted on 7 July 2023)*

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HKSRC.1/Circ.21  
26 June 2023

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

**Accession by Bangladesh and Liberia**

**Entry into force**

The Secretary-General of the International Maritime Organization has the honour to refer to the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009, and to state that with the deposit of instruments of accession by the People's Republic of Bangladesh and the Republic of Liberia on 26 June 2023, the requirements for the entry into force of the Convention, as set out in article 17(1), have been fulfilled.

Article 17(1) provides the following:

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

- .1 not less than 15 States have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with article 16;
- .2 the combined merchant fleets of the States mentioned in paragraph 1.1 constitute not less than 40% of the gross tonnage of the world's merchant shipping; and
- .3 the combined maximum annual ship recycling volume of the States mentioned in paragraph 1.1 during the preceding 10 years constitutes not less than 3% of the gross tonnage of the combined merchant shipping of the same States."

There are, at present, 22 Contracting States to the Convention, representing approximately 45.81%<sup>1</sup> of the gross tonnage of the world's merchant shipping. The combined annual ship recycling volume of the Contracting States during the preceding 10 years amounts to 23,848,453 gross tonnage<sup>2</sup>, equivalent to 3.31% of the required recycling volume.

Therefore, in accordance with article 17(1), the Convention will enter into force on 26 June 2025, 24 months following the date on which the requirements for entry into force were met.

<sup>1</sup> Tonnage calculated as at 26 June 2023 based on world tonnage figures provided by S&P Global current as of 20 June 2023.

<sup>2</sup> Recycling data provided by S&P Global and based on the volumes recycled between 2012-2021.

The annex to this circular contains the list of the 22 Contracting States to the Convention.

The instrument of accession by Bangladesh contained the following declaration, in accordance with article 16, paragraph 6 of the Convention:

"Bangladesh declares that it requires tacit approval of the Ship Recycling Plan before a ship may be recycled in its authorized Ship Recycling Facility/Facilities."

The instrument of accession by Liberia was accompanied by the following declaration, in accordance with article 16, paragraph 6 of the Convention:

"The Government of Liberia declares that it requires explicit approval of the Ship Recycling Plan before a ship may be recycled in its authorized Ship Recycling Facility(ies)."

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**ANNEX**

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

Done in Hong Kong, 15 May 2009

Entry into force: 26 June 2025

State	Date of deposit of instrument	Date of entry into force	% World Tonnage	Merchant Fleet (GT) 2022	Ship Recycling volume (GT)
Bangladesh	26 June 2023	26 June 2025	0.20%	3,184,415	9,888,137
Belgium	7 March 2016	26 June 2025	0.38%	5,981,943	36,441
Congo	19 May 2014	26 June 2025	0.00%	10,223	0
Croatia	16 February 2021	26 June 2025	0.07%	1,042,735	2,814
Denmark	14 June 2017	26 June 2025	1.45%	22,781,376	83,233
Estonia	25 April 2019	26 June 2025	0.02%	358,182	2,422
France	2 July 2014	26 June 2025	0.57%	8,970,361	5,486
Germany	16 July 2019	26 June 2025	0.52%	8,220,946	1,534
Ghana	18 November 2019	26 June 2025	0.00%	65,255	1,658
India	28 November 2019	26 June 2025	0.72%	11,335,480	12,210,082
Japan	27 March 2019	26 June 2025	1.99%	31,288,121	13,343
Liberia	26 June 2023	26 June 2025	15.69%	246,408,166	0
Luxembourg	29 July 2022	26 June 2025	0.08%	1,226,730	0
Malta	14 May 2019	26 June 2025	4.91%	77,154,742	342
Netherlands (Kingdom of the)*	20 February 2019	26 June 2025	0.43%	6,679,318	11,288
Norway	26 June 2013	26 June 2025	1.28%	20,129,896	17,827
Panama	19 September 2016	26 June 2025	15.63%	245,453,297	8,559
Portugal	28 March 2023	26 June 2025	1.32%	20,712,136	3,095
Sao Tome and Principe	15 August 2022	26 June 2025	0.00%	2,510	0
Serbia	22 March 2019	26 June 2025	-	-	0
Spain	3 June 2021	26 June 2025	0.18%	2,821,126	21,392
Türkiye	31 January 2019	26 June 2025	0.36%	5,715,562	1,540,800
		<b>Totals</b>	<b>45.81%</b>	<b>719,542,520**</b>	<b>23,848,453***</b>

\* Extended to Bonaire, Sint Eustatius and Saba on 20 February 2023

\*\*  $719,542,520 / 1,570,741,844$  (world tonnage) = 45.81%

\*\*\*  $23,848,453 / 719,542,520 = 3.31\%$



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

SR/CONF/45  
19 May 2009  
Original: ENGLISH

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

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

**Text adopted by the Conference**

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

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

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**ANNEX****HONG KONG INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS, 2009****THE PARTIES TO THIS CONVENTION,**

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

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

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

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

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

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

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

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

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

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

**HAVE AGREED** as follows:

## **ARTICLE 1**

### **General obligations**

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

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

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

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

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

## **ARTICLE 2**

### **Definitions**

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

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

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

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

4 "Organization" means the International Maritime Organization.

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

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

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

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

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

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

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

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

### **ARTICLE 3**

#### **Application**

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

- .1 ships entitled to fly the flag of a Party or operating under its authority;
- .2 Ship Recycling Facilities operating under the jurisdiction of a Party.

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

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

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

#### **ARTICLE 4**

##### **Controls related to Ship Recycling**

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

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

#### **ARTICLE 5**

##### **Survey and certification of ships**

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

#### **ARTICLE 6**

##### **Authorization of Ship Recycling Facilities**

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

#### **ARTICLE 7**

##### **Exchange of information**

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

#### **ARTICLE 8**

##### **Inspection of ships**

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

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

- .1 the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate, and/or Part I of the Inventory of Hazardous Materials; or
- .2 there is no procedure implemented on board the ship for the maintenance of Part I of the Inventory of Hazardous Materials;

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

## **ARTICLE 9**

### **Detection of violations**

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

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

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

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

## **ARTICLE 10**

### **Violations**

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

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

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

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

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

- .1 cause proceedings to be taken in accordance with its law; or
- .2 furnish to the Administration of the ship such information and evidence as may be in its possession that a violation has occurred.

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

## **ARTICLE 11**

### **Undue delay or detention of ships**

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

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

## **ARTICLE 12**

### **Communication of information**

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

- .1 a list of Ship Recycling Facilities authorized in accordance with this Convention and operating under the jurisdiction of that Party;
- .2 contact details for the Competent Authority(ies), including a single contact point, for that Party;
- .3 a list of the recognized organizations and nominated surveyors which are authorized to act on behalf of that Party in the administration of matters relating to the control of Ship Recycling in accordance with this Convention, and the specific responsibilities and conditions of the authority delegated to the recognized organizations or nominated surveyors;
- .4 an annual list of ships flying the flag of that Party to which an International Ready for Recycling Certificate has been issued, including the name of the Recycling Company and location of the Ship Recycling Facility as shown on the certificate;
- .5 an annual list of ships recycled within the jurisdiction of that Party;
- .6 information concerning violations of this Convention; and
- .7 actions taken towards ships and Ship Recycling Facilities under the jurisdiction of that Party.

## **ARTICLE 13**

### **Technical assistance and co-operation**

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

- .1 to train personnel;
- .2 to ensure the availability of relevant technology, equipment and facilities;
- .3 to initiate joint research and development programmes; and
- .4 to undertake other actions aimed at the effective implementation of this Convention and of guidelines developed by the Organization related thereto.

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



## **ARTICLE 14**

### **Dispute settlement**

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

## **ARTICLE 15**

### **Relationship with international law and other international agreements**

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

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

## **ARTICLE 16**

### **Signature, ratification, acceptance, approval and accession**

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

2 States may become Parties to this Convention by:

- .1 signature not subject to ratification, acceptance, or approval; or
- .2 signature subject to ratification, acceptance, or approval, followed by ratification, acceptance or approval; or
- .3 accession.

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

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

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

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

## **ARTICLE 17**

### **Entry into force**

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

- .1 not less than 15 States have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 16;
- .2 the combined merchant fleets of the States mentioned in paragraph 1.1 constitute not less than 40 per cent of the gross tonnage of the world's merchant shipping; and
- .3 the combined maximum annual ship recycling volume of the States mentioned in paragraph 1.1 during the preceding 10 years constitutes not less than 3 per cent of the gross tonnage of the combined merchant shipping of the same States.

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

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

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

## **ARTICLE 18**

### **Amendments**

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

2 Amendments after consideration within the Organization:

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

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

- .2 An amendment proposed and circulated as above shall be referred to the Committee for consideration. Parties, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Committee for consideration and adoption of the amendment.
- .3 Amendments shall be adopted by a two-thirds majority of the Parties present and voting in the Committee, on condition that at least one-third of the Parties shall be present at the time of voting.
- .4 Amendments adopted in accordance with subparagraph 3 shall be communicated by the Secretary-General to the Parties for acceptance.
- .5 An amendment shall be deemed to have been accepted in the following circumstances:
  - .5.1 An amendment to an article of this Convention shall be deemed to have been accepted on the date on which two-thirds of the Parties have notified the Secretary-General of their acceptance of it.
  - .5.2 An amendment to the Annex shall be deemed to have been accepted at the end of a period to be determined by the Committee at the time of its adoption, which period shall not be less than ten months after the date of adoption. However, if by that date more than one-third of the Parties notify the Secretary-General that they object to the amendment, it shall be deemed not to have been accepted.
- .6 An amendment shall enter into force under the following conditions:
  - .6.1 An amendment to an article of this Convention shall enter into force, for those Parties that have declared that they have accepted it, six months after the date on which it is deemed to have been accepted in accordance with subparagraph .5.1.
  - .6.2 An amendment to the Annex shall enter into force with respect to all Parties six months after the date on which it is deemed to have been accepted, except for any Party that has:
    - .6.2.1 notified its objection to the amendment in accordance with subparagraph .5.2 and that has not withdrawn such objection; or
    - .6.2.2 notified the Secretary-General, prior to the entry into force of such amendment, that the amendment shall enter into force for it only after a subsequent notification of its acceptance.
  - .6.3 A Party that has notified an objection under subparagraph .6.2.1 may subsequently notify the Secretary-General that it accepts the amendment. Such amendment shall enter into force for such Party six months after the

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

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

3 Amendment by a Conference:

- .1 Upon the request of a Party concurred in by at least one-third of the Parties, the Organization shall convene a Conference of Parties to consider amendments to this Convention.
- .2 An amendment adopted by such a Conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary-General to all Parties for acceptance.
- .3 Unless the Conference decides otherwise, the amendment shall be deemed to have been accepted and shall enter into force in accordance with the procedures specified in paragraphs 2.5 and 2.6 respectively.

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

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

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

- .1 any amendment that enters into force and the date of its entry into force generally and for each Party; and
- .2 any notification made under this Article.

## **ARTICLE 19**

### **Denunciation**

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

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

## **ARTICLE 20**

### **Depositary**

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

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

- .1 inform all States that have signed this Convention, or acceded thereto, of:
  - .1.1 each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;
  - .1.2 the date of entry into force of this Convention;
  - .1.3 the deposit of any instrument of denunciation from this Convention, together with the date on which it was received and the date on which the denunciation takes effect; and
  - .1.4 other declarations and notifications received pursuant to this Convention; and
- .2 as soon as this Convention enters into force, transmit the text thereof to the Secretariat of the United Nations, for registration and publication in accordance with Article 102 of the Charter of the United Nations.

## **ARTICLE 21**

### **Languages**

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

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

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

\* \* \*

ANNEX

**REGULATIONS FOR SAFE AND ENVIRONMENTALLY SOUND  
RECYCLING OF SHIPS**

**CHAPTER 1 – GENERAL PROVISIONS**

**Regulation 1 – Definitions**

For the purposes of this Annex:

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

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

3 “Existing ship” means a ship which is not a new ship.

4 “New ship” means a ship:

- .1 for which the building contract is placed on or after the entry into force of this Convention; or
- .2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after six months after the entry into force of this Convention; or
- .3 the delivery of which is on or after 30 months after the entry into force of this Convention.

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

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

- .1 the oxygen content of the atmosphere and the concentration of flammable vapours are within safe limits;
- .2 any toxic materials in the atmosphere are within permissible concentrations; and

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

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

- .1 a safe, non-explosive condition, including gas-free status, exists for the use of electric arc or gas welding equipment, cutting or burning equipment or other forms of naked flame, as well as heating, grinding, or spark generating operations;
- .2 Safe-for-entry requirements of regulation 1.6 are met;
- .3 existing atmospheric conditions will not change as a result of the hot work; and
- .4 all adjacent spaces have been cleaned, or inerted, or treated sufficiently to prevent the start or spread of fire.

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

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

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

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

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

## **Regulation 2 – General applicability**

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

## **Regulation 3 – Relationship with other standards, recommendations and guidance**

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

## **CHAPTER 2 – REQUIREMENTS FOR SHIPS**

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

#### **Regulation 4 – Controls of ships' Hazardous Materials**

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

- .1 shall prohibit and/or restrict the installation or use of Hazardous Materials listed in Appendix 1 on ships entitled to fly its flag or operating under its authority; and
- .2 shall prohibit and/or restrict the installation or use of such materials on ships, whilst in its ports, shipyards, ship repair yards, or offshore terminals,

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

#### **Regulation 5 – Inventory of Hazardous Materials**

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

- .1 identify as Part I, Hazardous Materials listed in Appendices 1 and 2 to this Convention and contained in ship's structure or equipment, their location and approximate quantities; and
- .2 clarify that the ship complies with regulation 4.

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

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

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



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

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

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

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

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

- .1 The technical group's review shall include:
  - .1.1 an evaluation of the association between the Hazardous Material in question and the likelihood, in the context of this Convention, that it will lead to significant adverse effects on human health or the environment based on the submitted data or other relevant data brought to the attention of the group;
  - .1.2 an evaluation of the potential risk reduction attributable to the proposed control measures and any other control measures that may be considered by the technical group;
  - .1.3 consideration of available information on the technical feasibility of control measures;
  - .1.4 consideration of available information on other effects arising from the introduction of such control measures relating to:
    - the environment;
    - human health and safety including that of seafarers and workers; and
    - the cost to international shipping and other relevant sectors.
  - .1.5 consideration of the availability of suitable alternatives to the Hazardous Material to be controlled, including a consideration of the potential risks of alternatives;

- .1.6 consideration of the risks posed by the Hazardous Material during the recycling process; and
- .1.7 consideration of suitable threshold values and any useful or necessary exemptions.
- .2 If the technical group finds that the Hazardous Material in question is likely, in the context of this Convention, to lead to significant adverse effects on human health or the environment, lack of full scientific certainty shall not be used as a reason to prevent the group from proceeding with an evaluation of the proposal.
- .3 The technical group's report shall be in writing and shall take into account each of the evaluations and considerations referred to in subparagraph .1, except that the technical group may decide not to proceed with the evaluations and considerations described in subparagraphs .1.2 to .1.7 if it determines after the evaluation in subparagraph .1.1 that the proposal does not warrant further consideration.
- .4 The technical group's report shall include, *inter alia*, a recommendation on whether international controls pursuant to this Convention are warranted on the Hazardous Material in question, on the suitability of the specific control measures suggested in the comprehensive proposal, or on other control measures which it believes to be more suitable.

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

## **Regulation 7 – Technical Groups**

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

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

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

## **Part B – Preparation for Ship Recycling**

### **Regulation 8 – General requirements**

Ships destined to be recycled shall:

- .1 only be recycled at Ship Recycling Facilities that are:
  - .1 authorized in accordance with this Convention; and
  - .2 fully authorized to undertake all the ship recycling which the Ship Recycling Plan specifies to be conducted by the identified Ship Recycling Facility(ies);
- .2 conduct operations in the period prior to entering the Ship Recycling Facility in order to minimize the amount of cargo residues, remaining fuel oil, and wastes remaining on board;
- .3 in the case of a tanker, arrive at the Ship Recycling Facility with cargo tanks and pump room(s) in a condition that is ready for certification as Safe-for-entry, or Safe-for-hot work, or both, according to national laws, regulations and policies of the Party under whose jurisdiction the Ship Recycling Facility operates;
- .4 provide to the Ship Recycling Facility all available information relating to the ship for the development of the Ship Recycling Plan required by regulation 9;
- .5 complete the Inventory required by regulation 5; and
- .6 be certified as ready for recycling by the Administration or organization recognized by it, prior to any recycling activity taking place.

### **Regulation 9 – Ship Recycling Plan**

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

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

- .3 include information concerning *inter alia*, the establishment, maintenance, and monitoring of Safe-for-entry and Safe-for-hot work conditions and how the type and amount of materials including those identified in the Inventory of Hazardous Materials will be managed;
- .4 in accordance with the declaration deposited pursuant to Article 16.6, be either explicitly or tacitly approved by the Competent Authority authorizing the Ship Recycling Facility. The Competent Authority shall send written acknowledgement of receipt of the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration within three (3) working days of its receipt in accordance with regulation 24. Thereafter:
  - .1 where a Party requires explicit approval of the Ship Recycling Plan, the Competent Authority shall send written notification of its decision to approve or deny the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration; and
  - .2 where a Party requires tacit approval of the Ship Recycling Plan, the acknowledgment of receipt shall specify the end date of a 14-day review period. The Competent Authority shall notify any written objection to the Ship Recycling Plan to the Ship Recycling Facility, Ship Owner and Administration within this 14-day review period. Where no such written objection has been notified, the Ship Recycling Plan shall be deemed to be approved.
- .5 once approved in accordance with paragraph .4, be made available for inspection by the Administration, or any nominated surveyors or organization recognized by it; and
- .6 where more than one Ship Recycling Facility is used, identify the Ship Recycling Facilities to be used and specify the recycling activities and the order in which they occur at each authorized Ship Recycling Facility.

## **Part C – Surveys and certification**

### **Regulation 10 – Surveys**

- 1 Ships to which this Convention applies shall be subject to the surveys specified below:
  - .1 an initial survey before the ship is put in service, or before the International Certificate on Inventory of Hazardous Materials is issued. This survey shall verify that Part I of the Inventory required by regulation 5 is in accordance with the requirements of this Convention;
  - .2 a renewal survey at intervals specified by the Administration, but not exceeding five years. This survey shall verify that Part I of the Inventory of Hazardous Materials required by regulation 5 complies with the requirements of this Convention;

- .3 an additional survey, either general or partial, according to the circumstances, may be made at the request of the shipowner after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material. The survey shall be such as to ensure that any such change, replacement, or significant repair has been made in the way that the ship continues to comply with the requirements of this Convention, and that Part I of the Inventory is amended as necessary; and
- .4 a final survey prior to the ship being taken out of service and before the recycling of the ship has started. This survey shall verify:
  - .1 that the Inventory of Hazardous Materials as required by regulation 5.4 is in accordance with the requirements of this Convention taking into account the guidelines developed by the Organization;
  - .2 that the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials as required by regulation 5.4 and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions; and
  - .3 that the Ship Recycling Facility(ies) where the ship is to be recycled holds a valid authorization in accordance with this Convention.

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

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

- .1 require a ship that they survey to comply with the provisions of this Convention; and
- .2 carry out surveys and inspections if requested by the appropriate authorities of a port State that is a Party.

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

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

## **Regulation 11 – Issuance and endorsement of certificates**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### **Regulation 13 – Form of the certificates**

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

## **Regulation 14 – Duration and validity of the certificates**

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

- .1 if the condition of the ship does not correspond substantially with the particulars of the certificate, including where Part I of the Inventory of Hazardous Materials is not properly maintained and updated, reflecting changes in ship structure and equipment, in accordance with the guidelines developed by the Organization;
- .2 upon transfer of the ship to the flag of another State. A new certificate shall only be issued when the Party issuing the new certificate is fully satisfied that the ship is in compliance with the requirements of regulation 10. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports;
- .3 if the renewal survey is not completed within the periods specified under regulations 10.1 and 11; or
- .4 if the certificate is not endorsed in accordance with regulation 11 or 12.

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

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

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

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

## **CHAPTER 3 – REQUIREMENTS FOR SHIP RECYCLING FACILITIES**

### **Regulation 15 – Controls on Ship Recycling Facilities**

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

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



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

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

#### **Regulation 16 – Authorization of Ship Recycling Facilities**

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

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

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

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

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

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

#### **Regulation 17 – General requirements**

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

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

- .1 only accept ships that:
  - .1 comply with this Convention; or
  - .2 meet the requirements of this Convention;
- .2 only accept ships which they are authorized to recycle; and
- .3 have the documentation of its authorization available if such documentation is requested by a shipowner that is considering recycling a ship at that Ship Recycling Facility.

### **Regulation 18 – Ship Recycling Facility Plan**

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

- .1 a policy ensuring workers' safety and the protection of human health and the environment, including the establishment of objectives that lead to the minimization and elimination to the extent practicable of the adverse effects on human health and the environment caused by Ship Recycling;
- .2 a system for ensuring implementation of the requirements set out in this Convention, the achievement of the goals set out in the policy of the Recycling Company, and the continuous improvement of the procedures and standards used in the Ship Recycling operations;
- .3 identification of roles and responsibilities for employers and workers when conducting Ship Recycling operations;
- .4 a programme for providing appropriate information and training of workers for the safe and environmentally sound operation of the Ship Recycling Facility;
- .5 an emergency preparedness and response plan;
- .6 a system for monitoring the performance of Ship Recycling;
- .7 a record-keeping system showing how Ship Recycling is carried out;
- .8 a system for reporting discharges, emissions, incidents and accidents causing damage, or with the potential of causing damage, to workers' safety, human health and the environment; and
- .9 a system for reporting occupational diseases, accidents, injuries and other adverse effects on workers' safety and human health,

taking into account guidelines developed by the Organization.

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

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

- .1 prevent explosions, fires, and other unsafe conditions by ensuring that Safe-for-hot work conditions and procedures are established, maintained and monitored throughout Ship Recycling;
- .2 prevent harm from dangerous atmospheres and other unsafe conditions by ensuring that Safe-for-entry conditions and procedures are established, maintained, and monitored in ship spaces, including confined spaces and enclosed spaces, throughout Ship Recycling;
- .3 prevent other accidents, occupational diseases and injuries or other adverse effects on human health and the environment; and
- .4 prevent spills or emissions throughout Ship Recycling which may cause harm to human health and/or the environment,

taking into account guidelines developed by the Organization.

## **Regulation 20 – Safe and environmentally sound management of Hazardous Materials**

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

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

- .1 hazardous liquids, residues and sediments;
- .2 substances or objects containing heavy metals such as lead, mercury, cadmium and hexavalent chromium;
- .3 paints and coatings that are highly flammable and/or lead to toxic releases;
- .4 asbestos and materials containing asbestos;
- .5 PCB and materials containing PCBs, ensuring that heat inducing equipment is avoided during such operations;
- .6 CFCs and halons; and
- .7 other Hazardous Materials not listed above and that are not a part of the ship structure.

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

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

### **Regulation 21 – Emergency preparedness and response**

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

- .1 ensure that the necessary equipment and procedures to be followed in the case of an emergency are in place, and that drills are conducted on a regular basis;
- .2 ensure that the necessary information, internal communication and coordination are provided to protect all people and the environment in the event of an emergency at the Ship Recycling Facility;
- .3 provide for communication with, and information to, the relevant Competent Authority(ies), the neighbourhood and emergency response services;
- .4 provide for first-aid and medical assistance, fire-fighting and evacuation of all people at the Ship Recycling Facility, pollution prevention; and
- .5 provide for relevant information and training to all workers of the Ship Recycling Facility, at all levels and according to their competence, including regular exercises in emergency prevention, preparedness and response procedures.

### **Regulation 22 – Worker safety and training**

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

- .1 ensuring the availability, maintenance and use of personal protective equipment and clothing needed for all Ship Recycling operations;
- .2 ensuring that training programmes are provided to enable workers to safely undertake all Ship Recycling operations they are tasked to do; and
- .3 ensuring that all workers at the Ship Recycling Facility have been provided with appropriate training and familiarization prior to performing any Ship Recycling operation.

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

- .1 head protection;
- .2 face and eye protection;
- .3 hand and foot protection;
- .4 respiratory protective equipment;
- .5 hearing protection;
- .6 protectors against radioactive contamination;
- .7 protection from falls; and
- .8 appropriate clothing.

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

- .1 cover all workers including contractor personnel and employees in the Ship Recycling Facility;
- .2 be conducted by Competent persons;
- .3 provide for initial and refresher training at appropriate intervals;
- .4 include participants' evaluation of their comprehension and retention of the training;
- .5 be reviewed periodically and modified as necessary; and
- .6 be documented.

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

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

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

## **CHAPTER 4 – REPORTING REQUIREMENTS**

### **Regulation 24 – Initial notification and reporting requirements**

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

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

- .1 name of the State whose flag the ship is entitled to fly;
- .2 date on which the ship was registered with that State;
- .3 ship's identification number (IMO number);
- .4 hull number on new-building delivery;
- .5 name and type of the ship;
- .6 port at which the ship is registered;
- .7 name and address of the Shipowner as well as the IMO registered owner identification number;
- .8 name and address of the company as well as the IMO company identification number;
- .9 name of all classification society(ies) with which the ship is classed;
- .10 ship's main particulars (Length overall (LOA), Breadth (Moulded), Depth (Moulded), Lightweight, Gross and Net tonnage, and engine type and rating);
- .11 Inventory of Hazardous Materials; and
- .12 draft ship recycling plan for approval pursuant to regulation 9.

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

### **Regulation 25 – Reporting upon completion**

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

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

## APPENDIX 1

### CONTROLS OF HAZARDOUS MATERIALS

Hazardous Material	Definitions	Control measures
Asbestos	Materials containing asbestos	For all ships, new installation of materials which contain asbestos shall be prohibited.
Ozone-depleting substances	<p>Ozone-depleting substances means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A,B,C or E to the said Protocol in force at the time of application or interpretation of this Annex.</p> <p>Ozone-depleting substances that may be found on board ship include, but are not limited to:</p> <p>Halon 1211 Bromochlorodifluoromethane Halon 1301 Bromotrifluoromethane Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2) CFC-11 Trichlorofluoromethane CFC-12 Dichlorodifluoromethane CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane CFC-115 Chloropentafluoroethane</p>	New installations which contain ozone-depleting substances shall be prohibited on all ships, except that new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020.
Polychlorinated biphenyls (PCB)	“Polychlorinated biphenyls” means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to ten chlorine atoms	For all ships, new installation of materials which contain Polychlorinated biphenyls shall be prohibited.
Anti-fouling compounds and systems	Anti-fouling compounds and systems regulated under Annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention) in force at the time of application or interpretation of this Annex.	<ol style="list-style-type: none"> <li>1. No ship may apply anti-fouling systems containing organotin compounds as a biocide or any other anti-fouling system whose application or use is prohibited by the AFS Convention.</li> <li>2. No new ships or new installations on ships shall apply or employ anti-fouling compounds or systems in a manner inconsistent with the AFS Convention.</li> </ol>



## APPENDIX 2

### MINIMUM LIST OF ITEMS FOR THE INVENTORY OF HAZARDOUS MATERIALS

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

### APPENDIX 3

#### FORM OF THE INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

##### INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

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

*(Official seal)*

*(State)*

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

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

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

#### ***Particulars of the Ship***

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

***Particulars of Part I of the Inventory of Hazardous Materials***

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

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

THIS IS TO CERTIFY:

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

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

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

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

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

(Seal or stamp of the authority, as appropriate)

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

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

Signed: .....

*(Signature of duly authorized official)*

Place:

Date: (dd/mm/yyyy)

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

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

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

Signed: .....

*(Signature of duly authorized official)*

Place: .....

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

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

---

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

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

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

Signed: .....

*(Signature of duly authorized official)*

Place: .....

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

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

**ENDORSEMENT FOR ADDITIONAL SURVEY\***

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

Signed: .....

*(Signature of duly authorized official)*

Place: .....

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

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

---

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

\*\* Delete as appropriate.

## APPENDIX 4

### FORM OF THE INTERNATIONAL READY FOR RECYCLING CERTIFICATE

#### INTERNATIONAL READY FOR RECYCLING CERTIFICATE

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

*(Official seal)*

*(State)*

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

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

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

#### ***Particulars of the Ship***

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

***Particulars of the Ship Recycling Facility(ies)***

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

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

***Particulars of the Inventory of Hazardous Materials***

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

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

***Particulars of the Ship Recycling Plan***

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

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

THIS IS TO CERTIFY:

- 1 that the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention;
- 2 that the ship has a valid Inventory of Hazardous Materials in accordance with regulation 5 of the Annex to the Convention;
- 3 that the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials as required by regulation 5.4 and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions; and
- 4 that the Ship Recycling Facility(ies) where this ship is to be recycled holds a valid authorization in accordance with the Convention.

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

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

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

(Seal or stamp of the authority, as appropriate)



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

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

from the port of: .....

to the port of: .....

Signed: .....

*(Signature of duly authorized official)*

Place: .....

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

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

---

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

## APPENDIX 5

### FORM OF THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

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

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

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

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

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

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

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

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

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

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

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

(Seal or stamp of the authority, as appropriate)

**SUPPLEMENT TO:**

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

Notes:

- 1 This record shall be permanently attached to the DASR. The DASR shall be available at the Ship Recycling Facility at all times.
- 2 All procedures, plans and other documents produced by the Ship Recycling Facility and required under the terms to which the DASR has been issued shall be available in the working language of the Ship Recycling Facility and in either English, French or Spanish.
- 3 The authorization is subject to the limitations defined by this supplement.

**1 GENERAL TERMS**

**1.1 Requirements of the Convention**

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

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

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

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

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

## **1.2 Acceptance of ships**

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

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

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

## **1.4 Management of Hazardous Materials**

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

## **1.5 Map and location of Ship Recycling operations**

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

# **2 CAPABILITY OF SHIP RECYCLING FACILITY**

## **2.1 Size of ships**

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

<b>Maximum Size</b>		<b>Other Limitations</b>
Length		
Breadth		
Lightweight		

## 2.2 Safe and Environmentally Sound Management of Hazardous Materials

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

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

- Notes: \*1 Process means the processing of Hazardous Materials in the Ship Recycling Facility, such as:
- a. incineration of Hazardous Materials;
  - b. reclamation of Hazardous Materials; and
  - c. treatment of oily residues.
- \*2 If Yes (Y), indicate in the Ship Recycling Facility Plan the responsible personnel authorized to carry out the removal, with the certificate number or other relevant information.
- \*3 If No (N), describe in the Ship Recycling Plan where the Hazardous Materials are to be processed/disposed.
- \*4 These Hazardous Materials are specified in Appendices 1 and 2 and regulation 20 of the Convention.

## APPENDIX 6

### FORM OF REPORT OF PLANNED START OF SHIP RECYCLING

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

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

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

.....  
(Full designation of country)

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

.....  
(Place of authorization)

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

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

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

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

.....  
(Full designation of country)

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

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

is enclosed.

Signed .....

## APPENDIX 7

### FORM OF THE STATEMENT OF COMPLETION OF SHIP RECYCLING

#### STATEMENT OF COMPLETION OF SHIP RECYCLING

This document is a statement of completion of Ship Recycling for

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

#### **Particulars of the Ship as received for recycling**

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

THIS CONFIRMS THAT:

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

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

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

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

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

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



**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<sup>1</sup>**

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.

---

<sup>1</sup> 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<sup>2</sup> 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.

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<sup>2</sup> 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<sup>3</sup> for materials of liquid or gases, m<sup>2</sup> 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.<sup>3</sup> 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

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<sup>3</sup> 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% <sup>4</sup>
A-2	Polychlorinated biphenyls (PCBs)		x			50 mg/kg <sup>5</sup>
A-3	Ozone-depleting substances	CFCs	x			no threshold value <sup>6</sup>
		Halons	x			
		Other fully halogenated CFCs	x			
		Carbon tetrachloride	x			
		1,1,1-Trichloroethane (Methyl chloroform)	x			
		Hydrochlorofluorocarbons	x			
		Hydrobromofluorocarbons	x			
		Methyl bromide	x			
A-4	Anti-fouling systems containing organotin compounds as a biocide		x			2,500 mg total tin/kg <sup>7</sup>
	Anti-fouling systems containing cybutryne		x			1,000 mg/kg <sup>8</sup>

<sup>4</sup> 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 (UNSCGHS), 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.

<sup>5</sup> 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.

<sup>6</sup> "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.

<sup>7</sup> This threshold value is based on the 2022 *Guidelines for brief sampling of anti-fouling systems on ships* (resolution MEPC.356(78)).

<sup>8</sup> 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 <sup>9</sup>
B-2	Hexavalent chromium and hexavalent chromium compounds	x			1,000 mg/kg <sup>8</sup>
B-3	Lead and lead compounds	x			1,000 mg/kg <sup>8</sup>
B-4	Mercury and mercury compounds	x			1,000 mg/kg <sup>8</sup>
B-5	Polybrominated biphenyl (PBBs)	x			50 mg/kg <sup>10</sup>
B-6	Polybrominated diphenyl ethers (PBDEs)	x			1,000 mg/kg <sup>8</sup>
B-7	Polychlorinated naphthalenes (more than 3 chlorine atoms)	x			50mg/kg <sup>11</sup>
B-8	Radioactive substances	x			no threshold value <sup>12</sup>
B-9	Certain short-chain chlorinated paraffins (alkanes, C10-C13, chloro)	x			1% <sup>13</sup>

<sup>9</sup> The Organization set this as the threshold value referring to the Restriction of Hazardous Substances (RoHS Directive 2011/65/EU, Annex II).

<sup>10</sup> 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.

<sup>11</sup> 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.

<sup>12</sup> 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.

<sup>13</sup> 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 <sub>2</sub>			x
C-23			Perfluorocarbons (PFCs)			x
C-24			Methane			x
C-25			Hydrofluorocarbon (HFCs)			x
C-27			Nitrous oxide (N <sub>2</sub> O)			x
C-28			Sulphur hexafluoride (SF <sub>6</sub> )			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 <sup>14</sup>		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<sup>15</sup>**

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

<sup>14</sup> 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.

<sup>15</sup> 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<sup>16</sup>

#### 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	

<sup>16</sup> 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	<del>Diesel engine, xx Co., xx #150</del>	<del>Engine room</del>	<del>Lead</del> Cadmium	<del>Bearing</del> Starter 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: <sup>60</sup> 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 <sup>1</sup>	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 <sup>3</sup>	
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 <sup>3</sup>	
		Sediments	250.00	kg	

<sup>1</sup> 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 <sup>1</sup>	Name of item (classification in appendix 1)	Unit quantity		Figure		Approximate quantity		Remarks <sup>2</sup>
								m <sup>3</sup>	
								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.

- <sup>1</sup> 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.
- <sup>2</sup> 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 <sup>3</sup>	
		Deck machinery hydraulic oil system	Upper deck and bosun store	200.00	m <sup>3</sup>	
		Steering gear hydraulic oil system	Steering gear room	0.55	m <sup>3</sup>	
2	Lubricating oil	Main engine system	Engine-room	0.45	m <sup>3</sup>	
3	Boiler water treatment	Boiler	Engine-room	0.20	m <sup>3</sup>	

### 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 <sup>17</sup>	Name of item	Quantity	Remarks
1	Accommodation	Refrigerators	1	
2	Accommodation	Personal computers	2	

<sup>17</sup> 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).

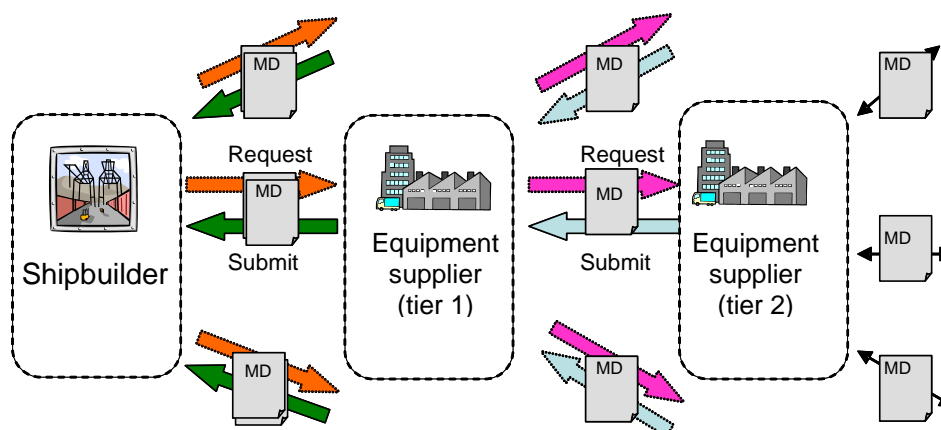


Figure 1 – Process of MD (and SDoC) collection showing involvement of supply chain

### 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*

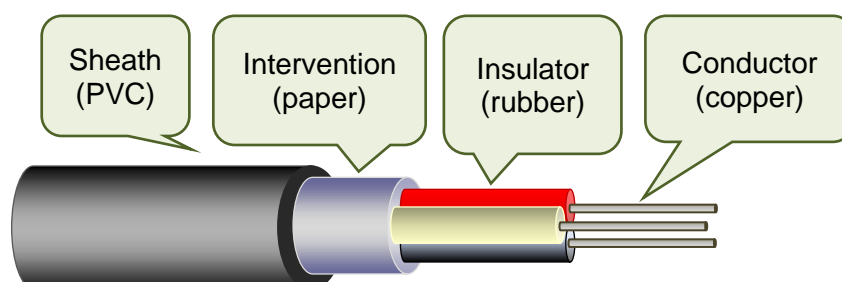
If one or more materials listed in table A are found to be present in concentrations above the specified threshold value according to the MD, the products which contain these materials shall not be installed on a ship. However, if the materials are used in a product in accordance with an exemption specified 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<sup>3</sup> 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.

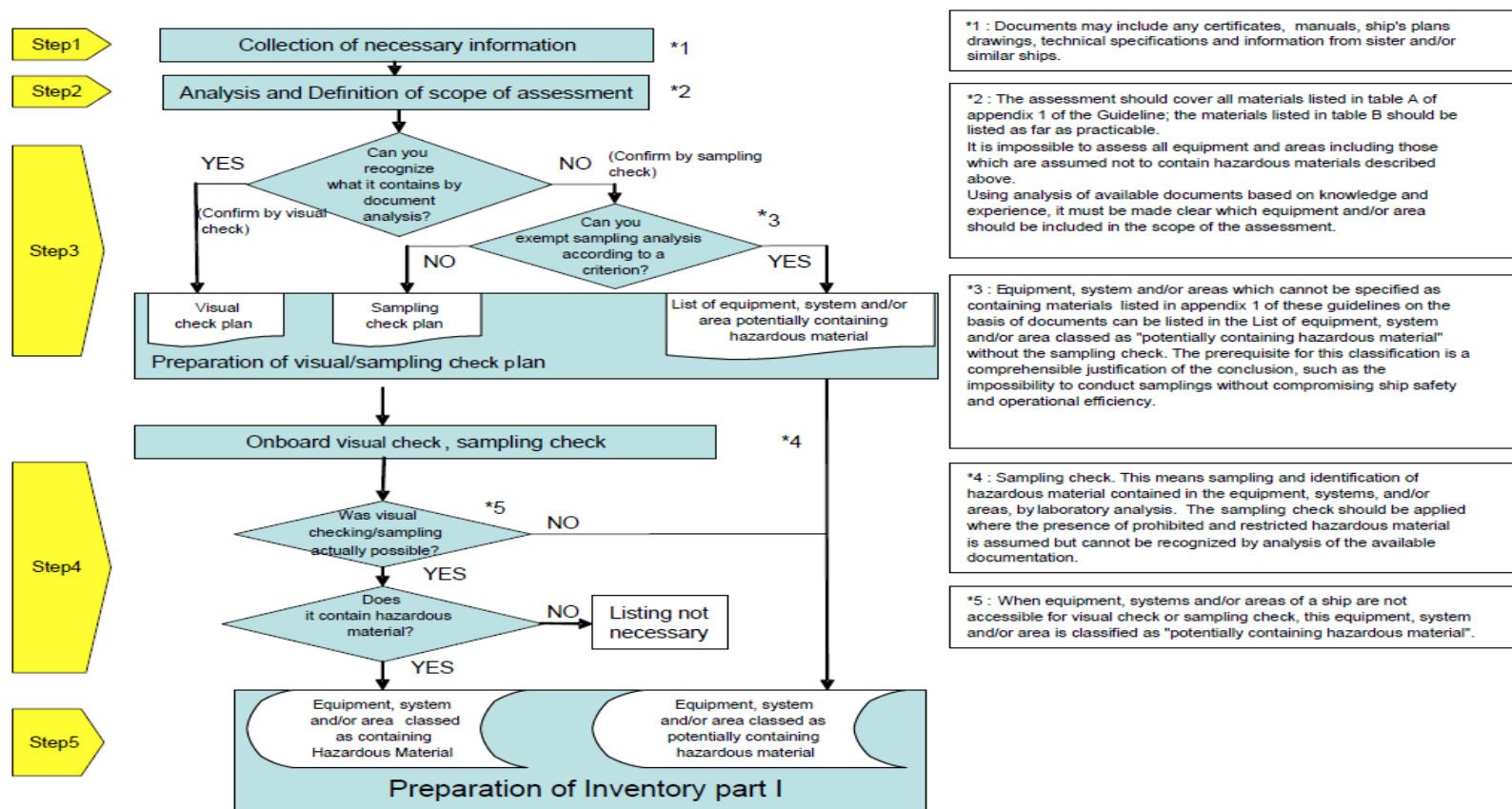
5.3.2.2 A typical description of a pipe system is shown in table 4.

**Table 4 – Example of description of a pipe system**

<b>No.</b>	<b>Name of equipment and machinery</b>	<b>Location</b>	<b>Materials (classification in appendix 1)</b>	<b>Parts where used</b>	<b>Approximate quantity</b>		<b>Remarks</b>
	Ballast water system	Engine-room, Hold parts					

## APPENDIX 4

### FLOW DIAGRAM FOR DEVELOPING PART I OF THE INVENTORY FOR EXISTING SHIPS



## **APPENDIX 5**

### **EXAMPLE OF THE DEVELOPMENT PROCESS FOR PART I OF THE INVENTORY FOR EXISTING SHIPS**

#### **1 INTRODUCTION**

1.1 In order to develop part I of the Inventory of Hazardous Materials for existing ships, documents of the individual ship as well as the knowledge and experience of specialist personnel (experts) is required. An example of the development process for part I of the Inventory of Hazardous Materials for existing ships is useful to understand the basic steps as laid out in the guidelines and to ensure a unified application. However, attention should be paid to variations in different types of ships.<sup>18</sup>

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)

---

<sup>18</sup> 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:

<b>Structure and/or equipment</b>	<b>Component</b>
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				3000m <sup>2</sup>		Unknown AF	Unknown			
[Inventory part I-1.2]													
1	A	Asbestos	Lower deck	Main engine	Exh. pipe packing	0.25	14		Diesel Co.	Y			M-100
2	A	Asbestos	3rd deck	Aux.boiler	Lagging		12		Unknown lagging	Unknown			M-300
3	A	Asbestos	Engine room	Piping/flange	Packing					PCHM			
4	A	HCFC	2nd deck	Ref. provision plant	Refrigerant(R22)	20.00	1		Reito Co.	Y			Maker's dwg
5	B	Lead	Nav. Br. deck	Batteries		6	16		Denchi Co.	Y			E-300
[Inventory part I-1.3]													
1	A	Asbestos	Upper deck	Back deck ceilings	Engine room ceiling		20m <sup>2</sup>		Unknown ceiling	Unknown			O-25

#### Notes

- \*1 Hazardous materials: 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 <sup>2</sup>		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 <sup>2</sup>		Unknown ceiling	Unknown	S		O-25

#### Notes

- \*1 Hazardous materials: 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 x xx.xx x 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: <a href="mailto:abcdefg@hijk.co.net">abcdefg@hijk.co.net</a>
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

<b>Listing for equipment, system and/or area for visual check</b>
See attached "Analysis and definition of scope of investigation for sample ship"

<b>List of equipment, system and/or area for sampling check</b>				
<b>Location</b>	<b>Equipment, machinery and/or zone</b>	<b>Name of parts</b>	<b>Materials</b>	<b>Result of doc. checking</b>
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"				

<b>List of equipment, system and/or area classed as PCHM</b>				
<b>Location</b>	<b>Equipment, machinery and/or zone</b>	<b>Name of part</b>	<b>Material</b>	<b>Result of doc. checking</b>
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 <sup>2</sup>	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 <sup>2</sup>	3.80	Unknown ceiling	Unknown	S	Y	O-25

#### Notes

\*1 Hazardous materials: 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

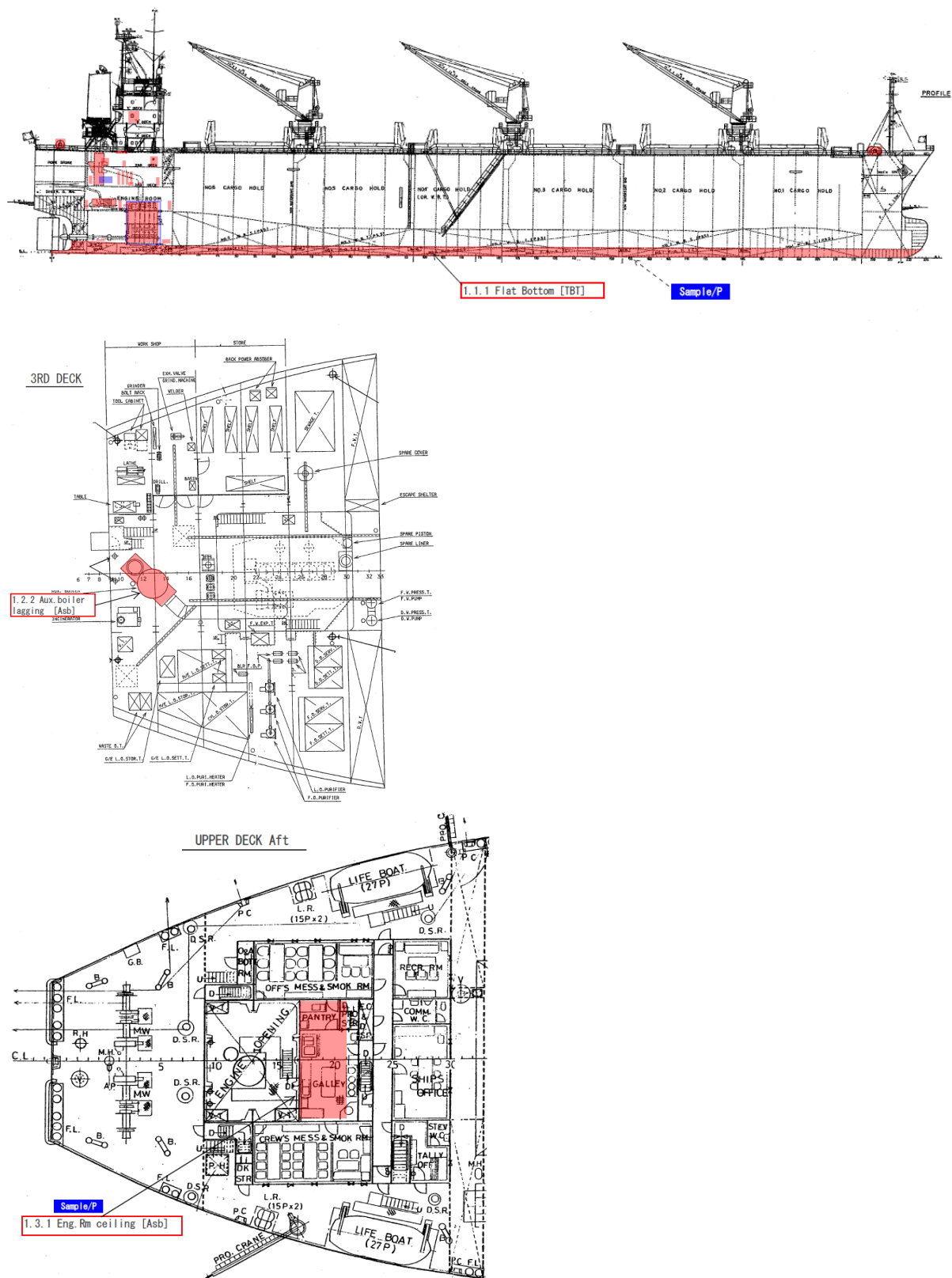
No.	Name of equipment and machinery	Location *1	Materials (classification in appendix 1)	Parts where used	Approximate quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	kg	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	kg	PCHM (potentially containing hazardous material)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

This materials information shows the amount of hazardous materials contained in 

1	Unit
---	------

 (unit: piece, kg, m, m<sup>2</sup>, m<sup>3</sup>, 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% <sup>19</sup>				
	Polychlorinated biphenyls (PCBs)	Polychlorinated biphenyls (PCBs)	50 mg/kg				
	Ozone-depleting substance	Chlorofluorocarbons (CFCs)	no threshold value				
		Halons					
		Other fully halogenated CFCs					
		Carbon tetrachloride					
		1,1,1-Trichloroethane					
		Hydrochlorofluorocarbons					
		Hydrobromofluorocarbons					
		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 <sup>20</sup>				

<sup>19</sup> 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 (UNSCGHS), 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.

<sup>20</sup> 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 diphenyl 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 \_\_\_\_\_

<i>(name, function)</i>	<i>(signature)</i>
-------------------------	--------------------



## 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)	29255-31-0
		1,1,1,3-Tetrachlorotetrafluoropropane	2268-46-4
		Trichloropentafluoropropane (CFC 215)	1599-41-3
		1,1,1-Trichloropentafluoropropane	4259-43-2
		1,2,3-Trichloropentafluoropropane	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	134237-32-4
		1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)	354-11-0
		1,1,2,2-tetrachloro-1-fluoroethane	354-14-3
		Trichlorodifluoroethane (HCFC 122)	41834-16-6
		1,2,2-trichloro-1,1-difluoroethane	354-21-2
		Dichlorotrifluoroethane(HCFC 123)	34077-87-7
		Dichloro-1,1,2-trifluoroethane	90454-18-5
		2,2-dichloro-1,1,1-trifluoroethane	306-83-2
		1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
		1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
		2,2-dichloro-1,1,2-trifluoroethane (HCFC-123b)	812-04-4
		Chlorotetrafluoroethane (HCFC 124)	63938-10-3
		2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
		1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	354-25-6
		Trichlorofluoroethane (HCFC 131)	27154-33-2; (134237-34-6)
		1-Fluoro-1,2,2-trichloroethane	359-28-4
		1,1,1-trichloro-2-fluoroethane (HCFC131b)	811-95-0
		Dichlorodifluoroethane (HCFC 132)	25915-78-0
		1,2-dichloro-1,1-difluoroethane (HCFC 132b)	1649-08-7
		1,1-dichloro-1,2-difluoroethane (HFCF 132c)	1842-05-3
		1,1-dichloro-2,2-difluoroethane	471-43-2
		1,2-dichloro-1,2-difluoroethane	431-06-1
		Chlorotrifluoroethane (HCFC 133)	1330-45-6
		1-chloro-1,2,2-trifluoroethane	1330-45-6
		2-chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
		Dichlorofluoroethane(HCFC 141)	1717-00-6; (25167-88-8)
		1,1-dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
		1,2-dichloro-1-fluoroethane	430-57-9
		Chlorodifluoroethane (HCFC 142)	25497-29-4
		1-chloro-1,1-difluoroethane (HCFC142b)	75-68-3
		1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4
		Hexachlorofluoropropane (HCFC 221)	134237-35-7
		Pentachlorodifluoropropane (HCFC 222)	134237-36-8
		Tetrachlorotrifluoropropane (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)	134237-40-4
		1,1,1-Trichloro-3,3,3-trifluoropropane	7125-83-9
		Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
		Chloropentafluoropropane (HCFC 235)	134237-41-5
		1-Chloro-1,1,3,3,3-pentafluoropropane	460-92-4
		Tetrachlorofluoropropane (HCFC 241)	134190-49-1
		Trichlorodifluoropropane (HCFC 242)	134237-42-6
		Dichlorotrifluoropropane (HCFC 243)	134237-43-7
		1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
		2,3-dichloro-1,1,1-trifluoropropane	338-75-0
		3,3-Dichloro-1,1,1-trifluoropropane	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
	Lead/lead compounds	Other hexavalent chromium 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  $^{241}\text{Am}$ ;  $^{226}\text{Ra}$ )  
Instruments/signs containing gaseous tritium light sources ( $^3\text{H}$ )  
Instruments/signs containing radioactive painting (typical radionuclide  $^{226}\text{Ra}$ )  
High intensity discharge lamps (typical radionuclides  $^{85}\text{Kr}$ ;  $^{232}\text{Th}$ )  
Radioactive lighting rods (typical radionuclides  $^{241}\text{Am}$ ;  $^{226}\text{Ra}$ )

#### Examples of industrial gauges with radioactive materials

Radioactive level gauges  
Radioactive dredger gauges<sup>21</sup>  
Radioactive conveyor gauges<sup>21</sup>  
Radioactive spinning pipe gauges<sup>21</sup>

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<sup>21</sup> Typical radionuclides:  $^{241}\text{Am}$ ;  $^{241}\text{Am/Be}$ ;  $^{252}\text{Cf}$ ;  $^{244}\text{Cm}$ ;  $^{60}\text{Co}$ ;  $^{137}\text{Cs}$ ;  $^{153}\text{Gd}$ ;  $^{192}\text{Ir}$ ;  $^{147}\text{Pm}$ ;  $^{238}\text{Pu}$ ;  $^{239}\text{Pu/Be}$ ;  $^{226}\text{Ra}$ ;  $^{75}\text{Se}$ ;  $^{90}\text{Sr}$  ( $^{90}\text{Y}$ );  $^{170}\text{Tm}$ ;  $^{169}\text{Yb}$