INVENTORY OF HAZARDOUS MATERIALS

IDENTIFY ALL HAZARDOUS SUBSTANCES ON BOARD

A SAFE WORKPLACE FOR YOUR EMPLOYEES

COMPLIANT TO CURRENT AND FUTURE REGULATIONS

PROMOTION OF THE SAFETY, USABILITY AND DURABILITY OF SHIPS

DISMANTLING WITH LOW RISKS FOR PEOPLE AND ENVIRONMENT

SGS

WHY AN IHM?

A safe and healthy environment is essential for a productive, compliant maritime operation. Onboard health and safety is coming under increased scrutiny from national, European and global laws and regulations. Including present and proposed implementations by the International Maritime Organization (IMO) and the VGP. Both are placing increasing demands on maritime operators to give attention to health and safety considerations. An Inventory of Hazardous Materials (IHM) plays a vital role.

BEST PRACTICE STANDARD

IHM is already seen as a best practice standard. The benefits of the inventory are widely acknowledged within the industry. These are the specific benefits of IHM:

- Identifies all hazardous substances on board, including mercury, leaded paint, chromium-6 or polychlorinated biphenyls (PCB's).
- Contributes to a safe workplace for your employees.
- Ensures that the ship can be dismantled safely, with low risks for people and environment.
- Provides your company a positive, green image.
- Makes sure the ship is compliant to current and future regulations, such as SOLAS and MARPOL.
- Provides tools to take further actions, promoting the safety, usability and durability of ships.
- Ensures a strong position in liability issues.
- Ensures higher resale values for ships.

LEGAL FRAMEWORK

SAFETY FIRST!

Making the shipping industry as safe as possible is the main priority of the International Maritime Organization (IMO), the specialized maritime agency of the United Nations. IHM is an integral part of the Hong Kong Convention, approved by the IMO in 2009. Although this convention has not come into effect yet; it determines that every ship must have an inventory of all hazardous materials on board. The convention aims to ensure that ships can be dismantled safely, with minimal risks to people or environment. A similar regulation came into force in the European Union in 2013: the new European Regulation on ship recycling (EU SSR). Both require an IHM for all ships.

TAKE INTO ACCOUNT

The responsibility of the IHM lies indirectly with the ship or fleet owner, or rather more directly with the ships technical management. All EU-flagged types of vessels of 500 GT and over must have an IHM on board. Vessels from non-EU countries will also be required to carry an IHM when calling at EU-ports. Furthermore, EU-flagged vessels must be demolished in an approved ship recycling facility. New build EU-flagged vessels must have an IHM on board with a Statement of Compliance from after December 31, 2018.

IN SHORT

Ship owners, ship builders, recycling facilities, national authorities and suppliers must ensure a safe and environmentally viable management of hazardous materials and the sustainable recycling of vessels. They must be in possession of an IHM or an International Ready for Recycling Certificate (IRRC). Captains and ship recycle facilities can be checked by the Port state control at all European ports.
For additional information concerning maritime legislation and regulations, we refer you to www.imo.org.

IHM IN SHORT

An IHM gives insight into the presence of hazardous materials on board a ship, minimizing risks to the health of employees and the environment. The report not only states which hazardous materials are present; it also specifies the quantities and their specific properties. For example, IHM tests the presence of PCBs, mercury (compounds), asbestos, radioactive substances and chromium-6. An IHM report is "dynamic", meaning the report eventually covers the entire life cycle of a vessel. Roughly three stages can be distinguished:

BUILDING STAGE

SHIPOWNERS OR SHIPYARDS

As of December 31, 2018, newbuild vessels are obliged to carry an IHM report. During the building stage, the shipyard - in cooperation with the shipowner – will set up the IHM that is based on material declarations. This is certified by the Flag State or Recognized Organization (RO), and checked by Port State Control PSC and periodic certification.
In some cases, a check of possibly used materials from suppliers is useful before the construction of the ship. Note: this is not an IHM, but it can already reveal many insights. In both cases a first investigation (IHM Part I) is carried out.

OPERATIONAL STAGE

SHIPOWNERS OR SHIPYARDS

When certain changes take place on board, an (updated) IHM is required. For example, after a refit or intensive docking, it is possible that hazardous materials have been brought on board.
For an existing vessel that already had an IHM during construction, an additional survey will be sufficient. In that case, the existing IHM Part I report will receive an update, or will be further expanded if needed. When the ship does not have an IHM on board yet, an initial survey (IHM Part I) will be carried out.

RECYCLING STAGE

SHIPOWNERS OR SHIP RECYCLING FACILITIES

If a ship has reached the end of its economic life, it will have to be demolished and recycled. Recycling ships is a major challenge, in both social and environmental terms. In practice, this is often a hazardous and environmentally damaging job, because of the hazardous materials that are processed in the ship and in its equipment.
During the preparatory phase of the decommissioning, a final investigation (Part I, II & III) is carried out. This IHM report forms a major source of information for the ship recycling plan and the selection of the ship recycling facility. Together with a SRP (Ship Recycling Plan) and DASR (Document of Authorization to conduct Ship Recycling), the ship can be dismantled safely.

IHM IN PRACTICE

An IHM consists of research and sampling on board. After research and preparing a Visual Sampling and Checking Plan (VSCP) a fully approved HazMat Expert will collect samples of all kinds of materials during an onboard survey. Next, he will have them analyzed in a certified laboratory. In all cases, we recommend having both desk research and a visual inspection carried out during IHM Part I. It provides a solid foundation for a Part II research, since it factually proves that the report matches with reality. There are different IHM-approaches concerning the life stages of the ship:

	SHIPBUILDING & OPERATION	PREPARATION PRIOR TO RECYCLING	
	IHM PART I Structure & Equipment	**IHM PART II** Operationally generated wastes	**IHM PART III** Stores
MANDATORY FOR NEW/EXISTING SHIPS & NEW INSTALLATIONS HKC: Table A, EU SRR: Annex I	•		
MANDATORY FOR NEW SHIPS/INSTALLATIONS; AS FAR AS PRACTICABLE FOR EXISTING SHIPS HKC: Table B, EU SRR: Annex I	•		
TABLE C MATERIALS: Potentially hazardous items (liquids, gases & solids)		•	
TABLE D MATERIALS: Regular consumable goods potentially containing hazardous materials			•

A PRACTICAL EXAMPLE: ASBESTOS

One of the materials found on board ships is asbestos. Since 2002, the use of asbestos on ships has been forbidden, and yet it's still regularly detected. It is used, for instance, in fire blankets, insulation material, ropes, brake linings, ceiling cladding and electrical fuses. Asbestos poses significant risk to long-term health. An IHM provides clarity in the presence of asbestos. It reveals which types are involved, at which locations the applications are found and what the condition is. An IHM also indicates potential associated health risks.

SAMPLING

During an inventory of hazardous materials, numerous samples are being taken by an expert. Below you will find an overview of the materials and substances that are sampled.

SAMPLING AT NEW AND EXISTING SHIPS, IHM PART I

REGULATIONS	MATERIALS		EU SHIP	NON-EU SHIP
Materials listed in Annex I of the EU SRR and Appendix 1 of the HKC	Asbestos		•	•
	Polychlorinated Biphenyls (PCBs)		•	•
	Ozone Depleting Substances	CFCs	•	•
		Halons	•	•
		Other fully halogenated CFCs	•	•
		Carbon Tetrachloride	•	•
		1,1,1-Trichloroethane (Methyl chloroform)	•	•
		Hydrochlorofluorocarbons	•	•
		Hydrobromofluorocarbons	•	•
		Methyl bromide	•	•
		Bromochloromethane	•	•
	Anti-fouling systems containing organotin compounds as a biocide		•	•
Materials listed in Annex I of the EU SRR	Perfluorooctane sultonic acid (PFOS) and its derivatives[3]		•	-

SAMPLING AT NEW SHIPS AND AS FAR AS PRACTICABLE FOR EXISTING SHIPS, PART I

REGULATIONS	MATERIALS	EU SHIP	NON-EU SHIP
Materials listed in Annex II of the EU SRR and Appendix 2 of the HKC	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)	•	•
Materials listed in Annex II of the EU SRR	Brominated Flame Retardant (HBCDD)	•	-

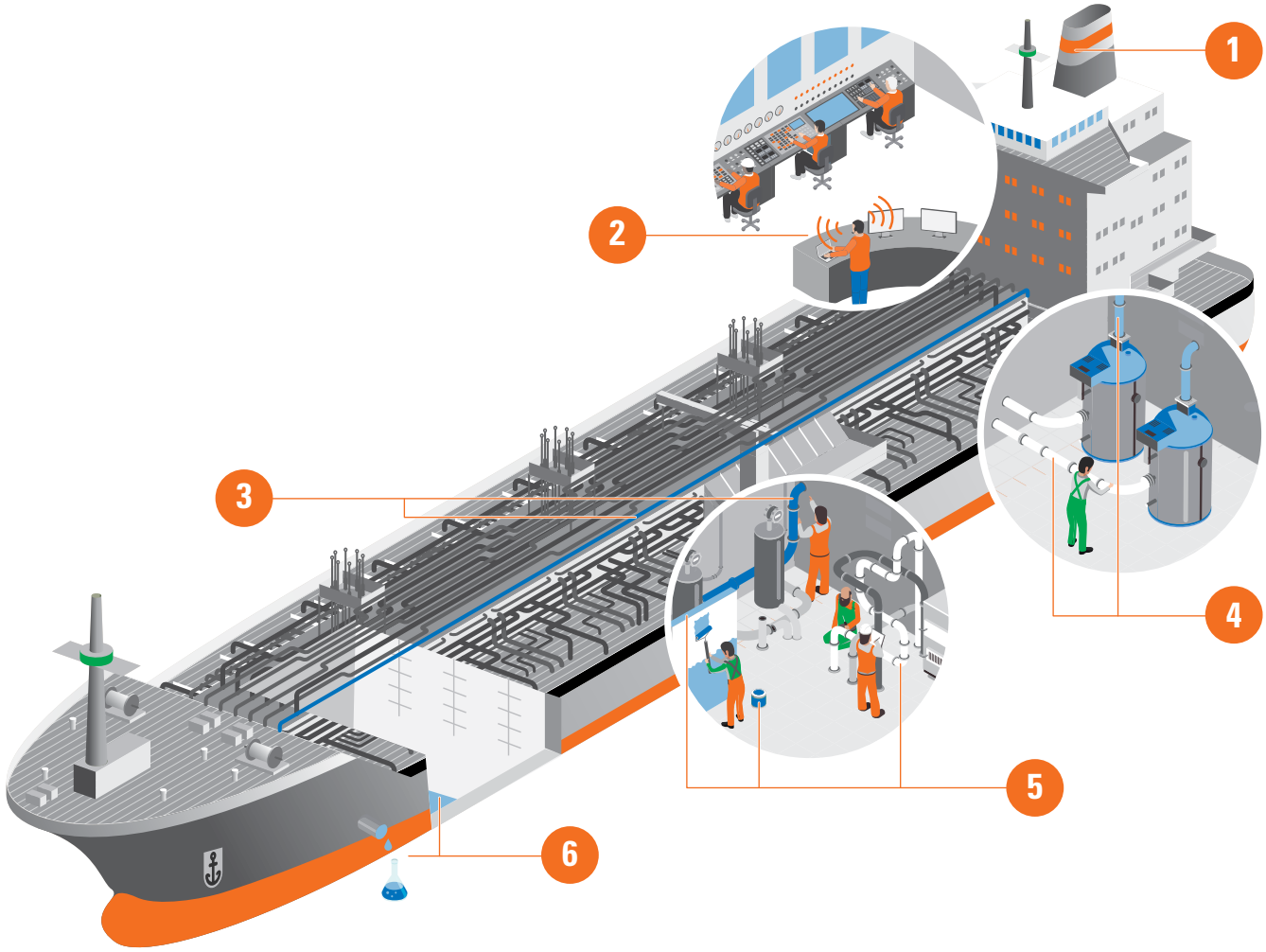
SAMPLING AT SHIPS DURING THE RECYCLING STAGE, IHM PART II OR III

In the preparation stage prior to recycling, the existing IHM Part I report will be supplemented. An IHM Part II identifies all potentially hazardous items before the ship is dismantled. This concerns the following materials, as listed in Table C of the HKC:

- Liquids (e.g. oils, kerosene and paints)
- Gases (e.g. fuel gas, methane and CO^2)
- Solids (e.g. garbage and residues).

Finally, an IHM Part III gives insight into all regular consumable goods (such as electronic and interior equipment) that possibly contain hazardous materials (Table D). All in order to safely dismantle the ship, reducing risks to people and environment.

SGS MARINE SERVICES



1 MONITORING, REPORTING AND VERIFICATION (MRV) OF CO^2 EMISSIONS
Independent verification of your CO^2 monitoring plans (MP) and emissions in compliance with EU Regulation 2015/757.

2 NOISE AND VIBRATION EXAMINATION
Independent verification of noise and/or vibration, and checks for compliance with all applicable regulations.

3 WATER SAMPLING AND ANALYSIS
Microbiological and chemical examination of onboard drinking water and waste water. Ensures compliance to WHO guidelines, ILO 178 (2009), MLC 2006 and IHR 2005 requirements.

4 EMISSION MEASUREMENTS AND SCRUBBER ANALYSES
A wide range of online measurements and analyses, before and after the exhaust gas cleaning system, tailored to your needs.

5 INVENTORY OF HAZARDOUS MATERIALS (IHM)
Reliable insight into the presence of hazardous materials on board, their identity and quantity. Think asbestos, mercury, lead-based paint or PCBs.

6 BALLAST WATER SAMPLING AND ANALYSIS
Full analysis in line with the relevant regulations published by the IMO, Ballast Water Convention and US VGP – delivered anywhere in the world.

HOW CAN WE HELP YOU?

SGS is the world's leading inspection, verification, testing and certification company. SGS is recognized as the global benchmark for quality and integrity. With more than 95,000 employees, SGS operates a network of over 2,400 offices and laboratories around the world.

FLEXIBLE, FAST AND INDEPENDENT

Flexible, fast and independent, our experts are certified to carry out IHM research and analyses. SGS is standby 24 hours a day. If necessary, our inspectors can fly over to your vessel and make sure the analysis will be carried out without delay for your fleet. The samples are analyzed in our own laboratory, meaning the results are available instantly.

SUPPORTING YOU IN ALL POSSIBLE WAYS

We can support the maritime sector across the full spectrum of environmental, safety and health related shipping issues. With our presence in all major ports around the world, our services are available whenever and wherever you need them.

MORE INFORMATION

Our experts have extensive knowledge of the latest laws and regulations. We are eager to assist you with all your maritime questions. Please contact us for more information about our services or for advice.

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WHEN YOU NEED TO BE SURE

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