

MARPORT PORT MANAGEMENT IND. AND TRADE INC. HAZARDOUS GOODS HANDLING GUIDE



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DEFINITIONS AND ABBREVIATIONS

- a) Packaging: The transport container in which the dangerous cargo is placed, as defined in IMDG Code Section 6,
- b) Ministry: Ministry of Transport and Infrastructure,
- c) BLU Code: Code of Practice for the Safe Loading and Discharging of Bulk Carriers,
- c) Bulk cargo: A tank that is a structural part of the ship or permanently fixed in or on the ship.

or solid, liquid and gaseous substances in the hold that are planned to be transported without direct storage,

- d) Fumigation: Applying gaseous substances to a closed environment at a certain temperature to destroy harmful organisms.

The process of giving a certain amount of a fumigant and keeping it in the environment for a certain period of time,

- e) Ship: Ships that fall within the scope of legislation or international agreements to which we are a party,

f) Person concerned with the ship: Owner, operator, charterer, captain or their agents and real or legal persons authorized to represent the owner,

- g) IBC Code: International Code for the Construction and Equipment of Ships Carrying Hazardous Chemicals in Bulk,

- g) IGC Code: International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk,

- h) IMDG Code: International Code for Dangerous Goods Transported by Sea,

- i) IMO: International Maritime Organization,

- i) IMSBC Code: International Maritime Solid Bulk Cargo Code,

- j) ISPS Code: International Ship and Port Facility Security Code,

- k) Administration: General Directorate of Maritime Affairs,

l) Shore facility: A port, dock, pier, docking area, fuel, liquefied gas or chemical pipeline buoy or platform, including storage areas, where ships or marine vehicles can safely unload and unload cargo or take shelter.

- m) Container: Valid under the International Convention on Safe Containers (CSC Convention)

Load carrying equipment with documents in accordance with the standards,

- n) MARPOL: International Convention for the Prevention of Pollution from Ships,

o) Moisture content (MC): The amount of water, ice or other liquids expressed as a percentage of the total liquid mass of the sample of the bulk solid load,

- ö) SOLAS: International Convention for the Safety of Life at Sea,

p) Transportable maximum moisture content (TML): The maximum amount of moisture that a liquefiable solid bulk cargo carried on ships that do not have the characteristics specified in IMSBC Code Section 7.3.2 can contain without preventing its safe transport.

r) Carrier: Actual carrier, broker, ship owner, transport organizer, transport commissioner, ship agent who receives, offers or accepts offers for the transportation of any type of dangerous cargo on their own behalf or on behalf of third parties, and real and legal persons who carry out the transportation of dangerous cargo by road or rail in addition to sea within the scope of combined transportation.

- s) Dangerous cargo;

1) Petroleum and petroleum products included in Annex I, Appendix 1 of the International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78,

- 2) Packaged transported substances and objects given in IMDG Code Section 3,

- 3) Among the loads given in IMSBC Code Appendix 1, the phrase "B" and "A and B" in the group box in the characteristic table.

bulk cargoes,

- 4) Liquid substances with the word "S" or "S/P" in the "d" column of the table titled "hazards" in Section 17 of the IBC Code,

- 5) Gaseous substances given in IGC Code Chapter 19,

- ÿ) TMGD: Hazardous substance safety consultants authorized by the Ministry,

- t) TYUB: Coastal facilities organized by the Administration that handle dangerous cargo in packaged or bulk form.

Coastal Facility Dangerous Cargo Compliance Certificate, which must be obtained by

- u) Loading safety: The safety of the cargo transport unit or the load loaded into the ship's hold or onto the ship's deck.

and the safe fastening and stacking of loads to be loaded onto the load carrying unit,

ü) Shipper: The real or legal person specified as the "shipper" in the bill of lading, maritime transport document or multimodal transportation document, and the real or legal person on whose behalf or in whose name a transportation contract is made with a maritime transport company,

- v) Person concerned with the cargo: The sender, recipient, representative or transport organizer of the dangerous cargo,

y) Cargo transport unit (CTU): Designed and manufactured for the transport of packaged or bulk dangerous goods; road trailers, semi-trailers and tankers, portable tanks and multi-element gas containers, railway wagons and tank wagons, containers and tank containers.

REVISION PAGE

Serial No.	Revision No.	Revision Content	Review Date	Revisionist	
				Name Last name	Signature
1	TYER01	It has been revised in accordance with the new regulation.	01.08.2022	Hasan Tayfun YETKINER	
2	TYER02	The Facility Information Form has been renewed.	26.06.2025	Hasan Tayfun YETKINER	
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1. INTRODUCTION

The purpose of this guide is to ensure that hazardous material transportation activities by sea are carried out economically, quickly, safely, with high quality, with minimal negative impact on the environment and in harmony with other transportation activities.

FACILITY INFORMATION FORM

1	Facility Operator name/title	MARPORT PORT MANAGEMENT IND. TRADE INC.		
2	Contact information of the facility operator (Address, telephone, fax, e-mail and web page)	Address: Marmara Mah. Limanlar Cad. Marport Port No: 53/1 Beylikdüzü / İstanbul (Postal Code: 34526) Telephone: (0212) 866 52 00 Fax: (0212) 875 58 71 E-mail : gokhan.ozalp@marport.com.tr ; Tayfun.yetkiner@marport.com.tr ; Nihat.uygur@marport.com.tr Web page: www.marport.com.tr		
3	Name of the facility	MARPORT PORT MANAGEMENT IND. TRADE INC.		
4	Province where the facility is located	İSTANBUL		
5	Contact information of the facility (address, telephone, fax, e-mail and web page)	Address: Marmara Mah. Limanlar Cad. Marport Port No: 53/1 Beylikdüzü / İstanbul (Postal Code: 34526) Telephone: (0212) 866 52 00 Fax: (0212) 875 58 71 E-mail : gokhan.ozalp@marport.com.tr ; Tayfun.yetkiner@marport.com.tr ; Nihat.uygur@marport.com.tr Web page: www.marport.com.tr		
6	Geographical area where the facility is located	MARMARA REGION		
7	Port Authority to which the facility is affiliated and contact details	AMBARLI PORT MANAGEMENT		
8	Municipality to which the facility is affiliated and contact details	BEYLIKDUZU MUNICIPALITY		
9	Free Zone or Organized Industrial Zone where the facility is located Name of the Industrial Zone			
10	Validity date of Coastal Facility Operation Permit/Temporary Operation Permit Certificate	Document Number: 6507-G2 / Validity Period: 16.09.206		
11	Operating status of the facility	Own load and additional 3rd party (X)	Own burden (...)	3rd party (...)
12	Name and surname of the facility manager, contact details (telephone, fax, e-mail)	Turgay GUL Phone: (0212) 866 52 08 e-mail: turgay.gul@marport.com.tr		
13	Name and surname of the facility's hazardous cargo operations officer, contact details (telephone, fax, e-mail)	Mesut Sen Telephone: (0212) 866 54 19 e-mail: mesut.sen@marport.com.tr		
14	Name and surname of the facility's Hazardous Materials Safety Advisor, contact details (telephone, fax, e-mail)	Hasan Tayfun YETKİNER Telephone: (0212) 866 5377 e-mail: Tayfun.yetkiner@marport.com.tr		
15	Sea coordinates of the facility	41° 02' 54" K – 028° 24' 00" D (Guvercinlik Cape) 40° 43' 30" K – 028° 24' 00" D 40° 43' 30" K – 028° 43' 24" D 40° 58' 18" K – 028° 43' 24" D (Kefaldalyan Burno)		
16	Types of dangerous goods handled at the facility (loads within the scope of MARPOL Annex-I, IMDG Code, IBC Code, IGC Code, IMSBC Code, Grain Code, TDC Code and asphalt/bitumen and scrap loads)	Packaged dangerous goods within the scope of the IMDG code are handled in the port area.		
17	Hazardous cargo handled at the facility (Loads other than the IMDG Code among the types of cargo in Article 16 will be listed separately. Additional cargo requests will be forwarded to the port authority with the Annex-1 form. When deemed appropriate, they will be added to TYER)	In our facility, cargo subject to other IMO Codes outside the scope of the IMDG Code is not handled.		
18	Classes for handled cargoes subject to 18 IMDG Codes	IMO CLASS (2,1-2,2-2,3-3-4,1-4,2-4,3-5,1-5,2-6,1-8-9)		
19	Groups in the characteristic table for handled cargoes subject to the IMSBC Code	Cargo handling subject to the IMSBC Code is not performed.		
20	Types of ships that can dock at the facility	Container Ship and Dry Cargo Ship		

21	Distance of the facility to the main road (kilometers)		Distance to E-5 (D-100) Highway: 5.5 km			
22	Distance of the facility to the railway (kilometers) or railway connection (Yes/No)		There is no railway connection.			
23	Name of the nearest airport and distance to the facility (kilometers)		Istanbul Airport – 54 km			
24	Facility's cargo handling capacity (Ton/Year; TEU/Year; (Vehicle/Year)		2,000,000 TEU/Year			
25	Whether scrap handling is done at the facility		Scrap handling is not done.			
26	Are there border gates? (Yes/No)		No			
27	Is there a customs area? (Yes/No)		Yes			
28	Cargo handling equipment and capacities		10 STS Cranes, 5 MHC Cranes, 41 RTG Cranes			
29	Storage tank capacity (m³)					
30	Open storage area (m²)		428,810 km2			
31	Semi-closed storage area (m²)					
32	Closed storage area (m²)		6.103 m2			
33	Designated fumigation and/or degassing area (m²)		The necessary precautions are taken according to the number of containers to be fumigated and purified.			
34	Pilotage and tugboat services the name, title and contact details of the payer		Pilotage Services: MARİN Tugboat and Pilotage Inc. Tug Services: Expert Experts Maritime Trade and Industry. LTD.			
35	Has a security plan been created? (Yes/No)		YES- ISPS Code Security Plan			
36	Waste acceptance facility capacity (This section will be arranged separately according to the wastes accepted by the facility.)		Waste Type	Capacity (m³)		
			WASTE RECEPTION FACILITY EXEMPTION AVAILABLE			
37	Characteristics of areas such as docks/piers etc.					
	Dock/Pier No	Boy (Metre)	In (Metre)	Maximum water depth (Metre)	Minimum water depth (Metre)	Tonnage and length of the largest ship to berth (DWT-GT/Metre)
	Dock No.1	355	25	16	14,5	112.500 DWT / 300 mt.
	Dock No.2	169	25	14,5	14,5	14.300 DWT / 149 mt.
	Dock No.3	301	25	14,5	12	65.400 DWT / 255 mt.
	Dock No.4	400	25	16	15	110.000 DWT / 340 mt.
	Dock No.5	450	35-40	18	16	199.272 DWT / 399 mt.
	Name of the pipeline (if available at the facility)			Number (pieces)	Length (Meters)	Diameter (Inch)

1.2. The procedure prepared for dangerous goods handled and temporarily stored at the coastal facility is the Dangerous Goods Procedure and is presented in the Annexes section.

2. RESPONSIBILITIES

The responsibilities of the parties responsible for handling, transporting and storing Dangerous Goods are specified in Annex-19 of the Dangerous Goods Procedure. (SECTIONS 3.7-3.8-3.9-3.10-3.11)

3. HAZARDOUS LOAD HANDLING PRECAUTIONS

The measures taken and their implementation methods regarding the measures specified in Article 11 of the Regulation on the Carriage of Dangerous Goods by Sea are specified in the dangerous cargo procedure-annex 19. (SECTION 3.12)

4. CLASSES, TRANSPORTATION, LOADING/DISCHARGE, HANDLING, SEPARATION OF HAZARDOUS MATERIALS, STACKING AND STORAGE

All kinds of cold and hot work permits to be carried out within the port area are made using the FR.SEC.12 Work Permit Form (Annex-25) within the framework of the PR.SEC.08 Work Permit Procedure (Annex-24) prepared in accordance with the REGULATION ON HEALTH AND SAFETY MEASURES IN WORKING WITH CHEMICAL SUBSTANCES issued by the Ministry of Labor and Social Security dated MONDAY, August 12, 2013 and numbered 28733, and the REGULATION ON HEALTH AND SAFETY MEASURES IN WORKING WITH CARCINOGENIC OR MUTAGENIC SUBSTANCES issued by the Ministry of Labor and Social Security dated Tuesday, August 6, 2013 and numbered 28730.

Class 1, class 6.2 and class 7 hazardous cargoes are not handled in any way within the port area. If the products in question are detected during the operational activities carried out within the port, the situation is reported to the Port Authority and relevant units. There is a measurement station required to detect Class 7 cargoes within the port area.

CLASS 1 EXPLOSIVES



These types of loads are not stored in port areas within the scope of IMO MSC 1216 circular and are directly taken out of the port by sea. In addition, when handling these types of loads, special training is received, special KKM is used and appropriate safety measures are taken.

Loads in this class have 6 different subgroups;

Section 1.1 Explosive materials capable of causing mass destruction.

Section 1.2 Explosives that will not create a mass destruction effect but have a fragmentation effect.

Division 1.3 Explosives which are not intended to produce mass destruction effects but which are likely to produce incendiary effects or fragmentation effects or blasting effects or both.

Division 1.4 Explosives which do not present any specific damaging effects.

These are materials that, depending on their packaging, will only cause minor damage if they ignite or explode. An external fire will not cause these materials to ignite.

Example: There , dynamite , gunpowder , Fireworks Bullets, shrapnel and similar explosive materials. In mass or are those that risk that bullets may scatter particles around.

It is forbidden to take into the port. (Ex. bullets, dynamite, gunpowder and fireworks)

Division 1.5 Substances having great destructive power but not being very sensitive.

These are substances that are very difficult to explode under normal transport conditions.

Division 1.6 Substances which are not severely destructive and are also insensitive.

PRECAUTIONS TO BE TAKEN:

Necessary warning signs should be placed around the storage area against the possibility of fire and fire extinguishing systems should be installed. If there is such a substance in an environment where there is fire, fire intervention should be carried out behind a protective curtain.

It is recommended to use plenty of water in fire extinguishing. Equipment and protective materials that will not cause spark formation should be used in leak cleaning. Explosive waste should be stored in a separate area from other waste. It should be removed from the port for disposal as soon as possible.

CLASS 2 GASES

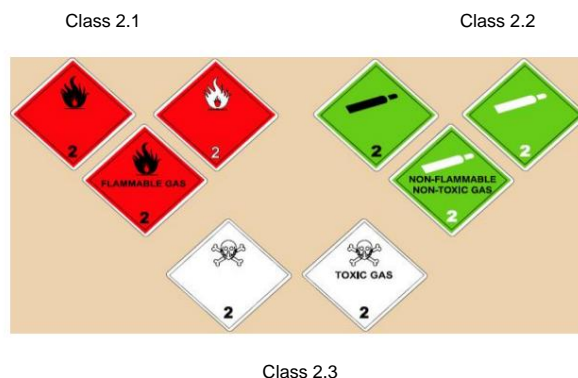
This class consists of compressed gases, liquefied gases, dissolved gases, refrigerated liquefied gases, mixtures of one or more gases with the vapor of one or more substances from other classes, gas-charged objects, aerosols, and chemicals under pressure.

A gas at normal temperature and pressure, but actually a gas, liquefied gas, or deep-frozen gas or solvent

They are chemical substances that are transported in dissolved form and that produce flammable, toxic or pressurized gases.

Some chemicals in this class, such as carbon dioxide, are not normally considered hazardous, but the gas is

The tank or tube in which the gas is carried is considered to be dangerous because it is transported and stored under the gas tank or tube, and is therefore included in this class. has been done.



Class 2.1 Red labeled ones are **flammable gas** (e.g. LPG, Natural gas, Acetylene),

Class 2.2 Green labeled non-flammable **pressurized** gas (e.g. Helium, nitrogen, Argon),

Class 2.3 White labeled cargoes contain **toxic gases** (e.g. Hydrogen fluoride, Carbon dioxide, chlorine)

This class has three subdivisions:

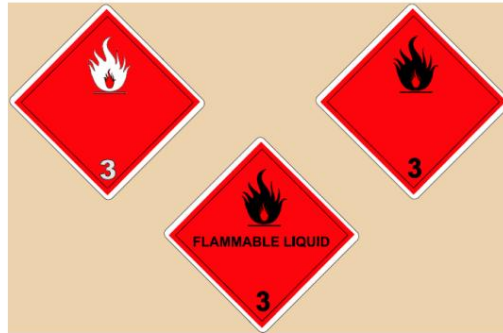
- Those in the Class 2.1 category, such as molten acetylene, **are flammable** (or explosive - these words have similar meanings, are gases that can be easily ignited by open flame or spark.
- Class 2.2 category includes gases that dilute or replace the oxygen normally present in the atmosphere, or oxidizing gases that cause or contribute to the combustion of other materials more rapidly than in air, usually by providing oxygen, or non-flammable, non-toxic compressed gases that are not included in other classes, such as carbon dioxide, nitrogen and air.
- Class 2.3 category is known to be toxic or corrosive enough to pose a danger to human health. contains toxic (poisonous) gases (some of which are also flammable): for example, bromine chloride.

PRECAUTIONS TO BE TAKEN:

Warning signs should be placed against the possibility of fire and fire extinguishing systems should be installed. The burning flammable gas container should be cooled by pouring plenty of water on the outside. Containers containing flammable gases have the risk of explosion even after being cooled with water. Therefore, cooled boxes and containers should be taken to the necessary protection areas against the risk of explosion.

Leaking loads containing toxic gases should never be approached, experts should be called and environmental safety should be ensured. Extinguishing agents for gas fires: KKT, CO2 and Halon. Places under the threat of toxic gases should not be entered without a breathing apparatus. Since the waste gases are stored in open areas, it is not possible to apply a method for disposal. However, if it is necessary to store them in closed areas, a ventilation system should be installed in the storage area.

CLASS 3 FLAMMABLE LIQUIDS



Example: Gasoline, Diesel Oil, Kerosene

The Class 3 category includes:

- Liquids or mixtures that emit flammable vapors at or below 61 °C.

Flammable liquids are liquids or mixtures of liquids or liquids containing solids in solution or suspension (such as paints, varnishes, lacquers, etc., but excluding substances that are classified in other classes because of their hazardous properties) that give off flammable vapours at or below 60°C in a closed cup test (equivalent to 65.6°C in an open cup test), normally called the "flash point".

This definition includes liquids offered for carriage at temperatures at or above their flash points and substances which emit flammable vapours at or below the maximum carriage temperature and which are transported or offered for carriage in the liquid state at elevated temperatures.

Flash point refers to the temperature at which vapors from a liquid can be ignited by an open flame: for example, paints, varnishes, polishes, benzene acetone, petroleum products, etc.

- liquid desensitized explosives are liquid solutions that suppress their explosive properties by creating a homogeneous liquid mixture explosive substances dissolved or suspended in it, e.g. nitroglycerin/nitrocellulose solutions.

In general, the lower the flash point, the greater the danger. Therefore, flammable liquids are They are grouped for packaging according to their boiling point (FP) and initial boiling point (BP).

- Liquids with a flash point (FP) below 61 °C and a boiling point (BP) equal to or below 35 °C, packaging group I.
They form the I.
- Liquids with a flash point (FP) below 23 °C and a boiling point (BP) above 35 °C, packaging group II.
forms II.

Liquids with a flash point (FP) between 23 °C and 61 °C (inclusive) and a boiling point (BP) above 35 °C constitute packing group III.

According to *the IMDG Code*, liquids with a flash point above 61 °C are not considered flammable liquids.

PRECAUTIONS TO BE TAKEN:

They are easily flammable and combustible liquids. (e.g. gasoline, diesel, kerosene)

In case of any leakage, the possibility of suffocating gas being released in the closed environment should be considered and the environment should be ventilated for a while before intervention. In case of fire, water should not be used, dry powder or foam fire extinguishers should be used.

Extinguishing Agents: Foam, DRC (Dry Chemical Powder), CO2 and Halon.

In case of leakage from containers containing such substances, they should be cleaned using appropriate absorbent kits and the resulting waste liquids should be disposed of using appropriate methods. The leaking container should be placed in the leakage pool.

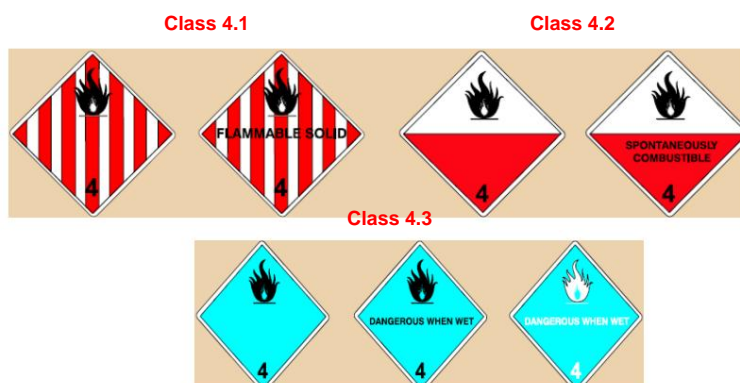
CLASS 4 FLAMMABLE SOLIDS

Class 4

4.1 Flammable solids,

4.2 Substances liable to spontaneous combustion,

4.3 Substances which, in contact with water, emit flammable gases



The **Class 4.1 category** consists of a range of flammable, combustible solids, including wetted explosives, self-igniting

We can include reactive substances, substances that burn readily, polymerizing substances and mixtures (stabilized) and solid substances that cause or contribute to combustion through friction, **for example, sulphur.**

Self-reactive substances are substances that have a temperature that is not constant and tend to undergo strongly exothermic decomposition without the participation of oxygen (air).

Self-reactive substances are subject to temperature control during transport if their self-accelerating decomposition temperature (SADT) is equal to or less than 55°C.

Solid desensitized explosives are substances that have been wetted with water or alcohol or diluted with other substances to form a homogeneous solid mixture to reduce their explosive properties.

Polymerizing agents are substances that, without stabilization, tend to undergo strongly exothermic reactions, leading to the formation of larger molecules or to the formation of polymers under normal conditions encountered in transport.

Substances **in category 4.2** are solids or liquids that naturally heat and ignite without the application of heat or fire; they are **spontaneously flammable: e.g. coal, compressed powdered grain.**

The **category Class 4.3** includes substances that are hazardous when wet; these are solids and liquids that emit gases when in contact with water; in some cases, the gas emitted can be ignited naturally or by open fire or sparks: **for example, chlorosilane, calcium silicomanganese.**

Liquid or flammable gas which, when reacted with water, is liable to spontaneous combustion or to emit flammable gases in dangerous quantities. are solid substances.

Some substances, when in contact with water, emit flammable gases that can form explosive mixtures with air.

LABEL DEFINITION

The three sub-sections of Class 4 all have the 'flame' symbol in the upper corner of the diamond shapes in different colours and must all bear the class number.



Those with **red and white striped** labels are flammable solid cargoes. (e.g. sawdust, naphthalene, coal dust, sulfur)

The label for **Class 4.1** substances is a white diamond-shaped label with vertical red stripes, the symbols and letters are in black and may or may not contain the words 'FLAMMABLE SOLID'.

Loads with **Half Red Half White** labels are loads that can ignite spontaneously and burn very strongly when heated and in contact with air. (For example, phosphorus, sodium, aluminum powder)

The Class 4.2 label is distinguished by a diamond shape with the upper half in white and the lower half in red, the words and symbol in black, with or without the words 'SPONTANEOUSLY COMBUSTIBLE'.



Loads with **blue labels** are flammable when in contact with water (e.g. Carbide, metal peroxides).

For Class 4.3 the diamond shape is blue, the symbol and lettering may be in black or white and may or may not contain the words 'DANGEROUS WHEN WET'.

PRECAUTIONS TO BE TAKEN:

In case of fire, loads with **red and white striped labels** should be intervened with plenty of water. All types of fire extinguishers are effective on these loads.

Carbon dioxide fire extinguishers should not be used on loads with **half red and half white labels**, dry powder fire extinguishers should be preferred. Water should never be used in fires of light metals such as aluminum and magnesium, as they generate very high heat.

Water should never be used on loads with blue labels.

When in contact with water, these charges cause the formation of flammable gases and the flame to become stronger. Therefore, dry powder fire extinguishers should be used.

Hazardous wastes must be stored in hazardous waste storage containers and sent to Disposal Facilities for disposal in accordance with the procedure.

CLASS 5 OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES

It contains two sub-sections containing substances with similar properties:

Class 5.1 Oxidizing substances



• **The Class 5.1 category** includes a number of **oxidising substances** (often referred to as **oxidising agents**) which do not burn readily on their own, but which release oxygen when heated, thus causing nearby objects to catch fire or exacerbating an existing fire: for example, hydrogen peroxide, calcium hypochlorite.

Class 5.2 Organic peroxides



• **Class 5.2 category includes organic peroxides**; these are unstable when heated and therefore must be transported in temperature-controlled environments. They may emit harmful gases or explode when decomposed (decomposed); many organic peroxides are particularly hazardous to the eye.

LABEL DEFINITION:

Class 5 labels both have a yellow diamond shape with a black 'flaming circle' symbol (symbolising 'oxygen') on them, but they are distinguished from each other in two ways.

Class 5.1 substances are labelled with the words 'OXIDIZING AGENT' or 'OXIDIZER' **written in black** and the class and subdivision number '5.1'.

Class 5.2 substances have the words ORGANIC PEROXIDE written in black and the 5.2 Class and subsection number.

Since the symbols and colors of both sub-sections are the same, it is important to distinguish the substances by their full class and sub-section number. (Different sub-sections for other classes are marked with color or symbol changes in addition to the explanatory text. are shown).

OTHER FEATURES:

Class 5.1 Oxidizing Substances. These substances are not normally flammable themselves, but they can cause other materials to burn by releasing oxygen into the environment. Even loading them with products such as sugar, flour, mineral oils, etc. can be very dangerous. They can be sensitive to friction and impact, and burning very quickly can lead to an explosion.

Class 5.2 Organic peroxides can be encountered as a derivative of hydrogen peroxides, in which one or two hydrogen atoms can be replaced by organic radicals. Organic peroxides have a thermally unstable structure and can be replaced by:

- They may have a decomposition that can be explosive,
- They can burn very quickly,
- They can be very sensitive to friction and impact,
- They react with other substances in a very dangerous way,
- They damage the eyes.

PRECAUTIONS TO BE TAKEN:

They are substances that are not flammable themselves, but cause other substances to burn by producing oxygen or otherwise.

Substances that are prone to spontaneous detonation, burn very quickly, are sensitive to impact or friction, and are harmful to the eyes are also included in this scope. (e.g. Hydrogen peroxide, Calcium carbonate, Ammonium nitrate, chromic acid)

In case of burning of such materials, fire extinguishers containing plenty of water or dry powder should be used.

Any material used to prevent contact with air **should not be used in the event of a fire involving oxidizing materials, as this will cause the fire to grow.** Contact with skin should be avoided.

The leaking container should be taken to the leakage pool. Chemical material leaking to the ground should be cleaned using chemical absorbent kits.

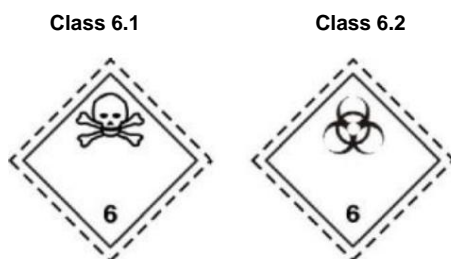
Absorbent kits used in cleaning and cleaned material residues should be stored in the hazardous waste storage area.

CLASS 6 TOXIC AND INFECTIOUS LIQUIDS/SOLIDS

This class is divided into two.

It should be noted that microorganisms that have been genetically modified and are not included here are evaluated under class 9.

Its two subsections contain two distinct series of harmful substances that are quite different from each other.



Substances in **Class 6.1** are all **toxic substances** (sometimes called 'poisons') - they can kill or cause serious injury or harm if swallowed, inhaled or in contact with skin; some poisons are distinguished by the damage they cause to food and should be stored away from food, e.g. chloroform, organochlorine pesticides. These are substances that are hazardous to human health or even lethal if swallowed, inhaled or in contact with skin.

Therefore, the doses required for poisoning by swallowing, breathing and touching these substances have been determined.

Their features can be listed as follows:

The toxic effect depends on contact with the human body, such as when an unsuspecting person inhales the gas released by the substance from a distance, or when they come into direct contact with the substance.

These are the types of accidents that may occur when these substances are transported by ship. Almost all toxic substances emit poisonous gases when burned.

A substance defined as "stable" on the list will not be accepted as a cargo if it is "not stable".

The Class 6.2 category includes various **infectious substances** : substances that contain living microorganisms (or toxic substances derived from them) that are known or suspected to cause disease in humans or animals.

This class of materials either contains pathogens or is very likely to contain pathogens. Pathogens are microorganisms, including bacteria, viruses, rickettsia, parasites, and fungi, that can cause disease in animals and/or humans.

Biological products obtained from living microorganisms, including vaccines, are also included in this class. Apart from these, "cultures" and "genetically modified microorganisms" are also considered in this class.

"Biological products" are products derived from living organisms, manufactured and distributed in accordance with the requirements of relevant national institutions and which may require special authorization by these institutions, and which are used for preventive health care, therapeutic purposes or for the diagnosis of diseases in humans or animals, or for development, experimentation or research purposes.

"Cultures" are the result of a process in which pathogens are deliberately spread.

"Patient samples" are materials taken directly from humans or animals, including, but not limited to, secretions, secretions, blood and blood components, tissues and tissue fluids, and body parts, for the purposes of research, diagnosis, examination, treatment, and prevention of disease.

"Medical or clinical waste" is waste resulting from veterinary treatment of animals or medical treatment of humans or bioresearch.

LABEL DEFINITION:

Since all the diamond-shaped labels in **Class 6** are white, the main element that distinguishes the subdivisions from each other is the symbol.

The main symbol **of Class 6.1** is the skull and crossbones and the Class number '6' is included on the label.

The symbol for **Class 6.2** is a circle with three crescents superimposed and, if used, the legend '**INFECTIOUS SUBSTANCE**' and the class number '6'. A variant version of this label includes the more comprehensive legend in black, "In the event of damage or leakage **immediately** Notify Public Health Authority" .

PRECAUTIONS TO BE TAKEN:

These are loads that are poisonous or disease-causing if swallowed or inhaled. (e.g. Methyl bromide, arsenic, methyl alcohol, medical waste)

In case of any leakage, since there will be a release of toxic gas , **it should not be intervened in any way**, the area should be moved away and the authorities should be notified. The leaking container **should not be intervened in any way**. Support should be obtained from authorized and trained persons on this subject.

CLASS 7 RADIOACTIVE SUBSTANCES

It is distinguished by the 'Clover' symbol, the class number '7' and the legend 'RADIOACTIVE' (in black). Diamond shaped
Other features of the label distinguish three 'categories' of radiation risk:



These spontaneously disintegrate in the process of emitting energy in the form of radiation or particles.

The classification of substances in this class is determined by the International Atomic Energy Agency, not by the IMO.

In order to declare a substance as radioactive, the substance must meet the specified threshold value (TBq/mass)

) must have an activity on it.

Although there are no subdivisions of the Class 7 category, the substances in it have potential hazard levels.

are placed into three categories, from I (lower radiation levels) to III (higher radiation levels).

From January 2001, ships carrying irradiated nuclear fuel (INF) were also subject to the IMO's requirement to carry this type of cargo.

Ships are required to comply with the conditions of *the INF Regulation*, which specifies strict shipping conditions and certification.

LABEL DEFINITION:

- **For low radiation level substances (Category I)**, the label is white with a single vertical red bar after the word 'RADIOACTIVE'.

- **Category II (medium radiation levels)** is indicated by a diamond-shaped label with the upper half yellow and the lower half white, with two vertical red bars following the legend.

- **Category III (high radiation levels) substances** have a yellow/white diamond shape similar to Category II, but with three vertical red bars. Additional shipping information is placed between the bottom corner of the label and the legend. Finally, there is a separate label for fissile substances; a white background

the word '**FISSILE**' must appear in the top half of the label and the words 'CRITICALITY SAFETY INDEX...' in a black outlined box in the bottom half. In accordance with all other labels, the text Class 7 must appear in the bottom corner.

OTHER FEATURES:

Any material whose activity concentration and total activity rate in the entire material exceeds the rates specified in this regulation is considered radioactive.

Materials that are an internal part of transportation vehicles and that move on roads that do not include normal land, sea and railway routes and in structures where the necessary precautions have already been taken,

Materials implanted in humans or animals for diagnosis or treatment, materials in approved products that reach the end consumer, and some other examples, do not fall into this class.

In the transportation of such substances, approvals from the authorities of either the loading country or both the loading country and the discharge country may be required.

PRECAUTIONS TO BE TAKEN:

Radioactive materials that emit ionizing rays. They cause radiation-related diseases.

(For example, active gamma sources used in radiotherapy; Cobalt Co-60, Po-210) Radioactive substances are substances that are carcinogenic and fatal if touched or approached.

It should definitely be avoided. In cases where intervention is required, the area should be evacuated immediately and Çekmece Nuclear Research and Education Center (ÇNAEM) should be contacted.

For disposal, Çekmece Nuclear Research and Education Center (ÇNAEM) should be contacted.

CLASS 8 CORROSIVE CATEGORY



All **are corrosive**; liquid or solid substances that cause severe tissue damage by burning, injuring or destroying living tissue. are substances.

They also cause wear and tear on other cargo, packaging, or the ship or vehicle carrying them, especially

They corrode (melt or destroy) metals more quickly when wet.

This class includes a wide variety of acids and alkalis: for example, hydrochloric, sulfuric, nitric and acetic acids, sodium hydroxide are corrosive substances with acidic and basic properties, which give off gases on contact with metals. (For example, Hydrochloric Acid (Salt Spirit), Sulfuric Acid, Nitric Acid (Caustic Soda), Sodium Hydroxide (Caustic), Potassium Hydroxide, Sodium Hypochlorite.

LABEL DEFINITION:

Corrosive substances in Class 8 are distinguished by a diamond-shaped label with the upper half white and the lower half black, and the graphic black symbol shows on the left side a liquid substance pouring from a test tube onto a horizontal strip (and corroding it) and on the right side a similar test tube pouring onto a human hand.

The legend '**CORROSIVE**' (in white) may or may not be displayed. The class number is displayed in the lower corner.

OTHER FEATURES:

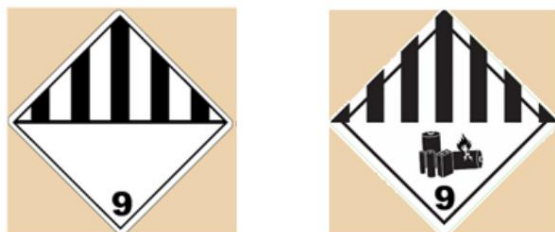
These substances cause serious injuries when they come into contact with living tissue through chemical reactions and can seriously damage other loads and transport vehicles in the event of leakage. Some of these substances can also cause serious damage with the vapors they release.

All substances in this class are more or less corrosive to metals and textiles. Some also generate heat when in contact with water or organic matter.

PRECAUTIONS TO BE TAKEN:

Since the vapors of such substances are dangerous when inhaled or in contact with the eyes, glasses, masks, protective clothing and acid-protective gloves should be used when approaching.

CLASS 9 MISCELLANEOUS HAZARDOUS SUBSTANCES AND ARTICLES



A group of miscellaneous hazardous substances and articles; those that are determined to be hazardous but do not meet the definitions in other classes. contains loads that do not comply. This certainly does not mean that these substances are less dangerous than those in other classes. They must be treated with the same care and attention as the others. This class includes two UN special numbers (marine pollutants), which are given to liquid and solid substances that are dangerous to the environment; they are dangerous to the sea, but not to humans.

Other hazardous substances and products other than the substances and products listed above are evaluated in this class and It is divided into subgroups as follows;

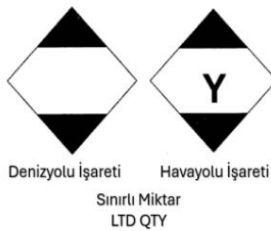
- Substances that can endanger health when inhaled in fine dust form,
- Substances that emit flammable vapors,
- Lithium batteries,
- Capacitors,
- Life-saving equipment,
- Substances and objects that can form dioxins in the event of fire,
- Substances transported or offered for transport at high temperatures,
- Environmentally harmful substances,
- Genetically modified microorganisms (GDMOs) genetically modified organisms (GMOs),
- Ammonium nitrate based fertilizers,
- Substances and objects that pose a hazard during transport but do not fit into other class definitions.

Marine pollutants affect marine life through their potential for proliferation or high toxicity; substances that are harmful to the sea (as defined in the IMO Convention for the Prevention of Pollution from Ships - MARPOL 73/78) may or may not be directly harmful to humans or ships.

These substances are products that cause bioaccumulation in marine products or have a toxic effect on aquatic life and are subject to MARPOL regulation and such substances are transported in accordance with the provisions of this agreement.

The code identifies and indicates such substances. If these substances also pose a danger to persons in the transport chain, they are classified in Classes 1 to 9. If they are not hazardous, they are classified as substances hazardous to the environment, according to 2 special UN

They shall be classified as one of the following numbers, solid or liquid, in Class 9 unless otherwise stated. *The code* indicates how these substances should be transported under certain conditions.



Limited **quantity** " is translated into Turkish as "limited quantity" and is a term generally used in the transportation of hazardous materials. It refers to packages that contain certain amounts of hazardous materials and are subject to certain rules. In this type of transportation, there may be exemptions from some regulations.

CLASS MHB: HAZARDOUS MATERIALS IN BULK (BC CODE)

In conclusion, these are the 9 IMDG classes and their subdivisions. There are some substances and materials that complicate the situation a bit, such as: Some solids are only hazardous when carried as bulk cargo (**MHB - hazardous bulk substances**), i.e. loaded directly into the cargo area of the ship without any protection to prevent their spread; references to MHB can be found in the index (see, for example, magnesium oxide (uncured), but more information can only be found in the IMO's separate Bulk Cargo Regulation (BC Regulation).



Substances containing a mixture of classified and non-hazardous substances or substances in solution are as follows:

- Hazardous wastes
- Cargo shipped after fumigation
- Materials transported at high temperatures
- Lithium is a phil
- Warning sign of asphyxiant gas used in cooling

LABEL DEFINITION:

Marine pollutants in Class 9 (and indeed substances of other environmentally hazardous classes) are identified by a rather different means. *In the IMDG Code* they are called 'sign'; **the marine pollutant symbol rather than a 'label'**: the symbol is a black outlined fish with a large black cross inside a white triangle. The words 'MARINE POLLUTANT' appear in black below the fish.

A sign similar to the sign used to indicate marine pollutants, for hazardous materials transported in high temperature conditions. should be used to indicate the hazards inherent in substances. This marking should appear on the sides of the tank, together with details of the maximum temperature the substance is expected to reach during transport.

The high temperature sign consists of a white triangle with a red border (the extreme apex), inside which is a vertical red and white thermometer tube.

This should be indicated by adding **a fumigation warning sign, as found in the IMDG Code, to the end of the doors of freight containers and ro-ro vehicles that contain fumigated cargo** . This is a large white rectangle with the word DANGER at the top, skull and crossbones at the bottom and the words THIS UNIT IS UNDER FUMIGATION WITH (.....) ON (.....)

(This unit contains the words (drug name).....(day, time information).....subject to fumigation on the date of.....) INSIDE DO NOT ENTER. All text is in black.

OTHER FEATURES:

With the exception of MHBs, all these substances are given special attention *in the IMDG Code* . An important point to remember is that a given substance, mixture or solution may present more than one hazard and be covered by the handling rules and instructions for more than one class *in the Code* .

For example, many substances in Classes 1 to 9 are also classified as marine pollutants for the class to which they belong. In addition to the necessary precautions, they must be processed. The classification of dangerous goods into 9 classes and their sub-sections by *the IMDG Code* only benefits cargo handling personnel, as the nature of the danger posed by these goods in very different packaging forms can be recognized at a glance.

PRECAUTIONS TO BE TAKEN:

Before coming into contact with such materials, personal protective measures specified in the MSDS form should be taken. The material must be cleaned and removed using the methods written on the MSDS certificate.

PACKAGING AND PACKAGING OF DANGEROUS LOADS

The hazards inherent in dangerous goods tend to vary depending on how the goods are 'protected' (packaged); of course, packaging intended to protect dangerous goods must be well made, in good condition, unaffected by the substance it carries, capable of withstanding the usual risks during transport and handling by sea, etc.

Thus, in order to protect the health and safety of everyone involved in the transport chain, *the IMDG Code* pays considerable attention to **product protection** or packaging. First of all, *the Code* distinguishes between five basic product protection categories and determines which types of dangerous goods can and cannot be transported in which protection category.

1. Conventional packaging

2. Intermediate bulk containers and large packages

3. Portable tanks, storage containers and tankers for liquids and gases (substances).

4. Portable tanks for bulk cargo packaging and solid hazardous materials

Additionally, *the Code* recognizes that some rules may be relaxed if small amounts are carried.

5. Limited quantities

1- Conventional packaging includes cardboard boxes, fiberboard boxes, bags, barrels and tin cans.

The IMDG Code specifies a maximum weight capacity of 450 litres or 400 kg for packaging to be included in this category and details construction instructions and performance tests for packaging, without which the packaging will not be permitted to carry dangerous goods. To assist those handling the shipping or filling process in ensuring that packaging materials are compatible with the recommended contents, *the Code* specifies a range of packaging and indicates the appropriate type of packaging for each listed substance. Approved packagings can of course be further protected by the assembly of 'load units' (for example on pallets covered with plastic protective sheeting).

They can also be stuffed into freight containers or vehicles; the additional volume of the *IMDG Code* provides practical advice, precautions and recommendations on how dangerous goods should be properly packaged and secured in containers and ro-ro vehicles.



2- Intermediate bulk containers (IBC); They are large rigid or flexible packaging with a capacity of 1250 <x <3000 liters (3m3) or 3 tons.

Rigid intermediate bulk containers are made of metal, fibreboard, wood, rigid plastics or **composite materials** (mixtures of more than one material), while flexible intermediate bulk containers are typically made of fleece or plastic film. *The Code* specifies six types of intermediate bulk containers, along with performance tests and details of the hazardous cargo approved for each type.

Some hazardous cargoes may be carried in intermediate bulk containers (IBCs) without further protection, but *the Code* specifies that certain items (liquids in metal, rigid plastic or composite intermediate bulk containers and certain solids in flexible, fibreboard or wooden intermediate bulk containers (IBCs)) must have secondary protection (e.g. by stuffing into freight containers or vehicles). Other items are excluded from carriage in intermediate bulk containers (IBCs) altogether.

Large packagings can be used to transport hazardous materials over 400 kg net weight or 450 litre capacity or a maximum volume of 3 m3 . Such packagings have rigid or flexible inner linings and are made of similar materials to those used in intermediate bulk containers. Certain products (e.g. Class 6.2) may not be transported in large packagings.



3- Tankers and portable tanks are classified as having a size of 450 liters and above for liquids and 1000 liters and above for gases. *The Code* specifies seven IMO tank types for the transport of various liquids and gases: Three of the tanks are designed to carry liquids, two to carry non-refrigerated liquefied Class 2 gases, and the other two to carry refrigerated liquefied Class 2 gases. The specifications specify the maximum working pressure settings allowed for the use of the tanks, the pressure

It includes discharge valves, filling rates, permitted travel times, methods of fixing to the road or other vehicles (permanently or temporarily), and conditions of use.



4-Solid bulk cargo packagings; The fourth protection category concerns solid dangerous goods transported in bulk cargo packagings and portable tanks. *The Code* provides that certain solid substances (e.g. ammonium nitrate fertilisers) can be loaded directly into bulk cargo packagings (such as bulk containers, road or railway vehicles or portable tanks) without any form of intermediate protection. The general requirements of *the Code* must be met by these types of **solid bulk cargo packagings** and certain specific requirements must also be met; for example, solid bulk substances of Classes 4 and 8 in bulk cargo packagings with watertight closures.

Cargo packaging for solid bulk materials of Class 5.1 must not allow the materials to come into contact with wood or other combustible materials.

5- Limited quantities of certain dangerous goods may be exempted from certain transport rules (regarding packaging, marking, labeling, etc.). In order to meet the requirements of *the Code*, the goods must be in the 'inner packaging' inside the 'outer packaging'. If the relevant substance can be shipped under limited quantity conditions, the Dangerous Goods List (DGL)

Column 7 will give the maximum quantity in each inner packaging. The total maximum gross weight of the final packaging shall not exceed 30 kg, or 20 kg for loads in trays carrying loads covered with plastic protective sheeting (outer packaging). The 'limited quantities' condition does not apply to all packing group I goods of Class categories 1, 4.2, 6.2 or 7, or to parts of other classes; shippers should read the relevant section of *the IMDG Code* (Section 3.2, DGL column 7) very carefully before assuming that particular loads can be packed in accordance with this condition.



Packing groups (PG) of dangerous goods

The second element of 'protection' covered by the *IMDG Code* is the division of dangerous goods **into packing groups (PG)**. Substances of multiple classes (other than Classes 1, 2, 6.2 and 7) are placed in one of three packing groups according to the degree of hazard they represent.

- Packing Group I (PG I) represents 'major hazard'.
- Packing Group II (PG II) represents 'medium hazard'.
- Packing Group III (PG-III) represents 'minor hazard'.

Almost all packaging used for the carriage of dangerous goods by sea must be **type tested**, i.e. all samples (samples) must pass the tests specified in the Code. Up to four tests are predetermined to reflect the different levels of hazard. For example, packaging for PG I (Packing Group I) goods must pass a 1.8 m drop test, while PG II packages must pass a 1.2 m drop test and PG III packages must pass a 0.8 m drop test only. Most listed dangerous goods are placed in one of three packing groups and *the Code* determines for each class what type of packaging is to be used within that packing group.

Type testing is carried out by test units and a test certificate is issued for each test. Packaged dangerous goods should be transported only in packages that have been type-tested and arranged in accordance with the specifications *in the Code*.

AMBALAJ GRUPLARI			
Grup	PG I	PG II	PG III
Tehlike	BÜYÜK	ORTA DERECELİ	KÜÇÜK
Düşme Testi	1.8m	1.2m	0.8m
Sınıf 3 Parlama noktası Kaynama noktası	FP < 61°C BP < 35°C	FP < 23°C BP > 35°C	FP 23-61°C BP > 35°C
Sınıf 6 Zehirlenme Riski	ÇOK YÜKSEK	CİDDİ	NİSPETEN DÜŞÜK
Sınıf 8 Görünür cilt hasarı için geçen süre	< 3dk	> 3 – < 60dk	> 60dk – 4 saat

There are a number of different factors that go into deciding on the appropriate packing group for substances in various classes. For example, For flammable liquids, flash point and initial boiling point are taken into account.

- All liquids with a flash point of 61 °C and an initial boiling point of 35 °C or below are placed in Packing Group I (PG I).
- Substances with a flash point above 23 °C and an initial boiling point above 35 °C are placed in Packing Group II (PG II).
- Substances with a flash point between 23°C and 61°C and an initial boiling point above 35°C are placed in Packing Group III (PG III).

As there are exceptions to these 'rules', those handling the shipping and stuffing process should check Class 3 items carefully when choosing packaging type.

Similarly, the placement of certain toxic substances in Class 6.1 category into packing groups is based on their degree of **toxicity** through ingestion, inhalation or absorption through the skin. The placement of corrosive substances (Class 8 category) into Packing Group (PG) is based on the apparent rate of death or desiccation of the skin caused by such substances. In addition to basic information on the type of approved packaging used for substances within the class, all these factors and other relevant quantity details likely to affect the Packing Group (PG) are given for each class category *in the Code*.

STACKING CATEGORIES AND STACKING RELATED INFORMATION SOURCES

Thanks to the second condition of prior knowledge, port and ship planners can allocate suitable and safe storage and stacking locations for hazardous cargoes.

These locations and conditions should be considered for three main reasons:

- Environmental conditions must be suitable for hazardous cargoes in terms of temperature (especially substances that are unstable at high temperatures or substances with a low flash point), protection from water (rain, waves, condensation, etc.), etc.;

- Loads may be relatively safe on their own, but can be quite dangerous if stacked or stored near other materials; for example, oxidising agents are particularly dangerous if they are near flammable materials or materials that decay when hot.

- Loads may have detrimental effects on other loads being stacked or stored (such as food items).

The IMDG Code provides detailed information on these important reasons; these are where dangerous goods should be stowed and how they should **be segregated** from other goods. This is of course the case for goods stowed on ships, but we will see that the conditions and warnings can also apply to shore storage and even container stuffing.

In effect, IMO requirements provide a framework for port authorities preparing their own regulations for the safe transport, handling and storage of dangerous goods. It is therefore very useful to take a closer look at the stacking and segregation requirements in the IMDG Code as a basis for good port practice.

First, stowage. In Volume 1, Chapter 7.1 (Stowing), *the IMDG Code* defines two groups of ships: (1) cargo ships and ships carrying up to 25 passengers, and (2) passenger ships carrying more than 25 passengers, and some broad rules regarding three stowage options (on deck only, on deck or below deck, or prohibited). Using these variables, five **stowage categories** are defined, from A to E.

Each substance on the Dangerous Goods List (DGL) *of the Regulation* (Column 16) refers to one of these categories (for example, crotonic acid is stacking category A) and in some cases additionally gives details of specific stacking conditions. Additional explanation on stacking is also given in:

- Volume 1, Section 7.1 for living spaces, foodstuffs, marine pollutants, solutions and mixtures etc. and Special condition codes - Column 6 of the Dangerous Goods List (DGL), with explanations, are in Volume 2, Section 3.3. For example, in special condition 132, it is recommended that this substance be protected from direct sunlight during transport and stored in a cool, well-ventilated place and kept away from any heat source.

Clearly, the requirement that hazardous cargoes be kept away from ships' 'living spaces' should be implemented immediately in ports, where living spaces are interpreted as office buildings, workshops, toilets and other buildings used by people.

Advice should also be given on protection from sunlight and other radiant heat, ventilation, and keeping away from foodstuffs etc. (perhaps with simple shelters in the case of gas tanks and cylinders, which must of course be protected from steam pipes and sources of flame and spark). Substances which are required *by the Code* to be stowed 'on deck only' should never be stored indoors unless there are separate buildings specially equipped to accommodate them. Wherever *the Code* warns of damage to the marine environment (marine pollutants), arrangements should be made for special storage areas, where applicable, substances should be drained into a pit or storage tank and not dumped directly into the sea; in the event of a spill, the substance should be hosed down to the pit for later recycling, thus eliminating the risk of polluting the harbour waters.

Thus, when preliminary information on dangerous cargoes arrives at port, those responsible for storage planning should look for items in the Code in the following order (as ship planners do in stowage planning):

- Identify the UN Number by searching for the substance by its UN Number in the Dangerous Goods List (DGL) or by name in the main (alphabetical) Index;
- check the special conditions and stacking category in DGL Column 16;
- Check some special preparation requirements in column 6 of DGL.
- Check some general conditions in Section 7.1 Stacking in Volume 1. Finally, check the segregation conditions in Section 7.2 of Volume 2 for recommendations on segregation and segregation of classes.

In addition to general recommendations and requirements on stacking, *the Code* provides specific information on segregation; stacking and storage conditions for certain hazardous loads at a safe distance from:

- other classes of hazardous cargo (e.g. explosives safely separated from flammable liquids);
- hazardous cargoes of the same class (e.g. corrosive acids completely separated from corrosive alkalis)
- non-hazardous loads (e.g. keeping toxics out of food materials).

The IMDG Code provides very detailed rules for the segregation of such **incompatible** substances on board ships, defining **incompatibility** as situations where a hazard arises due to a leak, spill or other accident when two substances or articles are stowed together.

ISTIF KATEGORİLERİ VE ISTİFİLE İLGİLİ BİLGİ KAYNAKLARI

KATEGORİ	A	B	C	D	E
En fazla 25 yolcu taşıyan yük gemileri	Güverte üzerinde veya altında	Güverte üzerinde veya altında	Sadece güverte üzerinde	Sadece güverte üzerinde	Güverte üzerinde veya altında
25'ten fazla yolcu taşıyan yolcu gemileri	Güverte üzerinde veya altında	Sadece güverte üzerinde	Sadece güverte üzerinde	Yasak	Yasak

Ayrıca bkz: Cilt 1; Bölüm 2 - Sınıflandırmalar ve Bölüm 7
Cilt 2; DGL ve Bölüm 3.3

FOUR ELEMENTS OF DECOMPOSITION

The code describes the payload separation process in detail, using four separation terms where necessary:

- 'away from'
- 'separated from.....'
- 'separated from by a full section or warehouse' and
- 'separated longitudinally from by an intervening bulkhead or hatch'

These terms have different interpretations depending on where they are applied; for packaged dangerous goods, for cargo containers carrying dangerous goods, for transport units (e.g. road vehicles) carried on RoRo ships and barge carriers, and for the separation of bulk cargo containing chemical hazards from packaged dangerous goods. The Code provides detailed explanations in writing, as well as tables and graphics for the various applications;

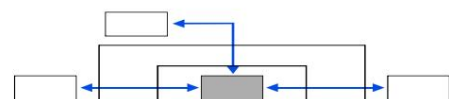
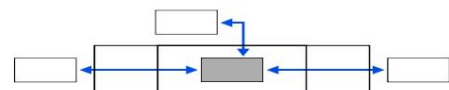
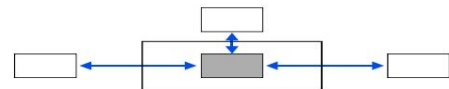
AYRISTIRMA TERİMLERİ

'...dan uzak'

'...dan ayri'

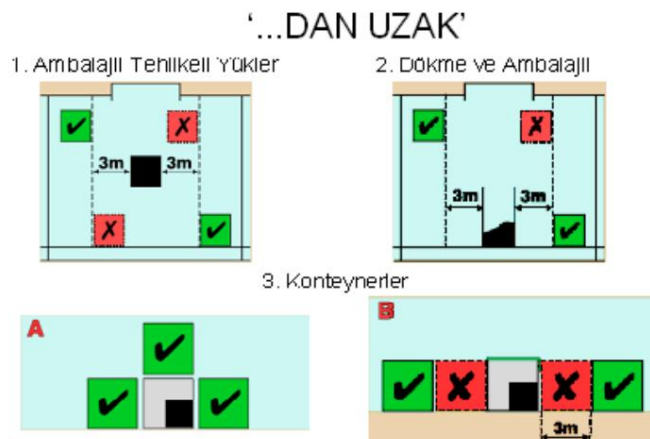
'...dan bir tam bölme
veya ambarla ayri'

'araya giren bir tam
bölme veya ambarla
uzunlamasına ...dan
ayri'



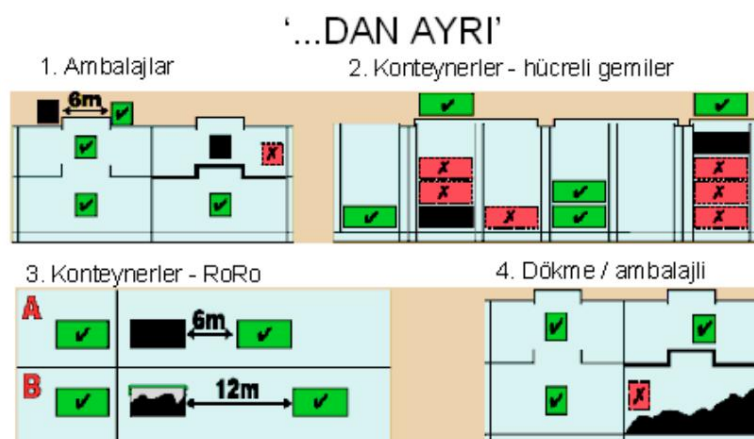
1. The **'away from'** category requires the least amount of separation. The separation required varies depending on the nature of the storage container:

1. For packaged dangerous goods, this means keeping the packaging packages in question in the same hold (or in the same hold area on deck) separated from each other by enough distance to prevent dangerous interaction in the event of an accident, but ensuring that there is a horizontal distance of at least 3 metres between them.
2. The same rule applies to bulk cargoes containing chemical hazards and dangerous cargoes with improper packaging.
3. The closed cargo (A) container itself provides adequate separation, i.e. segregated and separate containers 'far apart'
The dangerous goods packed inside are considered to be sufficiently segregated and these containers can be stacked next to or on top of each other. In contrast, open containers, (B) (open sides or top, fixed, hard roof, and/or covered with tarpaulin or similar removable material instead of side walls), cannot provide internal separation and therefore must be kept 'one container distance' from each other (minimum fore-aft distance of 6 metres, meaning 2.4 metres from side to side – 3 metres for RoRo vessels).



2. The category 'departing from' is more restrictive:

1. For loose packaging, stacking is done in a separate hold on the lower deck or on multiple decks with fire and liquid resistant hatch covers, on different decks within the same hold. For above deck stacking, segregation is done horizontally. must be done with a distance of at least 6 meters.
2. Containers on bulkhead ships (or other container ships with fixings that enable containers to be stacked permanently during transport) must be separated horizontally by a container distance or a **bulkhead** (a steel wall separating the ship into watertight compartments from one side to the other). - in open containers the distance must be two containers and they must not be stacked in the same vertical line unless separated by a deck. The same principles apply to container ships without hatch covers (open top container ships).



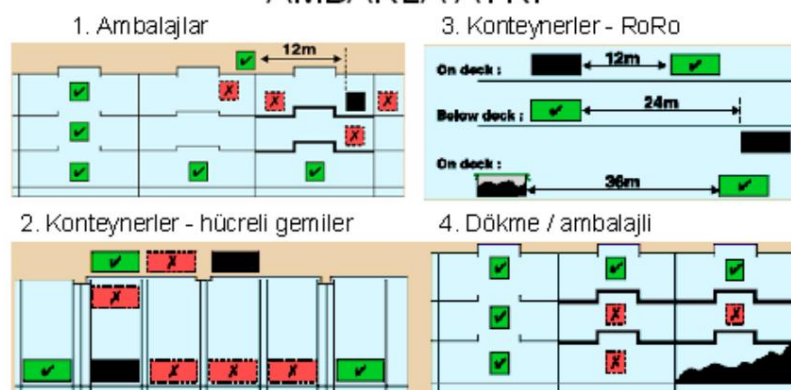
3. On Roro ships, cargo units – loose packaging or containers – must be separated from each other in all directions on the upper deck by at least 6 metres, fore and aft 6 metres or 3 metres side to side (side to side) or one bulkhead for closed units (A) on the lower deck and at least 12 metres or one bulkhead for open storage container units (B).
4. Bulk cargoes should be stored in separate holds or on different decks separated from each other by fire and liquid resistant intermediate decks.

3. 'separated from by a bulkhead or hatch';

The third category of separation is even stricter:

1. Loose packagings shall be separated horizontally by a complete hatch or bulkhead, for example two bulkheads. On multi-decked ships, two decks or one deck and, provided that the tween decks are fire and liquid resistant, one compartment is sufficient. The minimum horizontal separation for stowage on deck is 12 metres (even if other packaging is in an overhead compartment below deck).
2. Closed containers, unless separated by a deck, shall not be stacked on the same vertical line – as for the 'separated by' category; above deck the horizontal separation shall be at least one container distance from stem to stern (two container distances side to side), or one bulkhead below deck, while open containers shall be two containers apart or two bulkheads and three containers side to side. For open-top container ships, the closed container restrictions are as follows: for deck containers for stem to stern there shall be one container distance and not in or on the same hold, two container distances side to side and not on the same hold and on the same vertical line.
3. On RoRo vessels, cargo units must be at least 12 metres apart when stored on deck and 24 metres and one deck apart when stowed below deck. Open storage container units may be stowed below deck at least 36 metres apart on deck and only if they can be separated by two bulkheads or two decks. Side-to-side stacking above and below deck is prohibited.
4. Bulk cargoes must be separated from unsuitable packagings by a full bulkhead or hold, for example two bulkheads or two fire and liquid resistant intermediate decks.

'...DAN BIR TAM BÖLME VEYA AMBARLA AYRI'



4. Separated Longitudinally from '.....' by a Partition or Hold;

Finally, the most stringent segregation category - longitudinally separated from '...' by a complete bulkhead or hatch

1. For loose packaging, it is strictly a complete hold - two compartments; vertical separation is not allowed, even if there are two fire and liquid resistant decks in between. Above deck stowage should be at least 24 metres away from any unsuitable packaging, even if there is a bulkhead or deck in between.
2. The segregation conditions for containers on compartmented ships (and other equipped container ships) are the same. Vertical segregation is strictly prohibited and the separation above deck must be at least 24 metres, with a bulkhead and under deck at least 24 metres (this excludes side-to-side segregation). For open cargo, stowage below deck must be separated by two bulkheads. For open-top container ships, the fore-and-aft conditions specified for closed containers are at least 24 metres horizontally and must not be in or above the same hold. Vertical and side-to-side segregation are also prohibited.
3. For stacking on RoRo vessels, storage container units shall be separated by at least 36 metres on deck (48 metres for open units) and by at least two bulkheads or 36 metres and two decks below deck. Open units cannot be stacked below deck, while the side-to-side separation of any two containers, open or closed, is disregarded for separation distance reasons.

[illegible]

For example, **FORMIC ACID (a Class 8 corrosive liquid substance, UN Number 1779)** has no specific segregation requirement in its schedule and therefore only meets the requirements of the class to which it belongs: 'away from' Classes 2.1, 4.1, 4.2 and 4.3, 'separated from' Classes 1.3, 1.4, 1.6, 5.1, 5.2 and 7, 'separated from ... by a full partition or hold' Class 6.2 and 'separated longitudinally from ... by a full partition or hold' Classes 1.1, 1.2 and 1.5. 'X' entries in other columns indicate the relationship of the segregation requirements (if any) to other classes, as shown in the individual DGL Tables. On the other hand, **BROMINE CHLORIDE (Class 2.3 toxic gas, UN Number 2901)** also carries the subsidiary risks of Classes 5.1 and 8 and in its DGL Schedule it is recommended that the segregation conditions be the same as those of Class 5.1 but retain 'separated from Class 7'. Other substances may be given specific segregation rules such as 'separated from chlorine' or 'separated from acids', the entries for Class 1 explosives are all marked with (*), meaning that special compatibility rules must be applied; reference has already been made to compatibility groups (Step 2.4). The individual Schedules assign letters to Class 1 substances (A to L, N and S) and substances sharing the same letter may be stacked together, regardless of their class and subdivision.

The addition of 'secondary hazard' classes to a particular substance increases the complexity of reading the segregation table. Each of the secondary risks may require further and more stringent segregation and therefore *the Code's* schedule should be consulted both for the substance and for each of the secondary risks. Those planning to stow on board will find it useful to consult other published tables where segregation is shown on separate lines for class and additional risk classes.

We must remember that the segregation requirements detailed in the IMDG Code are specifically for stowage on board ships. It is possible for port planners to use the regulations as a basis for segregating dangerous goods for storage in port, and in fact *the Code* recommends this.

It means the interpretation of expressions such as 'away from', 'separated from' and similar expressions in terms of separation in open and closed storage areas.

However, there is a more directly relevant guide from IMO called '*Recommendations on the Safe Carriage of Dangerous Goods and related activities in Port Areas*'.

This document contains a port storage segregation table in line with *the IMDG Code* stacking table. However, it excludes Class 1 (explosives), Class 6.2 (infectious substances) and Class 7 (radioactive substances) substances because these substances are not routinely loaded and unloaded through port warehouses and special arrangements must be made for their handling

The table defines only three separation categories for port storage:

- '0' indicates pairs of hazardous substances that do not need to be separated (unless required by separate tables - they should always be checked first);
- 'A' specifies the condition for parsing the pair 'away' from the other class, while 'S' requires parsing between pairs in the category 'away from'.

For example, according to the Table, **Class 2.2 substances** (non-toxic, non-flammable gases) must only be segregated from Class 3, 4.2 and 5.2 substances, and these segregations are 'away from', i.e. category 'A'. Flammable liquid substances (Class 3), on the other hand, must be stored 'away' from substances in Classes 2.2 and 4.3, and 'segregated' from loads in Classes 2.1, 2.3, 4.2, 5.1 and 5.2.

LİMAN SAHALARI İÇİN AYRIŞTIRMA TABLOSU												
	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	8	9
Alev alabilen gazlar	2.1	0	0	0	S	A	S	S	S	0	A	0
Yanıcı ve zehirli olmayan gazlar	2.2	0	0	0	A	0	A	0	0	A	0	0
Zehirli gazlar	2.3	0	0	0	S	0	S	0	0	S	0	0
Alev alabilen sıvılar	3	S	A	S	0	0	S	S	S	0	0	0
Alev alabilen katılar	4.1	A	0	0	0	0	A	0	A	S	A	0
Kendiliğinden yanıcı maddeler	4.2	S	A	S	S	A	0	A	S	S	A	0
Suyula temas ettiğinde tehlike arz edenler	4.3	S	0	0	S	0	A	0	S	S	0	A
Oksitleyici maddeler	5.1	S	0	0	S	A	S	S	0	S	A	0
Organik peroksitler	5.2	S	A	S	S	S	S	S	S	0	A	S
Toksik (zehirli) maddeler	6.1	0	0	0	0	0	0	A	A	0	0	0
Aşındırıcı (korozif) maddeler	8	A	0	0	0	A	A	A	S	S	0	0
Diğer tehlikeli maddeler ve eşyalar	9	0	0	0	0	0	0	0	0	0	0	0

0 = Ayrıştırma gerekmez

A = '...dan uzak' (>3m veya ayrıştırma yok)

S = '...dan uzak' (açıkta >6m ambarda >12m veya açıkta >3m ambarda >6m)

The precise and definitive interpretations of the expressions 'away from' and 'separated from' vary depending on the type of packaging and storage location; open (container yard at a container terminal or open general cargo berth) or closed storage (e.g. warehouse of an open cargo berth, depot or CFS).

- In the 'away from' category for dangerous goods packed separately, in non-containerized packaging or in intermediate bulk containers, or packed in or on trailers, open road vehicles, railway wagons and all types of open containers, a minimum distance of 3 metres is required between the two classes of goods in question, regardless of whether these goods are stored in a closed warehouse or in an open storage area. 'Separated from' means a minimum distance of 6 metres between packages in an open area, but a minimum distance of 12 metres in a warehouse or store (unless there is an approved fire wall in between, which wall itself provides adequate separation).

- For categories '0' and 'A' of dangerous goods loaded into closed containers on portable tanks or closed road vehicles, no additional segregation is required, while for category 'separation from', a minimum distance of three metres in an open storage area and a minimum distance of six metres in a warehouse or storeroom is required (unless there is an approved fire wall in between, which itself provides sufficient separation).

Regardless of the type of packaging, if the substance has a subsidiary hazard label or if two or more substances are loaded into a transport unit (e.g. container), the most stringent segregation requirement applies, the primary hazard or the secondary hazard may be the reason for making this decision. In addition, the previously mentioned separation distances refer to horizontal distances; packages or containers of different IMDG classes should not be stored on top of each other; this applies to both subsidiary and primary hazards.

5. HAZARDOUS LOAD HANDBOOK

It is provided as Annex 10 in the Dangerous Goods Handbook prepared within the scope of port operations.

6. OPERATIONAL ISSUES

Issues regarding the safe berthing, mooring, loading/unloading, sheltering or anchoring of ships carrying Dangerous Goods during the day and at night are covered in the Ambarl̆y Port Regulation (Annex-20) and the Marport Ship Operation Procedure. It is explained in detail in (ANNEX-21).

The instructions covering the fumigation, degassing and gas measurement activities implemented throughout the port are given in ANNEX-23. (Marport Fumigation Instruction)

7. DOCUMENTATION, CONTROL AND RECORDING

The issues regarding how documents related to Dangerous Goods will be requested from the cargo owner, agent or suppliers and how they will be recorded within the port are explained in the Marport Dangerous Goods Documentation Procedure (ANNEX-18).

8. EMERGENCIES, EMERGENCY PREPAREDNESS AND RESPONSE

Matters regarding how to respond to any emergency situation that may or may not occur regarding hazardous cargo within the port, on land and at sea, are explained in the Marport Emergency Response Plan (ANNEX-7) and the Ambarl̆y Shore Emergency Response Plan.

How any waste that will occur after an emergency will be stored and disposed of will be carried out in accordance with the Marport Waste Management Procedure (ANNEX-22).

9. OCCUPATIONAL HEALTH AND SAFETY

In accordance with Occupational Health and Safety rules and practices, the following training is given to all personnel;

Training Modules Prepared for Marport Personnel;

- Occupational Health, Safety and Environmental Training for Port Workers,
- Emergency Information Training,
- Working with Hazardous Chemicals and Spill Response Training,
- IMDG Code - (4) Loading / unloading of Cargo Transport units,
 - (8) Preparation of loading/stacking plans,
 - (9) Loading / unloading from ships,
- Environmental Awareness and Waste Management Training,

Below you can see Marport Occupational Health and Safety documents;

Document Code	Document Name
PR.SEC.02	Risk Management Procedure
PR.SEC.03	Safe Operating Procedure for Machinery and Equipment
P.R.S.E.C.04	Personal Protective Equipment Determination and Use Procedure
PR.SEC.05	Accident - Incident Investigation and Reporting Procedure
P.R.S.E.C.06	Emergency Response Plan
P.R.S.E.C.08	Work Permit Procedure
P.R.SEC.09	Job Interview Procedure
P.R.S.E.C.10	Control - Audit Procedure
P.R.S.E.C.14	Labeling and Locking Procedure
P.R.S.E.C.16	GREENHOUSE GAS INVENTORY MANAGEMENT PROCEDURE
P.R.S.E.C.17	PROCEDURE FOR CALCULATION AND REPORTING OF GREENHOUSE GAS INVENTORY
P.R.S.E.C.51	HAZARDOUS WASTE MANAGEMENT PROCEDURE
P.R.S.E.C.52	Spill Prevention and Response Procedure
P.R.S.E.C.53	Hazardous Chemical Procedure
P.R.S.E.C.54	WASTE MANAGEMENT PROCEDURE
P.R.S.E.C.55	Working Conditions and Health Services for Pregnant and Nursing Women

Document Code	Document Name
TL.SEC.01	CFS Safety Instruction
TL.SEC.02	Safe Field Stacking Instructions
TL.SEC.03	Container Inspection Safety Instructions
TL.SEC.04	Safe Ship Operation Instructions
TL.SEC.05	Safety Instructions in Door Work Processes
TL.SEC.07	Fuel Station Fuel Filling Instructions
TL.SEC.08	Bad Weather Safety Instructions
TL.SEC.09	General Safety Instructions for Drivers
TL.SEC.10	Safety Instructions for Electrical Works
TL.SEC.13	Warehouse Safety Instructions
TL.SEC.15	Fire Extinguishing Systems Maintenance and Control Instructions
TL.SEC.16	Main Terminal Personal Protective Equipment Usage Map
TL.SEC.17	West Terminal Personal Protective Equipment Usage Map
TL.SEC.19	Safety Rules to be Applied During the Transport of Non-Standard Loads
TL.SEC.20	Instructions for Use and Storage of Slings
T.SEC.21	Tire Repair and Removal-Reinstallation Instructions
TL.SEC.37	Instructions for Working at Height
TL.SEC.51	Medical Waste Management Instruction
TL.SEC.52	Waste Battery and Accumulator Management Instructions
TL.SEC.53	Waste Oil Control Instruction
TL.SEC.55	Natural Resource Use
TL.SEC.56	Emission and Noise Control Instruction
TL.SEC.57	Recyclable Waste Instruction
TL.SEC.58	Leaking Container Intervention Instructions
TL.SEC.59	Domestic Wastewater Treatment Plant Operating Instructions
TL.SEC.60	Chemical Wastewater Treatment Plant Instructions
TL.SEC.61	Hazardous Waste Area Characteristics and Waste Acceptance Instructions
TL.SEC.90	Marport General Recommendations and Safety Rules For Ship
TL.SEC.93	Visitor Information Brochure
TL.SEC.94	Health Services Utilization Brochure

10. SOME OTHER MATTERS 10.1

From the Ministry of Transport and Infrastructure in the Official Gazette dated 14 NOVEMBER 2021 and numbered 31659: DANGEROUS
In the REGULATION ON CARGO TRANSPORTATION BY SEA AND LOADING SAFETY;

Coastal facility dangerous cargo conformity certificate

ARTICLE 5 – (1) Coastal facilities handling dangerous cargo must obtain a TYUB and keep it valid.

It is mandatory.

- (4) The validity period of TYUB is three years. At the end of this period, the document is renewed by re-inspection for a fee.
- (6) The provisions regarding coastal facilities authorized by the Ministry through a Green Port Certificate are reserved.

Hazardous material safety consultant

ARTICLE 6 – (1) Shore facilities handling dangerous goods shall employ a DGSA authorized by the Ministry within the scope of the IMDG Code or shall receive services from a Dangerous Goods Safety Consultancy Organization. These shore facilities shall not also obtain a Dangerous Goods Activity Certificate and shall not employ or receive services from a DGSA authorized by the Ministry within the scope of the Agreement on the International Carriage of Dangerous Goods by Road (ADR).

Dangerous goods handling guide

ARTICLE 7 – (1) Coastal facilities shall prepare procedures and a safety plan for dangerous goods, explaining how all operations related to dangerous goods and the responsibilities and measures specified in this Regulation are fulfilled.

The guide is published on the coastal facility's website, accessible and accessible to all relevant facility personnel, public authorities and facility users.

- (2) The procedures and principles regarding the Dangerous Goods Handling Guide are determined by the Administration.

Loading safety

ARTICLE 14 – (1) The port authority stops the handling operation at the coastal facility when it sees any risk.
and does not start until the risk is eliminated.

- (2) In order to ensure the safe loading of cargo onto the ship, the provisions of the BLU Code and BLU Manual, the Code of Safe Practice for Cargo Stowage and Securing (CSS Code), the Code of Practice for Packing Cargo Transport Units (CTU Code) and the Code of Safe Practice for Ships Carrying Timber Cargo on Deck (TDC Code) shall be complied with, depending on the type of cargo.

- (3) The stacking of loads is carried out in accordance with the relevant legislation and international agreements to which we are a party.

Loads within the scope of the IMDG Code

ARTICLE 15 – (1) Substances and objects prohibited by the IMDG Code cannot be transported by sea.

- (2) Parties involved in the transport of packaged dangerous goods shall take measures in accordance with this Regulation and the provisions of the IMDG Code, taking into account the nature and extent of foreseeable risks in order to prevent damage and injuries and to minimise their effects.

Cargoes within the scope of IMSBC

Code ARTICLE 16 – (1) All cargoes related to the carriage of dangerous solid bulk cargoes in accordance with SOLAS Chapter VII Part A Rule 7.2.1 It is mandatory to use the "bulk cargo shipping name" in the documents; the commercial name of the cargo alone is not sufficient.

- (2) On ships carrying solid bulk dangerous cargoes, a cargo manifest or special list showing the dangerous cargoes on board, together with their locations, must be available in accordance with SOLAS Chapter VII Part A Regulation 7.2.2. A detailed stowage plan showing the location of all dangerous cargoes on board and indicating their classes may be used instead of the cargo manifest or special list.

- (7) Procedures regarding the transportation and notification of a solid bulk cargo not included in the IMSBC Code are determined by the Administration.

Loads within the scope of the IBC Code

ARTICLE 17 – (1) All stakeholders involved in the transportation of cargo within the scope of the IBC Code shall use the product name and characteristics of the cargo specified in IBC Code Sections 17 and 18 and comply with all obligations specified regarding the cargo. Updates regarding cargoes falling within the scope of the IBC Code and named in Sections 17 and 18 are followed with the MEPC.2 circulars published by IMO every December.

Weighing of full containers

ARTICLE 18 – (1) The gross weight of the full containers to be loaded onto ships for transportation by sea shall be determined by the shipper.
It is mandatory to detect and verify it.

- (5) Determining and verifying the gross weight of full containers to be loaded onto ships from coastal facilities,
notification, responsibilities of the parties and other procedures and principles are determined by the Administration.

Transport of dangerous goods within the port area and between adjacent ports

ARTICLE 19 – (1) Dangerous goods are transported within the port administrative area and between adjacent ports, in appropriate packaging, loaded into cargo transport units and provided that the necessary safety measures are taken by the carrier and the shipper.

When determining the number of passengers to be present, the provisions of IMDG Code Rule 7.1.3.1 and Section 7.5 are taken into consideration. The procedures and principles in this regard are determined by the Administration.

Other matters

ARTICLE 24 – (2) Packaging and cargo that are not cleaned and degassed and in which dangerous cargo is carried.
Transport units are subject to the legislative provisions applicable to dangerous goods discharged from them.

- (4) In case of any change in the matters referred to in this Regulation, the current IMO legislation shall prevail.
its provisions are valid.

(5) The content, procedure and principles of notifications regarding dangerous goods arriving at coastal facilities by sea, road or railway are determined by the Administration.

(6) The Administration may make arrangements on ships or shore facilities, taking into account IMO legislation on dangerous cargoes and loading safety. (7) The Administration may make arrangements on shore facilities and ships, taking into account IMO legislation on fumigation operations and gas measurement, degassing and entry into enclosed spaces in fumigated cargo transport units.

The repealed regulation

ARTICLE 28 – (1) Transport of Hazardous Substances by Sea published in the Official Gazette dated 3/3/2015 and numbered 29284. The Regulation on Transport has been repealed.

ARTICLE

29 – (1) This Regulation; a) Articles 1, 2, 3, 4, subparagraph (a) of the first paragraph of Article 22, Articles 29 and 30 shall enter into force on the date of publication, b) Other provisions shall enter into force on 1/4/2022.

ANNEXES 1. General Layout Plan of the

Coastal Facility 2. General View Photographs of the

Coastal Facility 3. Emergency Center and Contact

Information 4. General Layout Plan of Areas Where Dangerous Loads

Are Handled 5. Fire Plan of Areas Where Dangerous Loads Are

Handled 6. General Fire Plan of the Facility

7. Emergency Response Plan

8. Emergency Assembly Points and Plan 9.

Emergency Management Diagram 10.

Hazardous Materials Handbook 11.

Leakage Areas and Equipment for CTU and Packages, Entry/Exit Drawings 12. Inventory of Port Service Vessels

13. Administrative boundaries of the Harbour Master, anchorage areas and pilot embarkation/disembarkation points at sea coordinates

14. Emergency response equipment against marine pollution in the port facility 15. Personal

Protective Equipment (PPE) usage map 16. Hazardous Material

incident notification form 17. Control results notification

form for hazardous cargo transport units (CTUs) 18. Hazardous Cargo Documentation Procedure

19. Hazardous Cargo Procedure

20. Ambarļy Port Regulation 21. Marport

Ship Operation Procedure

22. Marport Waste Management Procedure

23. Marport Fumigation Procedure

24. Marport Work Permit Procedure

25. Marport Work Permit Form

26. Marport Fire Fighting Systems and Equipment Inventory