

## SHIP RECYCLING

### Proposals on Threshold Values and Exemptions Applicable Under the Hong Kong Convention, 2009

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#### SUMMARY

**Executive Summary:** This paper proposes draft lists of threshold values and exemptions to apply in the development of Inventories of Hazardous Materials under regulation 5 of the Hong Kong Convention, 2009.

**Strategic direction:**

**High level action:**

**Planned output**

**Action to be taken:** Paragraph 14

**Related Documents:** MEPC 64/3/X; MEPC 61/22; MEPC 61/3/7

#### Introduction

1 This submission proposes amendments to Resolution MEPC.197(62) Guidelines for the development of the Inventory of Hazardous Materials (IHM) through the further development of threshold values and introduction of some exemptions applicable to materials listed in tables A and B of Appendix 1 of the Guidelines, which are to be included in inventories for ships in accordance with the requirements of the Convention. It is believed that the proposed threshold values and exemptions require further clarification in the Guidelines for the development of Hazardous Materials. This paper provides an explanation of the need for the development of such values and exemptions to ensure the effectiveness of the Hong Kong Convention.

#### Background

2 Further background information on the Convention requirements for parties and stakeholders with respect to IHM and associated actions are provided in MEPC 64/3/X.

3 The issue of the development of threshold values and exemptions has been tabled at previous meetings of the Committee, and the need for development of such values and

exemptions has been acknowledged (MEPC 61/24). Due to time constraints and the substantial workload before the Committee and ship recycling working group at recent sessions, it has not been possible thus far to fully consider the issue in detail. However, a sound application of threshold values and exemptions remains fundamental to the IHM provisions and, by extension, vital elements of the Convention and the regime it will enforce. As such, the issue requires serious consideration as a matter of urgency. It is emphasised that the application of such values and exemptions should not reduce the safety of those working in the recycling facilities, nor limit the protection of the environment.

4 Regulation 5 of the Convention requires that shipowners develop Inventories of Hazardous Materials, to identify as Part 1, Hazardous Materials listed in the Appendices to the Convention, taking into account any threshold values and exemptions contained in the supporting Guidelines. Paragraph 3.3 of the Guidelines details the circumstances under which certain materials listed in Appendix 1 Table B are exempted from inclusion in the Inventory of Hazardous Materials and as such is the first instance of the exemptions referred to in Regulation 5.1. However, in order to optimise the effectiveness of the IHM, further exemptions are required for the Table B materials, specifically items B1 to B4.

5 Threshold values and exemptions applied in accordance with the Convention will assist all stakeholders to meet its requirements. Proper application will reduce the amount of detail in the documents, thereby making them concise and practicable for users and will reduce the administrative burden on flag and recycling State authorities. Furthermore it will facilitate the use of inventories during a ship's operational life and in the development of Ship Recycling Plans (SRP) by recyclers. It may also reduce uncertainties and increase confidence in the Convention itself. Finally, it is anticipated that clearly defined threshold values and exemptions will facilitate the entry into force of the Convention by increasing the viability of its provisions in the interim period.

#### **Threshold Values and Exemptions For Table A Materials**

6 Annex 1 provides proposed amendments to the guidelines with respect to Table A.

7 Two options are given for the appropriate level to apply to asbestos which derive from differing test scenarios worldwide. Regional and national legislation in EU countries, Australia and Japan provides for a detection limit of 0.1% for Asbestos under general testing methods, such as PLM test method. However, in submission MEPC 62/3/7, China proposed a number of amendments to apply under table A of Appendix 1 to the Convention, including that a detection limit of 1% would be practical for Asbestos rather than the "Not Detected" threshold presently applied in the guidelines.

8 Therefore, it is proposed that a value of either 0.1% or 1% be definitively stated as the threshold value for Asbestos.

9 Similarly for Ozone Depleting Substances MEPC 62/3/7 states 1mg/Kg as an appropriate limit and it is felt that the guidelines should be amended accordingly..

10 It is also proposed that a limit for Organotin compounds should be explicitly stated, reflecting the requirements of the Anti Fouling System (AFS) Convention, namely the limit of 2,500 mg organotin (measured as Sn) per kg of dry paint in the AFS Convention Guidelines (MEPC Resolution 104(49) para. 6.1)

### **Threshold Values and Exemptions for Table B Materials**

11 As stated above, the level of detail to be included with respect to the materials covered in B1-B4 under Appendix 2 requires further clarification. In particular, the circumstances under which threshold values exemptions could apply need to be considered with respect to these materials.

12 The need for exemptions to these materials, as well as how such exemptions could be applied in practice can be seen in the example of printed circuit boards which may contain small amounts of lead in solder. These are currently exempted under other waste electrical regulations, and there is a similar logic to applying the same Exemption under the Hong Kong Convention. Printed circuit boards will be used in a variety of applications throughout a ship and will occur in significant numbers. Without either an exemption or a threshold value the Convention will require that IHM detail every printed circuit board on board. Such a level of detail would clearly not fit the purpose of the IHM as a tool to facilitate safe and environmentally sound recycling as it will be both excessive and detail the presence of materials to a level that is not of practical use in the context of ordinary recycling operations. An alternative method to account for the presence of lead in solder in printed circuit boards would be to make a bulk recording of the small amounts present, e.g. 10kg lead in printed circuit boards in total on the ship, rather than 1g per circuit board out for each of the 10000 on board the ship. Again, it is questionable what benefit would be derived from the provision of this information in such a format. Under the Convention regime, the authorization and related procedures for recyclers and recycling States will ensure that such materials as solder in printed circuit boards will not present a hazard to workers or the environment during recycling. Similarly, operational and logistical practicalities will also mean that such products will not be recycled in the same place or at the same time, and certainly not in the recycling facility. Ultimately the usefulness of listing all 10000 printed circuit boards will not assist in the safe and environmentally sound recycling of the ship.

13 In light of this, and taking into account the frequency with which appendix b materials can be found in minimal quantities or in benign forms, a provisional list of amendments to 197(62) is provided at Annex 2 for consideration. The proposed amendments are drawn from the European Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment which controls similar materials to those covered by the Hong Kong Convention, and allow for exemptions on grounds of technical impracticality. This list was

developed with reference to that instrument, using the methodology which underpins the example referred to above. The list is not definitive and is likely to be augmented as threshold values and exemptions are further debated, but could form a core text for consideration and further work.

14 The Committee is invited to note the above and take action as appropriate.

## ANNEX 1

### THRESHOLD VALUES AND EXEMPTIONS FOR MATERIALS CONTAINED IN APPENDIX 1 TO THE HONG KONG CONVENTION

Material	Threshold Value	Exemption
Asbestos	[0.1%] [1%]	None
PCB	[50] ppm;	None
TBT	2500mg/kg in accordance with AFS requirements	Where an AFS Convention certificate has been issued, this information may be used.
Ozone Depleting Substances	1mg/kg (as per MEPC 62/3/7 para 7)	None

#### Technical notes

It should be noted that the detection level and therefore the threshold value depends on the sampling and test methods and thus these details rely on the acceptance of the methods detailed in MEPC 62/3/7 (IACS). Accordingly Asbestos and ODS are set at the detection rate for the method.

PCB similarly relies on the proper testing method, which in general will give detection levels as low as at least 0.1 ppm. PCBs are a persistent pollutant and thus the background level in many instances will be very much higher than this, without in any way being a health issue (in Canada the safe limit for fish for human consumption is 2ppm). This testing technique will therefore regularly report levels of PCB which are easily detected but in no way a cause for concern. In recognition of this, many countries have an 'action' level for PCBs. They also have no requirement to report PCBs below the action level. The Basel Convention uses a level of 50ppm.

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## ANNEX 2

### THRESHOLD VALUES AND EXEMPTIONS FOR MATERIALS CONTAINED IN APPENDIX 2 TO THE HONG KONG CONVENTION

The following threshold values are as proposed in MEPC 59/3 submitted by Japan, for Appendix 2 materials:

TABLE B Materials Listed in appendix 2 of the Convention

No.	Materials	Inventory			Threshold level [to be developed]
		Part 1	Part 2	Part 3	
B-1	Cadmium and Cadmium Compounds	x			100 mg/kg
B-2	Hexavalent Chromium and Hexavalent Chromium Compounds	x			1,000 mg/kg
B-3	Lead and Lead Compounds	x			1,000 mg/kg
B-4	Mercury and Mercury Compounds	x			1,000 mg/kg
B-5	Polybrominated Biphenyl (PBBs)	x			1,000 mg/kg
B-6	Polybrominated Diphenyl Ethers (PBDEs)	x			1,000 mg/kg
B-7	Polychlorinated naphthalenes (more than 3 chlorine atoms)	x			no threshold level
B-8	Radioactive Substances	x			no threshold level
B-9	Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)	x			1%

#### RoHS Listed Materials

Items B1, B2, B3 and B4 reflect the RoHS list and the threshold levels are acceptable provided the RoHS exemptions are modified to take into account the difference between short term landfilled disposable electronics and ships. Therefore, a modified list of exemptions follows based on the RoHS exemptions:

##### B1 – Cadmium and Cadmium Compounds

1. Cadmium and its compounds in electrical contacts and cadmium plating.

##### B2 – Hexavalent Chromium and Hexavalent Chromium Compounds

1. Hexavalent chromium as an anti-corrosion passivating layer in paints and coatings.

##### B3 – Lead and Lead Compounds

1. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.

2. Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminium containing up to 0.4% lead by weight and as a copper alloy containing up to 4% lead by weight.
3. Lead in solders and electronic components.
4. Lead in lead-bronze bearing shells and bushes.
5. Lead and cadmium in optical and filter glass.
6. Lead in linear incandescent lamps with silicate coated tubes.
7. Lead halide as radiant agent in High Intensity Discharge (HID) lamps.
8. Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps (ESL).
9. Lead bound in crystal glass

#### B4 – Mercury and Mercury Products

2. Mercury in compact fluorescent lamps not exceeding 5mg per lamp.
3. Mercury in straight fluorescent lamps for general purposes not exceeding:
  - i. halophosphate 10mg
  - ii. triphosphate with normal lifetime 5mg
  - iii. triphosphate with long lifetime 8mg.
4. Mercury in straight fluorescent lamps for special purposes.
5. Mercury in other lamps not specifically mentioned in this annex.

#### **Non-ROHS Listed Materials**

The following threshold values and exemptions apply to those materials provided in Appendix 2 which are not listed in RoHS:

B5, B6 and B7 are accepted without exemption since these materials are generally banned now and unlikely to be found in the structure or equipment of a ship.

#### B8-Radioactive materials

Threshold Value: The most common use of radioactive materials on board ship is Americium 241 in ionising smoke detectors. The normal activity of the source used is 127 GBq/g (3.43 Ci/g). This usage is clearly considered safe, and so a threshold at 50% of this 'safe' level is proposed. It is acknowledged that this is a very rough method, but the standard method on board a ship of using a Geiger-Muller tube and counting beeps per minute is more difficult to quantify.

Exemption: Traces of Contamination from cargoes with naturally occurring radioactive properties such as drill mud, soil or rock cargo residues with naturally occurring radium.

#### B9-Certain Short Chain Chlorinated Parafins (Alkanes C10-C13 Chloro)

No comment possible at this time.

