



All respectful ICS Customers & Surveyors

With my gratitude, respectfully,

As you may know, requirements related to carriage of Dangerous Goods are applied through MARPOL and SOLAS conventions and relevant codes. Consequently, precise implementation of these requirements needs deeper comprehension of customers and surveyors.

As a result, Convention & Legislation Department prepared a Technical Information in which, an overview of relevant requirements to Dangerous Goods has been presented.

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کلیه مشتریان و بازرسان محترم موسسه

با سلام و احترام

همانگونه که مستحضر هستید الزامات قانونی مربوط به حمل کالاهای خطرناک در قالب کنوانسیونهای مارپول، سولاس و کدهای مربوط به آنها اعمال می گردد. بر این اساس درک صحیح الزامات مربوطه توسط مشتریان و بازرسان مؤسسه کمک شایانی به اجرای دقیق تر مقررات خواهد نمود. در همین راستا، طی اطلاعیه فنی پیش رو، واحد کنوانسیونها و مقررات دریایی اقدام به معرفی کلیات الزامات مربوطه نموده است.

نسخه الکترونیکی بخشنامه مذکور در شبکه داخلی موسسه با آدرس ذیل قابل دسترسی می باشد:

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عبدالله جمالی

مدیریت واحد کنوانسیونها و مقررات دریایی

موسسه رده بندی ایرانیان

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1. Preface

This Technical Information describes dangerous goods and gives an introduction of relevant requirements and codes according to SOLAS 74 and MARPOL.

It mainly focuses on the following codes:

- International Maritime Dangerous Goods (IMDG) Code
- International Bulk Chemical (IBC) Code
- International Gas Carrier (IGC) Code
- International Maritime Solid Bulk Cargoes (IMSBC) Code
- International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Wastes on Board Ships (INF Code)

2. Introduction

The International Maritime Organization (IMO) deals with two key issues for the maritime industry:

- The safety of life at sea
- Prevention of pollution from ships

To supplement these principles, regarding Dangerous Goods, the IMO developed detailed technical specifications including IMDG Code, IBC Code, IGC Code, IMSBC Code, and INF Code to enable dangerous goods to be transported safely by sea.

In this TI, an introduction to the reference regulations and the relevant requirements are presented.

In addition, the following documents in relation to this topic are attached to this TI:

- Dangerous Goods List
- IBC- Chapter17
- IGC- Chapter19
- MARPOL- Annex III- Appendix

3. Dangerous goods in SOLAS

Dangerous goods are referred in SOLAS, comprehensively, in Chapter VII. The relevant requirements in this chapter are divided into five categories, including:

- Dangerous goods in packaged form
- Dangerous goods in solid form in bulk

- Dangerous goods in liquid chemical form in bulk
- Dangerous goods in liquid gases form in bulk
- Packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes

In addition to Chapter VII, some other regulations regarding fire safety of carriage of dangerous goods are referred in Chapter II-2 which are not in the scope of this TI.

3.1 Carriage of dangerous goods in packaged form

3.1.1 Definition

Dangerous goods mean the substances, materials and articles covered by the IMDG Code.

Packaged form means the form of containment specified in the IMDG Code.

3.1.2 Application

This part applies to the carriage of dangerous goods in packaged form in all ships except:

- Ships of war and troopships
- Ships not propelled by mechanical means
- Wooden ships of primitive build

3.1.3 Requirements

This section is almost the same as the requirements in section 3.2.3. in order to avoid the duplication, items just relevant to section 3.1.3. are stated in white boxes while items relevant to section 3.2.3 are in orange ones.

The carriage of dangerous goods in packaged form/ in solid form in bulk is prohibited except in accordance with the provisions of this part.

To supplement the provisions of this part, each Contracting Government shall issue, or cause to be issued, detailed instructions on emergency response and medical first aid relevant to incidents involving dangerous goods in packaged form/ in solid form in bulk, taking into account the guidelines developed by IMO.

The carriage of dangerous goods in packaged form shall be in compliance with the relevant provisions of the IMDG Code.

The carriage of dangerous goods in solid form in bulk shall be in compliance with the relevant provisions of the IMSBC Code.

In all documents relating to the carriage of dangerous goods in packaged form/ in solid form in bulk by sea, the proper shipping name of the goods shall be used (trade names alone shall not be used) and the correct description given in accordance with the classification set out in the IMDG Code.

The transport documents prepared by the shipper shall include, or be accompanied by, a signed certificate or a declaration that the consignment, as offered for carriage, is properly packaged, marked, labeled or placarded, as appropriate, and in proper condition for carriage.

The person(s) responsible for the packing/loading of dangerous goods in a cargo transport unit shall provide a signed container/vehicle packing certificate stating that the cargo in the unit has been properly packed and secured and that all applicable transport requirements have been met. Such a certificate may be combined with the document referred to in the previous paragraph.

Where there is due cause to suspect that a cargo transport unit in which dangerous goods are packed is not in compliance with the requirements of the above paragraphs, or where a container/vehicle packing certificate is not available, the cargo transport unit shall not be accepted for carriage.

Each ship carrying dangerous goods in packaged form/ in solid form in bulk shall have a special list or manifest setting forth, in accordance with the classification set out in the IMDG Code, the dangerous goods on board and the location thereof. A detailed stowage plan, which identifies by class and

sets out the location of all dangerous goods on board, may be used in place of such a special list or manifest. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

Cargo, cargo units and cargo transport units, shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to the guidelines developed by IMO.

Dangerous goods in solid form in bulk shall be loaded and stowed safely and appropriately in accordance with the nature of the goods. Incompatible goods shall be segregated from one another.

Dangerous goods in solid form in bulk which are liable to spontaneous heating or combustion shall not be carried unless adequate precautions have been taken to minimize the likelihood of the outbreak of fire.

Dangerous goods in solid form in bulk which give off dangerous vapors shall be stowed in a well ventilated cargo space.

When an incident takes place involving the loss or likely loss overboard of dangerous goods in packaged form/ in solid form in bulk into the sea, the master, or other person having charge of the ship, shall report the particulars of such an incident without delay and to the fullest extent possible to the nearest coastal State. The report shall be drawn up based on general principles and guidelines developed by IMO.

In the event of the ship referred to in the previous paragraph being abandoned, or in the event of a report from such a ship being incomplete or unobtainable, the company, shall, to the fullest extent possible, assume

the obligations placed upon the master by this regulation.

3.2 Carriage of dangerous goods in solid form in bulk

3.2.1 Definition

Dangerous goods in solid form in bulk means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is covered by the IMDG Code and is loaded directly into the cargo spaces of a ship without any intermediate form of containment, and includes such materials loaded in a barge on a barge-carrying ship.

3.2.2 Application

This part applies to the carriage of dangerous goods in solid form in bulk in all ships except:

- Ships of war and troopships
- Ships not propelled by mechanical means
- Wooden ships of primitive build

3.2.3 Requirements

The same as section 3.1.3.

3.3 Carriage of dangerous goods in liquid chemical form in bulk

3.3.1 Definition

Chemical tanker means a cargo ship constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the IBC Code.

3.3.2 Application

This section is almost the same as section 3.4.2. in order to avoid the duplication, items just relevant to section 3.3.2. are stated in white boxes while items relevant to section 3.4.2. are in orange ones.

This part applies to chemical tankers/ gas carriers constructed on or after 1 July 1986 including those of less than 500 tons gross tonnage. Such chemical tankers/ gas carriers shall comply with the requirements of this part in addition to any other applicable requirements.

Any chemical tankers/ gas carriers, irrespective of the date of construction, which undergoes repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to the ship. Such a ship, if constructed before 1 July 1986, shall, as a rule, comply with the requirements for a ship constructed on or after that date to at least the same extent as before undergoing such repairs, alterations, modifications, or outfitting related thereto, shall meet the requirements for a ship constructed on or after 1 July 1986 in so far as the Administration deems reasonable and practicable.

A ship, irrespective of the date of construction, which is converted to a chemical tankers/ gas carriers, shall be treated as a gas carrier constructed on the date on which such conversion commenced.

3.3.3 Requirements

A chemical tanker shall comply with the requirements of the IBC Code and shall, in addition to the requirements of regulations I/8, I/9, and I/10, as applicable, be surveyed and certified as provided for in that Code.

3.4 Carriage of dangerous goods in liquid gases form in bulk

3.4.1 Definition

Gas carrier means a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas or other product listed in chapter 19 of the IGC Code.

3.4.2 Application

The same as section 3.3.2.

3.4.3 Requirements

A gas carrier shall comply with the requirements of the IGC Code and shall, in addition to the requirements of regulations I/8, I/9 and I/10, as applicable, be surveyed and certified as provided for in that Code.

3.5 Carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes on board ships

3.5.1 Definition

INF cargo means packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes carried as cargo in accordance with class 7 of the IMDG Code. Irradiated nuclear fuel means material containing uranium, thorium and / or plutonium isotopes which has been used to maintain a self-sustaining nuclear chain action.

Plutonium means the resultant mixture of isotopes of that material extracted from irradiated nuclear fuel from reprocessing.

High-level radioactive wastes means liquid wastes resulting from the operation of the first stage extraction system or the concentrated wastes from subsequent extraction stage, in a facility for reprocessing irradiated fuel, or solids into which such liquid wastes have been converted.

3.5.2 Application

Except as provided for in the next paragraph, this part shall apply to all ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo.

This part and the INF Code do not apply to warships, naval auxiliary or other vessels owned or operated by a Contracting Government and used, for the time being, only on government non-commercial service; however, each Administration 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 carrying INF cargo act in a manner consistent, so far as reasonable and practicable, with this part and the INF Code.

Nothing in this part or the INF Code shall prejudice the rights and duties of governments under international law and any action taken to enforce compliance shall be consistent with international law.

3.5.3 Requirements

A ships carrying INF cargo shall comply with the requirements of the INF Code in addition to any other applicable requirements and shall be surveyed and certified as provided for in that Code.

4. Dangerous goods in MARPOL

4.1 Annex II (Regulations for the Prevention of Pollution by Noxious Liquid Substances in bulk)

4.1.1 Definition

Noxious Liquid Substance means any substance indicated in the Pollution Category column of chapter 17 or 18 of the IBC Code or provisionally assessed under the provisions of regulation 6.3 as falling into Category X, Y or Z.

For the purpose of the regulations of this Annex, Noxious Liquid Substances shall be divided into four categories as follows:

- **Category X:** Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present *a major hazard* to either marine resources or human health and, therefore, justify the prohibition of the discharge into the marine environment;
- **Category Y:** Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present *a hazard* to either marine resources or human health or cause harm to amenities or other legitimate uses of the sea and therefore justify a limitation on the quality and quantity of the discharge into the marine environment;
- **Category Z:** Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present *a minor hazard* to either marine resources or human health and therefore justify less stringent

restrictions on the quality and quantity of the discharge into the marine environment;

- **Other Substances:** substances indicated as OS (Other Substances) in the pollution category column of chapter 18 of the IBC Code which have been evaluated and found to fall outside Category X, Y or Z as defined in regulation 6.1 of this Annex because they are, at present, considered to present *no harm* to marine resources, human health, amenities or other legitimate uses of the sea when discharged into the sea from tank cleaning of deballasting operations. The discharge of bilge or ballast water or other residues or mixtures containing only substances referred to as “Other Substances” shall not be subject to any requirements of the Annex.

4.1.2 Application

The provisions of this Annex shall apply to all ships certified to carry Noxious Liquid Substances in bulk.

4.1.3 Requirements

According to the requirements of this Annex, the design, construction, equipment and operation of ships certified to carry Noxious Liquid Substances in bulk, shall be in compliance with IBC Code.

4.2 Annex III (Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form)

4.2.1 Definition

Harmful substances are those substances which are identified as marine pollutants in the IMDG Code or which meet the criteria in the Appendix of this Annex.

Packaged form is defined as the forms of containment specified for harmful substances in the IMDG Code.

4.2.2 Application

The regulations of this Annex apply to all ships carrying harmful substances in packaged form.

4.2.3 Requirements

According to this Annex, the carriage of dangerous goods in packaged form shall be in compliance with the relevant provisions of the IMDG Code.

5. References

- SOLAS 74
- MARPOL
- IMDG Code
- IBC Code
- IGC Code
- IMSBC Code
- INF Code

6. Overview of dangerous goods in SOLAS and MARPOL

Reference	Category	Application	Requirement
SOLAS 74/ Chapter VII	dangerous goods in packaged form	Carriage of dangerous goods in packaged form in all ships to which the present chapter apply and in cargo ships of less than 500 gross tonnage	IMDG Code
	dangerous goods in solid form in bulk	Carriage of dangerous goods in solid form in bulk in all ships, to which the present chapter apply and in cargo ships of less than 500 gross tonnage	IMSBC Code
	dangerous goods in liquid chemical form in bulk	Chemical tankers constructed on or after 1 July 1986 including those of less than 500 tons gross tonnage	IBC Code
	dangerous goods in liquid gases form in bulk	Gas carriers constructed on or after 1 July 1986 including those of less than 500 tons gross tonnage	IGC Code
	packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes	All ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo	INF Code
MARPOL/ Annex II	Noxious Liquid Substances in bulk	All ships certified to carry Noxious Liquid Substances in bulk	IBC Code
MARPOL/ Annex III	Harmful Substances Carried by Sea in Packaged Form	All ships carrying harmful substances in packaged form	IMDG Code