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Ships and marine technology — Marine environment protection — Management and handling of shipboard garbage

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO TC 8, *Ships and marine technology*, Subcommittee SC 2, *Marine environment protection*.

This second edition cancels and replaces the first edition (ISO 21070:2011), which has been technically revised.

Introduction

The management of shipboard garbage is extensively controlled by MARPOL, Annex V. Additionally, States party to the MARPOL Convention have undertaken regional and national implementing legislation to regulate and enforce provisions for handling ships' waste and for providing adequate reception facilities at ports and terminals subject to Parties' flag state and port state control authorities.

This document has been prepared to reflect the amendments of MARPOL, Annex V of January 2013.

This document provides for the minimization, management and segregation of a ship's garbage, so that it can be managed on-board and offloaded efficiently to the relevant reception facilities onshore.

To obtain the most efficient management of waste and to reduce the time and resource burden in segregating and handling waste on the ship and in the ports, the concept of waste minimization has been integrated into this document by incorporating the following basic principle: **Prevention before recycling before energy recovery before disposal.**

This document concentrates on

— the prevention/elimination/minimization of waste prior to sailing,

— the minimization of waste at the source on the ship,

— the garbage collection at the source,

— the waste segregation on the ship into defined categories that are recognized globally and fit into the many different waste categorization systems around the world,

— the waste minimization once segregated,

— the waste storage on board ship, and

— the health and safety concerns surrounding the handling, storage and offloading of waste.

Both ship owners and coastal states are more aware of the importance of well-organized and managed waste collection and its benefits, especially with respect to health and safety on board ships, the reduction of pollution and the potential cost benefits for ship owners and national governments. This document provides a fixed standard for segregated garbage that any harbour facility worldwide may expect when a ship arrives in port. However, it cannot work alone. ISO 16304 works in conjunction with this document. This document does not consider the available various (and numerous) shore-side waste handling systems that exist, but may encourage the provision of recycling facilities for shipboard waste in ports.

Ships and marine technology — Marine environment protection — Management and handling of shipboard garbage

1 Scope

This document specifies procedures for the shipboard management of garbage, including handling, collection, separation, marking, treatment, and storage. It also describes the ship-to-shore interface and the delivery of garbage from the ship to the port reception facility. MARPOL, Annex V sets the minimum standard for garbage management that apply to ships. This document applies to the management and handling of shipboard garbage during the period the garbage will be on board. The definition of garbage in this document is as defined in MARPOL, Annex V.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

International Convention for the Prevention of Pollution from Ships, (MARPOL) Annex I to VI, as amended, IMO, consolidated edition 2011

Guidelines for the Implementation of MARPOL Annex V, IMO, 2012

MEPC.1/ Circ. 834, *Consolidated guidance for port reception facilities providers and users, IMO,15 April 2014*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1 General terms

3.1.1
discharge
any release, however caused, from a ship including any escape, disposal, spilling, leaking, pumping, emitting or emptying

[SOURCE: MARPOL Article 2 (3)(a)]

3.1.2
harmful substance
substance which, if introduced into the sea, is liable to create hazards to human health; harm living resources and marine life; damage amenities or interfere with other legitimate uses of the sea, and; includes any substance subject to control by the present MARPOL Convention

[SOURCE: MARPOL Article 2 (2)]

3.1.3
hazardous waste
waste which, due to its nature, physical, chemical or infectious properties, is potentially hazardous to human health and/or the environment during use, handling, storage or transportation, including any material which may require special handling, disposal or recycling techniques to eliminate or reduce the hazard

3.1.4
port reception facility
PRF
any fixed, floating or mobile facility capable of receiving MARPOL residues/wastes from ships and fit for that purpose

[SOURCE: Circular MEPC 1/Circ.834]

Note 1 to entry: For the purposes of this document, this relates to reception facilities for garbage as defined by MARPOL, Annex V. An adequate port reception facility is a facility that mariners use and fully meets the needs of the ships regularly using it and the port and does not provide mariners with a disincentive to use it. Furthermore, it should contribute to the improvement of the marine environment. It should also allow for the ultimate disposal of ships' wastes to take place in an environmentally appropriate way.

[SOURCE: IMO Resolution MEPC.83(44)]

3.1.5
recycling
activity of segregating and recovering components and materials for reprocessing

3.1.6
reuse
activity of recovering components and materials for further use without reprocessing

3.2 Terms relating to garbage

3.2.1
cargo residue
remnants of any cargo material which are not covered by other annexes to the present MARPOL Convention and which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage, whether in wet or dry conditions or entrained in wash water but does not include cargo dust remaining on the deck after sweeping or dust on the external surfaces of the ship

Note 1 to entry: Dry bulk cargo residues may include substances that are harmful to the marine environment (HME) with special restrictions for *discharges* (3.1.1) including HME entrained in cargo hold wash water. *Port reception facilities* (3.1.4) for cargo residues considered to be HME may be required at loading or discharge ports handling bulk dry cargoes.

[SOURCE: MARPOL Annex V reg. 1.2]

3.2.2
domestic waste
all types of waste not covered by other annexes to the present MARPOL Convention that are generated in the accommodation spaces on board the ship

Note 1 to entry: Domestic wastes does not include grey water.

[SOURCE: MARPOL Annex V reg. 1.4]

3.2.3
garbage
all kinds of food waste, *domestic waste* (3.2.2) and *operational waste* (3.2.5), all *plastics* (3.2.11), *cargo residue* (3.2.1), cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other annexes to the present MARPOL Convention.

Note 1 to entry: Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing.

[SOURCE: MARPOL Annex V reg. 1.9]

3.2.4
incinerator ashes
ash and clinkers resulting from shipboard incinerators used for incineration of *garbage* (3.2.3)

[SOURCE: MARPOL Annex V reg. 1.10]

3.2.5
operational waste
all solid waste (including slurries) not covered by other annexes in the present MARPOL Convention that are collected on board during normal maintenance or operations of a ship, or used for cargo stowage and handling

Note 1 to entry: Operational waste includes, but is not limited to, the following wastes associated with cargo storage and handling: dunnage, shoring, pallets, lining, transit and packing materials, plywood, paper, cardboard, wire, plastic wrapping, and steel strapping.

Note 2 to entry: Operational waste also includes cleaning agents and additives contained in external wash water.

Note 3 to entry: Operational waste does not include grey water, bilge water, or other similar *discharges* (3.1.1) essential to the operation of a ship.

Note 4 to entry: Wooden material may be defined as quarantine waste in certain countries.

[SOURCE: MARPOL Annex V reg. 1.12]

3.2.6
oily rag
rag which has been saturated with oil and controlled in MARPOL, Annex I

3.2.7
contaminated rag
rag which has been saturated with any substance defined as potentially hazardous or harmful to human health and/or the environment

3.2.8
maintenance waste
materials collected by the crew while maintaining and operating the ship

3.2.9
medical waste
solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biological materials, including but not limited to isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes and potentially contaminated laboratory wastes and dialysis wastes

Note 1 to entry: Medical waste is distinguished into two categories: infectious and non-infectious as defined by the World Health Organization.

3.2.10
quarantine waste
solid or liquid waste determined by local or regional legislation to require special handling, segregation and disposal due to its potential to spread disease, diseases, or plant and animal pests when discharged or delivered ashore

3.2.11
plastic
solid material which contains as an essential ingredient one or more high molecular mass polymers and which is formed (shaped) during either the manufacture of the polymer or the fabrication into a finished product by heat and/or pressure

Note 1 to entry: Plastics have material properties ranging from hard and brittle to soft and elastic.

Note 2 to entry: For the purpose of this document, plastics include plastic in any form, including synthetic ropes, synthetic fishing nets, plastic *garbage* (3.2.3) bags and *incinerator ashes* (3.2.4) from plastic products.

[SOURCE: MARPOL Annex V, reg. 1.13]

4 Requirements

4.1 General

This clause specifies the minimum requirements for waste treatment on board, including waste separation, marking, collecting, storing and offloading to port reception facilities.

While it is recognized that on board waste management should be standardized, it shall be noted that offloading procedures depend on the ports and the port reception facilities available.

4.2 Classification of garbage

The following categories and garbage types covered in this document are listed in Table 1.

Table 1 — Categories and garbage types

Type	MARPOL Annex V category	Industry recognized symbol (available through a simple internet search)	Description
Plastics	A	 For recyclable plastics only	All garbage that consists of or includes plastic in any form, including synthetic ropes and fishing nets, shall be retained on board and disposed of ashore.
Food wastes	B		—
Domestic waste	C		—

Table 1 *(continued)*

Type	MARPOL Annex V category	Industry recognized symbol (available through a simple internet search)	Description
Cooking oil	D		—
Incinerator ashes	E		NOTE Incinerator ash from plastic products may contain toxic or heavy metals.
Operational wastes	F		Examples of (non-hazardous) wastes are dunnage, shoring, pallets, lining, transit and packing materials, plywood, paper cardboard, wire, plastic wrapping, and steel strapping. NOTE 1 Some regional or national legislation may require even further separate identification and handling. NOTE 2 Operational waste can be considered hazardous. Examples of hazardous waste are batteries, fluorescent lamps, garbage contaminated with hazardous waste, and any other waste that is considered hazardous waste. This kind of waste is handled and treated separately. NOTE 3 Oily waste and rags are MARPOL, Annex I waste. NOTE 4 Medical waste is a separate item.
Cargo residue	G		See 4.3. NOTE Dry cargo residues may include deck or cargo hold sweepings and wash water containing such residues.
Animal carcasses	H		—
Fishing gear	I		—
Glass	C		NOTE May require separation by colours.
Paper Products	C		—
Medical waste	—		Reference is made to guidelines to MARPOL, Annex V 2012, 5.2.5.