YEŞİLYURT PORT FACILITY
DANGEROUS GOODS SAFETY GUIDE

PREPARATION DATE:01.04.2016
(For Revisions, Refer to the Revisions Page)

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REVISIONS PAGE

Item No.	Revision No.	Revision Contents	Revision Date	Revision Author	
				Name Surname	Signature
	1		1.10.2016	FATİH VARDAR	
	02	Facility Information Form	16.02.2019	Mesut UZUN	
	03	Article 6.4 updated	22.04.2019	Mesut UZUN	
	04	Articles 10.10.1., 10.10.2., 4., 6.4., 11., 10.7. updated	15.04.2020	Mesut UZUN	
	05	1.1, 4.1.1, 4.2.1, 4.7.2, 8.2.3	18.03.2021	Mesut UZUN	
	06	The term 'Dangerous Substances" has been changed with "Dangerous Goods". Boxes no. 17, 18, 19 have been added to the Facility Information Form. Articles 7.6, 9.3 have been added. Article 2 Responsibilities has been updated.	25.06.2022	Mesut UZUN	
	07	10.1 Validity of the Dangerous goods Document of Compliance, 11.s. Dangerous Goods Handling Guide Additional Cargo Notification	24.08.2022	Mesut Uzun	

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1 INTRODUCTION

The entry and presence of dangerous goods in port areas and any consequential handling should be controlled to ensure the general safety and security of the area, the containment of the cargoes, the safety of all persons in or near the port area, and the protection of the environment.

The safety of life at sea and the safety and security of a ship, its cargo and its crew in a port area are directly related to the care which is taken with dangerous goods prior to loading or unloading, and during their handling.

These Recommendations are confined to dangerous goods which are in a port area as part of the transport chain. These Recommendations do not apply to dangerous substances which are used in a port area or are for general storage in the port area, but Governments may wish to control such use and storage by national legal requirements. Should a substance covered by either of these exclusions subsequently be shipped, these Recommendations should then be applied, even though the substance is already in the port area.

An essential pre-requisite for the safe transport and handling of dangerous goods is their proper identification, containment, packaging, packing, securing, marking, labelling, placarding and documentation. This applies whether the operation takes place in a port area or at premises away from a port area.

Whilst the total transport chain includes inland, port and marine elements, it is essential that every care is taken by those responsible for the matters in 1.4 and that all relevant information is passed to those involved in the transport chain and to the final consignee. Attention should be paid to the possible differing requirements for different modes of transport.

The safe transport and handling of dangerous goods is based on correct and accurate application of regulations for transport and handling of such cargoes and depends on appreciation by all persons concerned of the risks involved and on the full and detailed understanding of the regulations. This can only be achieved by properly planned and carried out training and retraining of persons concerned.

The codes and guides are under continuous review and are regularly revised. It is essential that only the most up-to-date editions are used. The contents of these codes and guides have been repeated in these Recommendations only to the extent necessary.

In preparing this guide IMDG CODE, ERG 2012 and IMO 1216 CR. documents have been applied to and the informations are used.

1.1 General information of the port facility

General information about the facility is as shown in the facility information form below:

1	Name/title of facility operator	Hikmet YEŞİLYURT / Chairman of the Board		
2	Contact information of port operator (address, phone, fax, e-mail and web page)	Cumhuriyet Mahallesi Akal Caddesi No: 1 Tekkeköy/SAMSUN Pho : 0362 256 23 30 Fax : 0362 256 04 94 Mail : info@yesilyurtdc.com.tr Web : www.yesilyurtdc.com.tr		
3	Name of facility	Yeşilyurt Demir Çelik Endüstri ve Liman İşletmeleri Inc. Co. Port Operations Department		
4	The province where the facility is located	Samsun		
5	Facility contact information (address, phone, fax, e-mail and web page)	Cumhuriyet Mahallesi Cumhuriyet Caddesi No: 24 Tekkeköy/SAMSUN Pho : 0362 266 43 55 Fax : 0362 266 55 62 Mail : info@yesilyurtliman.com Web : www.yesilyurtliman.com		
6	Geographical location of facility	Central Black Sea Region		
7	Port Authority (with contact information) to which the Facility is Affiliated	Samsun Port Authority Kale Mahallesi Sahil Caddesi No:9 İlkadım/SAMSUN Pho : 0362 435 90 13 Fax : 0362 432 27 44 Mail : samsun.liman@udhb.gov.tr		
8	Municipality (with contact information) to which the Facility is Affiliated	Samsun Metropolitan Municipality Pazar Mahallesi Necip Bey Caddesi No:35 İlkadım/SAMSUN Pho : 0362 431 60 90 Fax : 0362 431 15 78 Mail : info@samsun.bel.tr		
9	Free Zone or Organized Industrial Zone where the Facility is Located	Samsun Organized Industrial Zone		
10	Shore Facility Operating Permission/Temporary Operating Permission Expiry Date	06.07.2025		
11	Operating Status of Facility (X)	Own Cargo + 3rd Party (X)	Own Cargo (…)	3rd Party (….)
12	Name, surname and contact information of facility manager (phone, fax, e-mail)	Salih CENGİZ / Port Manager Pho : 0362 266 43 55 / Mobile: 0530 763 56 68 Fax : 0362 266 55 62 Mail : salihcengiz@yesilyurtliman.com		

13	Name, surname and contact information of the person responsible for the dangerous goods operations of the facility (phone, fax, e-mail)	Levent ÇİFTLİK / Chief of Operations Tel : 0362 266 43 55 / Cep Tel: 0541 320 85 08 Fax : 0362 266 55 62 Mail : leventciftlik@yesilyurtliman.com
14	Name, surname and contact information of Dangerous Goods Safety Consultant of the facility (phone, fax, e-mail)	Ümmühan Seren Sezer / IMDG Specialist Pho : 0531 344 43 52 Mail : demirtmgdk@gmail.com
15	Sea coordinates of facility	41’15’14’ N 36’26’66 E
16	Classifications of dangerous goods handled in the facility (Goods under MARPOL Annex-I, IMDG Code, IBC Code, IGC Code, IMSBC Code, Grain Code, TDC Code, and asphalt/bitumen and scrap goods)	Marpol Annex-1 Imdg Code Imsbc Code Scrap Goods Grain Code
17	Dangerous goods handled in the facility (Except for IMDG Code, goods from the dangerous goods classifications in Box 16 shall be indicated separately. Additional goods request shall be submitted to the affiliated Port Authority with ANNEX-1 form. It will be added to TYER if deemed appropriate.	Marpol Annex-1: Bilge, Sludge, Waste Oil Imdg Code Annex-2: Ammonium Nitrate, Ferrosilicon, Sulphur vb. Imsbc Code: Coal, Petcoke, Seedcake, Manganese Fertilizer, Ferrosilicon vb. Scrap Goods Grain Code: Oats, Wheat, Bran, Barley, Paddy, Rice, Legumes, Seeds
18	Classifications of handled goods subject to IMDG Code	Class 3, Class 4.1, Class 4.2, Class 5.1, Class 5.2, Class 6.1, Class 8, Class 9
19	Categories of handled goods subject to IMSBC Code	Group A, Group C and dangerous group: Group B and Group A and B
20	Ship types that can berth to the facility	Bulk Cargo, Dry Cargo, General Cargo
21	Distance between the facility and main road (kilometers)	2 Km
22	Distance between the facility and railway (kilometers) or railway connection (Yes/No)	No connection, Distance to railway: 0,5 km
23	Name of nearest airport and its distance to the facility (kilometers)	Samsun Çarşamba Airport Distance: 12 km
24	Goods handling capacity of facility (Tons/Year; TEU/Year; Vehicle/Year)	8.000.000 tons/year
25	Scrap handling performed in the facility or not	Yes
26	Is there a border crossing? (Yes/No)	Yes
27	Is there a customs bonded area? (Yes/No)	Yes
28	Goods handling equipment (with capacities)	Crawler and Mobile Cranes (Port equipment capacity: 8.000.000 tons/year)
29	Storage tank capacity (m^3)	None
30	Opens storage area (m^2)	150.000 m²

31	Half closed storage area (m^2)	None
32	Closed storage area (m^2)	Closed storage of 35.000 m²
33	Specified fumigation area and/or fumigation removal area (m^2)	50 m²
34	Name/title and contact information of pilotage and towage service provider	Kılavuzluk, Sanmar Denizcilik info@sanmar.com.tr Römorkaj, Med Marine info@medmarine.com.tr
35	Has Safety Planned been established? (Yes/No)	Yes
36	Waste receiving facility capacity (This box shall be indicated separately in terms of wastes accepted by the facility)	Waste Type: Capacity(m^3) Bilge Water: 50 Sludge: 50 Waste Oil: 43 Waste Water: 10 Garbage: 60

37	Properties of docks/quays and similar areas

Dock/Quay No.	Length (meters)	Width (meters)	Maximum water depth (meters)	Minimum water depth (meters)	Tonnage and size of largest ship to berth (DWT or GRT - meters
1	420	30	20	9	75.000 DWT
2	420	30	20	9	75.000 DWT
3	110	16	6,5	4,5	10.000 DWT

1.2 Loading/unloading, handling and storage procedures for dangerous goods handled and temporarily stored at the port facility

1.2.1 General

1.2.1.1 Some of the cargoes defined as Class 1 explosives (save Class 1.4), Class 7 radioactive materials and Class 6.2 infectious substances in IMDG code shall not be taken inside the port facility. These cargoes are defined as dangerous goods which cannot be permitted absolutely. Cargoes which are wrapped, packed or prepared in the form of bale/bunch/bundle within the scope of MARPOL Annex-I and IMDG codes general cargoes and project cargoes are handled with direct delivery. All kinds of bulk cargo, mines, coal, cement, clinker, fertilizers containing ammonium nitrate, all kinds of solid bulk cargoes of this type within the scope of IMSBC code and all kinds of cereals shipped as bulk cargo within the scope of Grain code are handled at the cereal port facility. Project cargoes are also handled at the port facility.

1.2.1.2 Fulfillment of the conditions specified below will be ensured as regards handling the dangerous goods coming to the port facility for safety of the port facility, employees and ships at the port facility.

1.2.1.2.1 A coordination meeting will be held at least 1 day prior to the acceptance of dangerous goods to the port facility and the representatives of operation, Field planning, HSE unit, TMGD and other related persons shall participate to the meeting. (The resolution to hold such meeting will be taken through the operation or HSE/TMGD departments regarding the dangerous goods handled routinely which are accepted to the port)

1.2.1.2.2 Following issues will be discussed during the coordination meeting with regard to the dangerous good (s) to be accepted to the port:

1. Risk arising from dangerous goods
2. Interaction with dangerous goods existing at the port facility,
3. Interaction with cargoes planned to be accepted to the port facility in the near future,
4. Requirement of materials and equipment with respect to emergency response
5. Sufficiency of emergency response equipments
6. Interaction with the neighboring area (s)

The issues mentioned herein above will be discussed within the scope of current IMDG CODE documents and a management decision for accepting/rejecting will be taken.

1.2.1.2.3 If a decision is taken at the meeting in favor of accepting the dangerous good, management, operation, storage, safety and emergency response departments shall be notified and the necessary preparations and acceptance process will be commenced.

1.2.1.2.4 If it is required to notify the Port authority, the situation shall be notified to the Port authority in writing by specifying the reasons.

1.3 Procedure for Safe Handling Operation of Packed Dangerous Goods

1.3.1 Dangerous goods in packaged form

1.3.1.1 Loading or unloading of Big bagged dangerous goods will be made as direct delivery within the port facility.

1.3.1.2 The loading or unloading program will be prepared 1 day before at the operation meeting. Number of equipments and cranes, teams and shifts as well as the port to be used shall be specified at this meeting. The personnel who will work in the operation will be provided with information as regards the risks of the cargo and they will be equipped with the necessary protective outfit. Environmental safety is ensured by the HSE unit. Personnel will be employed neither in the hold of the ship nor in the work area prior to the conduction of gas measurements.

1.3.1.3 Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit and people in charge will pay necessary attention with respect to this issue.

1.3.1.4 The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.

1.3.1.5 The shift superintendent will be responsible from controlling the work security, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.

1.3.1.6 Working order will be organized through the berth operator, steersman and chief officer of the ship. Berth operator ensures the realization of loading or unloading as per the cargo plan.

1.3.1.7 The responsibility of loading and unloading as per the cargo plan belongs to the berth operator, steersman.

1.3.2 Requirements

1.3.2.1 The facility is equipped with water pump with electrical and diesel motor for cooling having connections with water tanks with adequate volume, fire hydrant connected with fire pipes in adequate number/size in required places, fire cupboard, spare energy production devices with adequate power (generators), fire equipments, details of which are provided in Article 8.10 containing fire extinguishing devices consisting of those operating with foam (for fire extinguishing works other than buildings and liquidated gas fires) dry chemical/powder which are fixed/mobile, depending on the capacity of the facility and the location thereof.

1.3.2.2 Personnel working at the port facility in loading or unloading works as well as those working in processes of packaged dangerous goods shall be provided with trainings in line with their job descriptions and working fields on issues such as emergency situations (fire, explosion, leakage etc) and intervention, work health and security, ISPS code safety awareness and safety issues specified in Article 10.4.

1.3.2.3 The communication means used will be working, in good condition and adequate number and capacity to provide safe usage and uninterrupted communication in loading or unloading and handling operations of dangerous goods

1.3.2.4 It will be controlled to ensure that the required warnings, signs and alarm buttons are placed at a visible and easily reachable location. The related personnel will be equipped with protective clothing and equipment in accordance with the work safety and health criteria at locations and situations which are dangerous. Personnel who don't have protective clothing and adequate equipment in line with their job descriptions and their working areas will not be employed.

1.3.3 Documentation

1.3.3.1 Passenger ships and cargo ships of 500 gross tonnage or over constructed on or after 1 September 1984 and carrying dangerous goods, shall comply with the requirements of regulation II-2/19 of SOLAS 1974. In this connection, such ships are required to carry on board a Document of Compliance in accordance with SOLAS 1974, regulation II-2/19.4 as evidence that the ship complies with the special requirements for ships carrying dangerous goods stipulated in SOLAS regulation II-2/19. Cargo ships of less than 500 gross tonnage constructed on or after 1 February 1992 shall comply with the requirements of regulation II-2/19 of SOLAS 1974, unless Administrations have reduced the requirements and this has been recorded in the Document of Compliance.

1.3.3.2 The Document of Compliance provides information on the classes of dangerous goods that may be carried on deck and in each compartment of the ship.

1.3.3.3 On board a ship carrying packaged dangerous goods a special list or manifest setting out the dangerous goods and marine pollutants and their location is required. A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods and marine pollutants on board, may be used in place of such a special list or manifest. IMO FAL form 7 provides a format for such a manifest.

1.3.3.4 The dangerous goods and/or marine pollutants list or manifest shall be based on the documentation and certification required by chapter 5.4 of the IMDG Code and will contain the stowage location and the total quantity of dangerous goods and/or marine pollutants on board.

1.3.4 Supervision

1.3.4.1 After the approach of the ship to interface, the master and port authority will supervise the transport of dangerous goods within their respective areas of responsibility while the shift superintendent or the berth operator will ensure performance of proceedings in line with the risks related to the cargo and they shall notify the master regarding steps to be taken in emergency cases.

1.3.4.2 The responsible person for the ship will usually be the chief officer or cargo officer. These persons will ensure the continuity of communication with the shift superintendent or the person responsible with operations.

1.3.5 Information for operational and emergency purposes

1.3.5.1 The persons responsible from operation, within their respective areas of responsibility, should have the following information with respect to all dangerous goods transported or handled immediately available:

1.3.5.1.1 The description of dangerous goods in accordance with Chapter 5.4 of the IMDG Code;

1.3.5.1.2 Details of special equipment needed for the safe handling of a particular dangerous good; and

1.3.5.1.3 The emergency procedures, including action to be taken in the event of a spillage or leakage, counter measures against accidental contact, fire-fighting procedures and suitable fire-fighting media.

1.3.5.2 Information in respect of required special equipment and relevant testing and examination certificates should be immediately available to the master, the berth operator and the responsible persons.

1.3.5.3 Information as to emergency case procedures will be provided to the ship and people responsible from handling of cargo. The information should be placed in a location immediately accessible to the persons concerned, e.g., aboard ship in the cargo office, at the interface in a place which is easily accessible by the responsible people.

1. This information at the berth should include the emergency procedures on the berth, fire and emergency arrangements on the berth and the telephone numbers of the fire service, ambulance, police and the authorities to be informed in case of an incident concerning dangerous goods.

2. The telephone number of the responsible person of the berth and the emergency telephone number to be dialed in case of an incident concerning dangerous goods shall also be included.

1.3.5.4 Berth operator will be responsible of keeping record of positioning of dangerous materials being transported on the ship or in port facility and the berth operator will notify the duties in writing. Berth operator will keep these records about the positioning of dangerous materials and make them available in case of emergency to relevant persons and keep them in an easily accessible way for the relevant persons

1.3.6 General handling precautions

1.3.6.1 Berth operator within its respective areas of responsibility, should ensure that:

1.3.6.1.1 Every person engaged in the handling of dangerous goods exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.

1.3.6.1.2 Whilst dangerous goods are being handled, precautions are taken to prevent unauthorized access to handling areas.

1.3.6.1.3 If there is any loss of containment of dangerous goods, every practical step is taken to minimize risks to persons and adverse effects to the environment.

1.3.6.1.4 Wrappings and packaging to be used in the activities of changing of cargo transport units, repair thereof or placing of the damaged packages inside the saving packages should be in accordance with the structure of dangerous materials and they shall be produced and certified as they are set out in chapter 6 of the IMDG Code

1.3.6.1.5 The handling and temporary storage operations shall be conducted as per the rules specified on table 1 (Schedule for segregation of the dangerous goods at the port facility) within the annex of "Recommendations on the Safe Transport of Dangerous Goods and Related Activities in Port Areas" as part of circular with no MSC/Circ.1216 of the International Maritime Organization. Details are provided in Chapter 4.

1.3.6.1.6 Fumigated cargo transport units and/or cargo transport units containing poisonous gases shall be stowed in a manner that their covers cannot be opened in an uncontrolled way.

1.4 Operational procedure of safe handling of bulk solid dangerous goods:

Loading or unloading of solid dangerous goods will be made direct delivery plan at the berths within our port facility

1.4.1 Solid bulk dangerous goods

1.4.1.1 The loading or unloading program will be prepared 1 day before at the operation meeting. Number of equipments and cranes, teams and shifts as well as the port to be used shall be specified at this meeting. The personnel who will work in the operation will be provided with information as regards the risks of the cargo and they will be equipped with the necessary protective outfit. Environmental safety is ensured in line with HSE procedure. Personnel will be assigned neither to the hold of the ship nor to the work area before the gas are measurements conducted.

1.4.1.2 Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit and people in charge will pay necessary attention with respect to this issue.

1.4.1.3 The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.

1.4.1.4 The shift superintendent will be responsible from controlling the work security, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.

1.4.1.5 Loading and unloading in accordance with the cargo plan is within the liability of berth operators.

1.4.1.6 If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.

1.4.1.7 Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

1.4.2 Requirements

1.4.2.1 Issues as regards additional safety precautions to be taken at the port facility and these precautions will be provided by the operations department.

1.4.2.2 The shift superintendent or the berth operator will be assigned to be responsible from handling of solid bulk dangerous and their duties are defined within quality management system.

1.4.2.3 Electrical equipments, devices and tools to be used at the areas where dangerous materials are handled should have adequate standards for being used at flammable, sparkling and explosive environments. Electrical lamps other than arc lamps shall be used in loading operations of solid bulk dangerous goods and these lamps should be gastight.

1.4.2.4 Adequate number of personal protective clothing, equipment and outfit shall be provided in line with the specifications of solid bulk dangerous goods which are handled and the risks they can impose.

1.4.2.5 Water balls should be place in vicinity of areas where dangerous materials like coal, which have spontaneous combustion but not affected by water, are stored and watering works should be carried out in a way to avoid combustion. It will be considered if there is a drainage system for collecting the polluted water in the environment when the temporary storage area is announced.

1.4.2.6 Canvas to be used for avoiding the solid bulk dangerous goods from falling to the sea during evacuation or while loading to the ship, will be kept between the ship and the port during the operations.

1.4.2.7 The master who will load/unload the solid bulk dangerous goods will receive the detailed loading or unloading plan which includes details as to the position and quantity of the cargo in the ship from the berth operator prior to the beginning to loading or unloading process. An agreement shall be reached between the master and the berth operator as to the said loading or unloading plan.

1.4.2.8 The master and the berth operator will ensure, within their respective areas of responsibility, that operations regarding transport, handling or loading or unloading of solid bulk dangerous goods are done in accordance with "International Maritime Solid Bulk Cargo Code (IMSBC Code)", "the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code), "Legislation on Safe Loading and Unloading of Bulk Carriers" promulgated in Official Gazette dated 31.12.2005 number 26040 and "Manual on Loading and Unloading of Solid Bulk Cargoes for Terminal Representatives (IMO MSC/Circ.1160, MSC/Circ.1230 and MSC.1/Circ.1356)".

1.4.3 Documentation

1.4.3.1 Passenger ships and cargo ships of 500 gross tonnage or over constructed on or after 1 September 1984 and carrying dangerous goods, shall comply with the requirements of regulation II-2/19 of SOLAS 1974. In this connection, such ships are required to carry on board a Document of Compliance in accordance with SOLAS 1974, regulation II-2/19.4 as evidence that the ship complies with the special requirements for ships carrying dangerous goods stipulated in SOLAS regulation II-2/19. Cargo ships of less than 500 gross tonnage constructed on or after 1 February 1992 shall comply with the requirements of regulation II-2/19 of SOLAS 1974, unless Administrations have reduced the requirements and this has been recorded in the Document of Compliance.

1.4.3.2 The Document of Compliance provides information on the classes of dangerous goods that may be carried on deck and in each compartment of the ship.

1.4.3.3 On board a ship carrying packaged dangerous goods, additionally a special list or manifest setting out the dangerous goods and their location or a detailed stowage plan is required.

1.4.4 Responsibility for compliance

1.4.4.1 When solid bulk dangerous goods are carried, handled or stowed, the master of a ship and berth operator within their respective areas of responsibility should ensure that the loading and unloading operations are carried out in accordance with the Bulk Cargo (BC) Code and the Code of Practice for the Safe Loading and Unloading of Bulk Carriers, where applicable, and the Manual on Loading and Unloading of Solid Bulk Cargoes for Terminal Representatives.

1.4.5 Emission of harmful dusts

1.4.5.1 Where the transport, handling or stowage of solid bulk dangerous goods may give rise to the emission of dust, all necessary practicable precautions should be taken to prevent and minimize the emission of such dusts and to protect persons and the environment from them.

1.4.5.2 The precautions should include the use of appropriate protective clothing, respiratory protection, and barrier creams, when needed as well as personal washing and hygiene and laundering of clothing.

1.4.6 Emission of dangerous vapor/oxygen deficiency

1.4.6.1 Where the transport or handling of solid bulk dangerous goods may give rise to the emission of a toxic or flammable vapor, all necessary practicable precautions should be taken to prevent and minimize the emission of such vapors and to protect persons from toxic vapors.

1.4.6.2 Whenever solid bulk dangerous good which may emit a toxic or flammable vapor is stowed or carried, an appropriate instrument for measuring the concentration of the toxic or flammable vapor should be provided.

1.4.7 Emission of explosive dusts

1.4.7.1 Where the transport or handling of solid bulk dangerous goods may give rise to the emission of dust that is liable to explode on ignition, all necessary practicable precautions, such as availability of fire hose, should be taken to prevent such an explosion and to minimize the effects of an explosion if one should occur.

1.4.7.2 Precautions include ventilating an enclosed space to limit the concentration of dust in the atmosphere, avoiding sources of ignition, minimizing the heights of walls of materials, and hosing down rather that sweeping.

1.4.8 Spontaneously combustible substances and substances that react with water

1.4.8.1 Solid bulk dangerous goods which, on contact with water, may evolve flammable or toxic vapors or become liable to spontaneous combustion, should be kept as dry as reasonably practicable. Such cargoes should be handled only during dry weather conditions.

1.4.9 Oxidizing substances

1.4.9.1 Solid bulk dangerous good that is an oxidizing substance should be transported, handled and stowed in a manner that prevents in so far as reasonably practicable, contamination with combustible or carbonaceous materials. Oxidizing substances should be kept away from any source of heat or ignition.

1.4.10 Incompatible materials

Solid bulk dangerous goods should be carried, handled and stowed in a manner that prevents any dangerous interaction with incompatible materials.

1.4.11 Cargo which can be handled at our facility in accordance with IMSBC CODE

1.4.11.1 Group A cargo (liquefiable cargo)

Liquefaction is the status when a cargo becomes fluid (liquid). Liquefiable cargoes hold a certain amount of moisture and have got small particles and they may relatively and with particles.

Group A cargoes

Mineral concentrations

Mineral concentrations are refined ores in which valuable components are enriched by the elimination of waste materials inside them. They include copper concentrations, iron concentrations, lead concentrations, nickel concentrations, and zinc concentrations.

Nickel ore

There are different types of nickel ores with varying colors, size of particle and moisture. Some of them can contain ores similar to clay.

Coal

Coal (bituminous and anthracite) is a flammable material containing natural, hard, amorphous carbon and hydrocarbons. It best fits to Group B in terms of its being flammable and the spontaneous heating feature thereof however it can also be classified as part of A group since it can get liquefied if refined (e.g. if %75 is composed of tiny particles smaller than 5 mm). In these cases, it is classified both as within A and B group.

1.4.11.2 Group B cargoes (which possess a chemical hazard)

Group B cargoes are classified in two ways within the IMSBC Code: 'Dangerous goods in solid form in bulk' (under the International Maritime Dangerous Goods (IMDG) Code; and 'Materials hazardous only in bulk' (MHB).

You will find this information in the "characteristics" section of the cargo's schedule. Cargoes classified as dangerous goods in solid form in bulk will also have a 'UN' number in the Bulk Cargoes Shipping Name.

Dangerous goods in solid form in bulk

In the Code these cargoes are classed as follows:

Class 4.1: Flammable solids

Class 4.2: Substances liable to spontaneous combustion

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

Class 5.1: Oxidizing substances

Class 6.1: Toxic substances Class

7: Radioactive materials

Class 8: Corrosive substances Class
9: Miscellaneous dangerous substances and articles.

Materials hazardous only in bulk (MHB)

Materials hazardous only in bulk (MHB) MHB cargoes are materials which possess chemical hazards when transported in bulk that do not meet the criteria for inclusion in the IMDG classes above. They present significant risks when carried in bulk and require special precautions. They are described as follows:

Combustible solids: materials which are readily combustible or easily ignitable

Self-heating solids: materials that self-heat

Solids that evolve into flammable gas when wet: materials that emit flammable gases when in contact with water

Solids that evolve toxic gas when wet: materials that emit toxic gases when in contact with water

Toxic solids: materials which are acutely toxic to humans if inhaled or brought into contact with skin

Corrosive solids: materials which are corrosive to skin, eyes, metals or respiratory sensitizers.

The risks Group B cargoes present

The major risks associated with Group B cargoes are fire and explosion, release of toxic gas and corrosion.

Coal

Coal may create flammable atmospheres, heat spontaneously, deplete oxygen concentration and corrode metal structures. Some types of coal can produce carbon monoxide or methane.

Petroleum coke

Petroleum coke which is not calcined is sensitive to heat. It can get burned under high temperatures. There is no specific requirement for ventilation at the storage areas. There are no special requirements during transport, unloading and cleaning. It is required to wear gloves, work uniform, shoes and helmets as protective clothing. Spray nozzles should be kept available.

Direct reduced iron (DRI)

DRI may react with water and air to produce hydrogen and heat. The heat produced may cause ignition. Oxygen in enclosed spaces may also be depleted.

Metal sulphide concentrates

Some sulphide concentrates are prone to oxidation and may have a tendency to self-heat, leading to oxygen depletion and emission of toxic fumes. Some metal sulphide concentrates may present corrosion problems.

Organic materials

Ammonium nitrate-based fertilizers Ammonium nitrate-based fertilizers support combustion. If heated, contaminated or closely confined, they can explode or decompose to release toxic fumes and gases.

Wood products transported in bulk

Wood products transported in bulk are listed in a new schedule to the Code: Wood Products – General. They include logs, pulpwood, roundwood, saw logs and timber. These cargoes may cause oxygen depletion and increase carbon dioxide in the cargo space and adjacent spaces.

These are wood products loaded and discharged by methods such as elevators and grabs. They are distinct from wood products listed in other schedules..

1.4.11.3 Group C cargoes (cargoes which are neither liable to liquefy nor possess chemical hazards)

Although Group C cargoes do not present the dangers associated with Group A and B cargoes, they can still carry risks.

Examples of Group C cargoes

Iron ore and high density cargoes

Sand and fine particle materials

Fine particle materials can be abrasive. Silica dust is easily inhaled and can result in respiratory disease. Materials with tiny particles could be abrasive. Silica sand could be easily inhaled which could cause inhalation diseases. People who may be exposed to cargo dust should wear goggles or other equivalent dust eye-protection, dust filter masks and protective clothing.

Cement

Cement may shift when aerated during loading. Dust can also be produced from this cargo. People who may be exposed to cargo dust should wear goggles or other equivalent dust eye-protection, dust filter masks and protective clothing.

1.5 Procedure for safe handling of scrap metal cargo

Scrap metal cargo are handled within our port facility. Storage works are also carried out at our port facility.

1.5.1 Requirements

1.5.1.1 Entries to the quarantine area shall be provided in a controlled way, the entry door to the area will be kept closed when operations are not carried out, and warning signs shall be placed on them.

1.5.1.2 Two people will be assigned for handling the contaminated radioactive materials at the port facility. These people should take courses from Turkish Atomic Energy Authority (TAEK) and their duties will be defined in writing.

1.5.1.3 Radiation measurements of scrap cargo will be carried out by accredited supervision companies at the port facility within the responsibility of the cargo receiver. The supervision company which will conduct the radiation measurements should not have any partnership with or any interest from the cargo receiver or facility which are the customer of the receiver directly or indirectly.

1.5.2 Handling operation

1.5.2.1 Measurement of dust contaminated with the radiation accumulated in the pool at the port facility will be conducted and received by Turkish Atomic Energy Authority (TAEK).

1.5.2.2 Radiation well ,where the materials detected in the scrap cargo contaminated with radioactive source and/or radiation are kept temporarily, will be isolated and bordered to avoid unauthorized access. Radiation wells will be constantly monitored during the time these materials are stored temporarily and a control point will be created at an appropriate distance.

1.5.2.3 It will be ensured that vehicles loaded with scrap will pass from radiation measurement devices placed in front of the weighbridge with a speed lower than 10 km. It will not be permitted for any vehicle loaded with scrap to leave the facility if the required measurements are not conducted. The berth operator will be responsible of going of the vehicles to control entry to weighbridge area and observing the measurement after the vehicles are loaded during the operations.

1.5.2.4 If level-3radiation level is detected in a vehicle loaded with scrap in the measurements conducted, everyone in the vehicle including the driver will evacuate the vehicle and the vehicle will be taken to quarantine area and kept there until required emergency intervention is carried out. The said area and its immediate surroundings will be marked with warning signs and the people at the facility will be notified of this situation.

1.5.2.5 If materials contaminated with radioactive sources and/or radiation are detected, such materials will be taken into the radiation well and the number, size and approximate weight of radioactive sources will be notified to Turkish Atomic Energy Authority (TAEK) within 24 hours at the latest.

1.5.2.6 Operators, employees or third parties who have not received training for protection against radiation and without appropriate protective clothing, equipment, devices and outfits will not be allowed to enter t the quarantine area.

1.5.2.7 Radiation measurements of radiation determination and quarantine area, the radiation well, dusts accumulated in the collection pool, the water discharged from the collection pool and of vehicles loaded with scrap shall be conducted.

2 RESPONSIBILITIES

All parties within the dangerous goods transportation activities are obliged to take all necessary measures to transport safely, securely and environmentally friendly, to avoid accidents and to reduce the damage as little as possible, if an accident occurs.

General Responsibilities

a) They are obliged to take all necessary measures to transport safely, securely and environmentally friendly, to avoid accidents and to reduce the damage as little as possible, if an accident occurs.
b) In case of emergencies such as fires, spillage, debris that occur during the transportation of dangerous goods, they make us of the EmS Guide which includes Emergency Response Methods and Emergency Charts for Ships Carrying Dangerous Goods.
c) To apply appropriately the required medical first aid to persons affected by the harms of dangerous goods, and against health issues which result from accidents involving such goods, they make us of the Medical First Aid Guide (MFAG) included in the IMDG Code Annex.

2.1 Responsibilities of the relevant person of the goods

2.1.1 Not allow ships carrying dangerous goods to berth to its facility without the permission of the port authority.
2.1.2 Provide written information to the ship that will berth to its facility within the scope of facility rules, goods handling rules and relevant legislation.
2.1.3 Not handle dangerous goods with no handling permit from the administration. Make planning accordingly not to aggrieve other ships that will berth.
2.1.4 Request obligatory documents and information related to dangerous goods from the relevant person of the goods, and ensure that these accompany the goods. In case that such documents and information cannot be provided by said relevant person, there is no obligation to accept the dangerous goods to its facility or to handle them.
2**.1.5** Carry out loading and unloading operations as per the agreement reached by sharing with the relevant person of the ship all information that may be necessary according to the type of the cargo. Not make any changes in the operation without informing the relevant person of the ship.
2.1.6 Establish working limits considering the safe operating capacity of the plant and weather forecasts. Take necessary precautions to ensure that the ship is safely berthed and that the handling is safely carried out.
2.1.7 Check the transport document containing information stating that the dangerous goods arriving to its facility have been properly classified, packaged, marked, labelled, plated and loaded safely to the cargo transport units.
2.1.8 Ensure that the personnel involved in the handling of dangerous goods and in the planning of this handling operation are properly trained and thus certified. Not assign any personnel without such certification to these operations.
2.1.9 Ensure that the dangerous goods handling equipment in its facility are operational, and that the relevant personnel are trained and certified to operate this equipment.

2.1.10 Take necessary occupational safety precautions in the shore facility. Ensure that the personnel uses personal protective equipment suitable to the physical and chemical properties of the dangerous goods.

2.1.11 Carry out operations related to dangerous goods in docks, piers and depots installed to be suitable for such operations.

2.1.12 Equip docks and piers reserved for ships loading or unloading dangerous liquid bulk goods with fit-for-purpose installations and equipment.

2.1.13 Keep an updated list of all danergous goods in ships berthed to its facility, and in open and closed areas in its facility. Provide such information to the relevant parties if requested.

2.1.14 Inform the port authority about the instantaneous risk caused by the dangerous goods handled or temporarily stored in its facility, and about the precautions taken against it.

2.1.15 Report accidents related to dangerous goods (including accidents that occur at entry to confined spaces) to the port authority. Provide necessary support and cooperation in controls and inspections by the administration and the port authority.

2.1.16 Ensure that dangerous goods of Class 1 (excluding Class 1 Compatibility Group 1.4 S), Class 6.2 and Class 7, which are not allowed to be temporarily stored, are transported outside the shore facility as soon as possible without delay. Apply to the administration for permission if a delay is essential.

2.1.17 Store temporarily the cargo transport units where dangerous goods are transported, according to the separation and stacking rules. Take fire, environmental and other safety precautions in the storage area suitable to the class of the dangerous goods. Ensure that fire fighting systems and first aid units are always ready-to-use in areas where dangerous goods are handled. Make necessary periodical checks.

2.1.18 Take permission from the port authority before hot works and procedures to be carried out in areas where dangerous goods are handled and stored.

2.1.19 Prepare the emergency evacuation plan to evacuate ships from shore facilities in emegencies to submit to the port authority. Inform relevant persons concerning the plan deemed appropriate by the port authority.

2.1.20 Ensure that cargo transport units are loaded in its facility as per loading safety rules.

2.2 Responsibilities of the port facility operator

2.2.1 Ensure appropriate, secured, safe berthing and mooring.

2.2.2 Ensure proper and safe entrance-exit system between the ship and shore.

2.2.3 Provide training for personnel working in loading, unloading and handling operations of the dangerous goods.

2.2.4 Ensure proper and safe transport, handling, separation, stowing, temporary stock and inspection of the dangerous goods in the operation field by qualified, trained personnel who has taken the job security measures.

2.2.5 Request all necessary documents relating to dangerous goods from the relevant person of the cargo and ensure its availability with the cargo.

2.2.6 Keep an updated list of all dangerous goods in the operation area.

2.2.7 Provide training for all personnel on the risk of handled dangerous goods, safety measures, safe operation, emergency measures, safety and so on and keep training records.

2.2.8 Check the relevant documents to confirm that the dangerous goods arriving to its facility have been properly identified, classified, certified, packaged, labelled,

declared, loaded safely to the approved and legitimate packing, vessel and cargo transport units, and have been safely transported.

2.2.9 Provide necessary safety measures for improper, unsafe or risk-posing dangerous goods and notify the port authority.

2.2.10 Provide emergency arrangements and ensure that all persons informed about these issues.

2.2.11 Inform the port authority on the dangerous goods accidents occurring in the area of responsibility.

2.2.12 Provide necessary support and cooperation for the inspections made by the authorities.

2.2.13 Execute the activities related to dangerous goods in the docks, wharves, warehouses which are established for this purpose.

2.2.14 Provide proper installation and equipping for the docks and wharves separated for ships and marine vessels which load and unload petroleum and petroleum products.

2.2.15 Provide transportation of the dangerous goods, which are not proper for temporary stay and not allowed, out of the port facility as soon as possible without waiting.

2.2.16 Not allow the ships and vessels carrying dangerous goods to berth to the dock and pier without permission from the port authority.

2.2.17 Provide a storage area for containers carrying dangerous goods as per separation and stowage requirements and take necessary fire, environmental and other safety measures. During loading, unloading and offloading of dangerous goods to/from ships and sea vehicles, take necessary safety measures against heat (especially in hot seasons) and other hazards for relevant persons of the ships as well as for people involved in such loading, unloading and offloading. Keep combustible materials away from sparks and avoid usage of tools and equipment that give off sparks in the dangerous goods handling area.

2.2.18 Prepare emergency evacuation plan for the evacuation of the ships and boats from the port facilities in case of emergency.

2.3 Responsibilities of the ship's master

2.3.1 Ensure that the ship, equipment and devices are in good condition for dangerous goods transport.

2.3.2 Demand all necessary documents, information and certification relating to dangerous goods from the port facility and relevant person of the goods and ensure their availability with the goods..

2.3.3 Ensure that the safety measures related to loading, stowing, separating, handling, transport and unloading of the dangerous goods in his ship are perfectly executed and maintained, and take necessary inspection and controls.

2.3.4 Check that the dangerous goods entering his/her ship are properly identified, classified, certified, packaged, marked, labelled, declared, loaded safely to the approved and legitimate packing, vessel and cargo transport units, and are safely transported.

2.3.5 Ensure that the whole crew is trained and informed on the risks, safety precautions, safe operation, emergency measures and similar issues of the loaded and unloaded dangerous goods.

2.3.6 Ensure that the persons, who are qualified and have necessary training on the loading, transport, unloading and handling of the dangerous goods, work by taking job safety measures.

2.3.7 Not leaving the area assigned to himself, not anchoring, not berthing and docking without the consent of the port authority.
2.3.8 Apply all rules and measures during sailing, maneuvering, mooring, berthing and leaving for the safe transport of dangerous goods..
2.3.9 Ensure safe entry and exit between the ship and the dock..
2.3.10 Inform the crew on the applications, security procedures, emergency measures and intervention methods related to dangerous goods in the ship..
2.3.11 Possess the updated list of all the dangerous goods in the ship and declare them to the authorities.
2.3.12 Take the necessary safety measures for illegitimate, improper, unsafe, risk-posing (to ship, persons or environment) dangerous goods and report the case to the port authority..
2.3.13 Report the dangerous goods accident in the ship to the port authority.
2.3.14 Provide the necessary support and cooperation for controls made by the authorities.

2.4 Responsibilities of the Dangerous Goods Safety Consultant

2.4.1 Follow the compliance with the requirement to the transport of the dangerous goods..
2.4.2 Provide recommendations with regard to the transportation of dangerous goods to the port facility.
2.4.3 Prepare an annual report on the dangerous goods transportation activities of the facility operator to the port facility.(Annual reports are kept for 5 years and submitted to the authorities upon request.)
2.4.4 Check the applications and methods described below;
2.4.4.1 Check that the dangerous goods arriving to the facility have been properly identified, that the correct shipment names have been used, thay have been properly certified, packaged, labelled and declared, that they have been loaded safely to the approved and legitimate packing, vessel and cargo transport units, and have been safely transported; and report the control results.
2.4.4.2 Loading / unloading procedure related to handled and temporarily stored dangerous goods,
2.4.4.3 Check whether the port facility considers the special requirements relating to dangerous goods while purchasing means of conveyance regarding to the handled dangerous goods.,
2.4.4.4 Control methods of transport equipment used in transporting, loading and unloading of dangerous goods,,
2.4.4.5 Including the amendments to the legislation, to check that whether the port facility personnel has necessary training and whether the records of this training is available,
2.4.4.6 Convenience of the emergency methods to be applied in case of occurrence of an accident or incident that may effect the safety during the transport, loading or unloading of the dangerous goods.,
2.4.4.7 Convenience of the reports prepared on the serious accidents, incidents or serious infringements occurring during the transport, loading and unloading of the dangerous goods,
2.4.4.8 Determine the necessary precautions against the possibility of re-occurrence of accidents, incidents or serious violations, and evaluation of the practices,

2.4.4.9 Check to what extent the requirements of the transport of the dangerous goods are considered among the selection of the sub-contractors or third parties,

2.4.4.10 Determine whether the personnel involved in the transportation, handling, storage and loading/unloading of dangerous goods have detailed knowledge on operational procedures and instructions,

2.4.4.11 Convenience of the measures taken to be ready against risks during the transportation, handling, storage and loading/unloading of dangerous goods

2.4.4.12 Procedures on the identification of all necessary documents, information and certifications relating to dangerous goods.

2.4.4.13 Procedures on berthing, mooring, loading / unloading, sheltering or anchoring of ships carrying dangerous goods, to the port facility day and night safely.

2.4.4.14 Procedures on the additional measures to be taken for loading, unloading and offloading of the dangerous goods according to the seasonal conditions.

2.4.4.15 Procedures on fumigation, gas metering and degasification operations. Procedures on keeping records and statistics of dangerous goods,

2.4.4.16 Accuracy of the aspects related to the ability and capacity of the port facility to respond to emergencies,

2.4.4.17 Convenience of the regulations for the first response to accidents involving dangerous goods,

2.4.4.18 Procedures on handling and disposal of damaged dangerous goods and wastes contaminated with dangerous goods,

2.4.4.19 Information for the personal protective clothing and procedures for their use.

2.5 Responsibilities of 3rd parties, cargo / ship brokers etc. operating in the port facility

2.5.1 Ensure that the cargo to be carried by the ship is certified as fit for transportation, and ensure that cargo holds, cargo tanks and cargo handling equipment are fit for cargo transportation.

2.5.2 Demand all necessary documents and information related to dangerous goods from the relevant person of the goods, and ensure that they accompany the goods during transportation.

2.5.3 Ensure that documents and information related to dangerous goods that must be available on the ship as per legislation and international agreements are appropriate and up-to-date.

2.5.4 Check the transport document containing information stating that the cargo transport units loaded to the ship are properly marked, plated and safely loaded.

2.5.5 Inform the ship crew on the risks of dangerous goods, safety procedures, safety and emergency precautions, response methods and similar subjects.

2.5.6 Maintains an updated list of all dangerous goods on the ship, and declare to authorities when requested.

2.5.7 Ensure that the loading program on the ship (if any) is approved and certified, and kept operational.

2.5.8 Inform the port authority and the port facility on the instantaneous risk posed by the dangerous goods in the berthing ship as well as relevant precautions taken against such risks.

2.5.9 Not accept to carry the dangerous goods if there is leakage from the dangerous goods or if there is any such possibility.

2.5.10 Notify the port authority on dangerous goods accidents that occur at sea or at the shore facility.

2.5.11 Provide necessary support and cooperation during controls and inspections by the administration and the port authority.

2.5.12 Not accept to carry dangerous goods not included in ship certifications issued by relevant authorities and organizations.

2.5.13 Ensure that the ship personnel involved in the handling of dangerous goods wear personal protective equipment suitable to the physical and chemical properties of the cargo during handling operations.

2.5.14 Ensure loading safety requirements related to cargoes loaded to their ships.

2.6 Responsibilities of the Carrier

2.6.1. Demand all necessary documents and information related to dangerous goods from the relevant person of the goods, and ensure that they accompany the goods during transportation.

2.6.2. Check that the dangerous goods classified, packaged, marked, labelled and plated by the relevant person of the goods are in compliance with the legislation.

2.6.3. Check that the dangerous goods are packaged according to rules by using approved packages and cargo transport units, that they are loaded and lashed to the cargo transport units safely.

3 POLICIES/APPLIED RULES AND MEASURES TO BE FOLLOWED BY PORT FACILITY

The rules and measures given in this chapter are elaborated in Chapters 1,4,6,7,8,9 and 10 under Dangerous Material Emergency Plan and Accident Prevention Policy. The requirement for infrastructure is met by our port facilities.

3.1 Berthing

3.1.1 Adequate and safe mooring facilities are provided; and

3.1.2 Adequate safe access is provided between the ship and the shore.

3.2 Supervision

3.2.1 The port operator should ensure that areas where packages or cargo transport units are kept are properly supervised and packages or cargo transport units are regularly inspected for damage. Any package or cargo transport units should only be handled under the supervision of a responsible person.

3.2.2 The port operator should ensure that no person, without reasonable cause, opens or otherwise interferes with any vehicle containing dangerous goods. When a vehicle is opened by a person authorized to examine its contents, the port operator should ensure that the person concerned is aware of the possible hazards arising from the presence of the dangerous goods.

3.2.3 Any equipment which is used for handling and stowing processes and driven with or without power shall be checked and inspected to ensure that it is manufactured in accordance with the manufacturer's instructions and exists in good operating conditions and in compliance with proper standards.

3.3 Identification, packing, marking, labelling or placarding and certification

3.3.1 The port operator should ensure that dangerous goods entering his premises have been duly certified or declared by the cargo interests as being properly identified, packed, marked, labelled or placarded so as to comply with the appropriate provisions of the IMDG Code or, alternatively, with appropriate national or international legal requirements applicable to the relevant mode of transport.

3.4 Safe handling and segregation

3.4.1 A port operator transporting or handling dangerous goods should appoint at least one responsible person who has adequate knowledge of the national or international legal requirements concerning the transport and handling of dangerous goods, including the segregation of incompatible cargoes.

3.5 Emergency procedures

3.5.1 The port operator should ensure that appropriate emergency arrangements are made and brought to the attention of all concerned. These arrangements should include:

3.5.1.1 the provision of appropriate emergency alarm operating points;

3.5.1.2 procedures for notification of an incident or emergency to the appropriate emergency services within and outside the port area;

3.5.1.3 procedures for notification of an incident or emergency to the port authority and port area users both on land and water;

3.5.1.4 the provision of emergency equipment appropriate to the hazards of the dangerous goods to be handled;

3.5.1.5 co-ordinated arrangements for the release of a ship in the case of an emergency; and

3.5.1.6 arrangements to ensure adequate access/egress at all times.

3.5.2 The port operator should consider the necessity of arrangements for a safe and quick emergency escape, taking into account the nature of the dangerous goods and any special conditions.

3.5.3 The "Medical First Aid Guidelines (MFAG)" annexed to IMDG Code shall be used to provide with those persons effected from damages caused by dangerous goods with medical first aid in case of any health issues occurring in consequence of accidents involving such loads.

3.5.4 "Emergency Schedules (EmS)" annexed to IMDG Code shall be used for any emergencies involving dangerous goods.

3.5.5 In case of any emergencies or accidents, the first aid material to be used for response shall be kept in easily accessible locations known to personnel.

3.6 Emergency information

3.6.1 The port operator should ensure that a list of all dangerous goods in the warehouses, sheds or other areas, including the quantities, and if appropriate Proper Shipping Names, correct technical names (if applicable), UN numbers, classes or, when assigned, the division of the goods, including for class 1, the compatibility group letter, subsidiary hazard classes (if assigned), packing group (where assigned) and exact location is held readily available for the emergency services.

3.6.2 The port operator should ensure that the responsible person for a warehouse, shed or area, where dangerous goods are handled, is as far as possible aware of the status of occupancy with the dangerous goods in his area and is available in case of emergencies.

3.6.3 The port operator should ensure that the person responsible for cargo handling operations involving dangerous goods has the necessary information on measures to be taken to deal with incidents involving dangerous goods and that it is available for use in emergencies.

3.6.4 Electronic or other automated information processing or transmission techniques shall be employed to provide access to information.

3.6.5 Data sheets of dangerous materials shall normally be kept by the manufacturers of chemicals. Emergency response information and electronic databases shall be available and used in case of direct access to information.

3.6.6 The port operator should ensure that the port or berth emergency response procedures and port or port emergency telephone numbers are placed at prominent locations within or at warehouses, sheds or areas where dangerous goods are transported or handled.

3.6.7 The port operator should ensure that fire-fighting and pollution-combating equipment and installations are clearly marked as such and notices drawing attention to them are clearly visible at all appropriate locations.

3.6.8 The port operator should inform the master of any ship carrying or handling dangerous goods of the emergency procedures in force and the services available at the interface.

3.7 Fire precautions

3.7.1 The port operator should ensure that:

3.7.1.1 All parts of the interface and any ship moored to it are at all times accessible to emergency services;

3.7.1.2 Audible or visual alarms for emergency use are installed in the area or other means of rapid communication with emergency services are available;

3.7.1.3 The handling of dangerous goods are kept clean and tidy;

3.7.1.4 Before dangerous goods are handled, the master of a ship is informed of the location of the nearest means of summoning emergency services; and

3.7.1.5 the lighting and other electrical equipment in areas where dangerous goods are present on the interface is of a type safe for use in a flammable or explosive atmosphere.

3.7.1.6 Places where smoking is prohibited are designated; and

3.7.1.7 Notices in a pictogram form prohibiting smoking are clearly visible at all locations and at a safe distance from places where smoking would constitute a hazard.

3.7.1.8 The port operator should ensure that equipment used in an area or space where a flammable or explosive atmosphere may exist or develop, is of a type safe for use in a flammable or explosive atmosphere and used in such a manner that no fire or explosion can be caused.

3.7.1.9 The port operator should ensure that only portable electrical equipment of a type safe for use in a flammable atmosphere is used in an area or space in which a flammable atmosphere may occur.

3.7.1.10 The port operator should ensure that electrical equipment on a wandering lead is not used in areas or spaces where a flammable atmosphere may occur.

3.8 Fire fighting

3.8.1 The port operator should ensure that adequate and properly tested fire-fighting equipment and facilities are provided and readily available in accordance with the requirements of the regulatory authority in areas where dangerous goods are transported or handled.

3.8.2 The port operator should ensure that personnel involved in the handling or transport of dangerous goods are trained and practised in the use of fire-fighting equipment in accordance with the requirements of the regulatory authority.

3.9 Environmental precautions

3.9.1 The port operator should ensure that dangerous goods are only handled in areas which comply with the requirements of the regulatory authority.

3.9.2 The port operator should ensure that any damaged package, unit load or cargo transport unit containing dangerous goods is dealt with in accordance with the requirements of the regulatory authority and is not transported or handled unless the dangerous goods have been properly repacked and are in all respects fit and safe for further transport and handling.

3.9.3 The port operator should ensure that, if necessary, any damaged package, unit load or cargo transport unit containing dangerous goods is removed to a designated area for such cargoes.

sweeping or flushing. The said loads shall not be allowed to move into sea by rainwater.

3.9.5 During the loading and unloading of bulk cargo to and from the vessel, necessary actions shall be taken to prevent the dumping of any load from the vessel or the dock into sea. In addition, these actions shall be taken for transshipment operations.

3.9.6 Necessary actions shall be taken so that soil, water or areas of water discharge is/are not contaminated with any dangerous goods handled at onshore facilities. Additionally, these actions shall be applied for the piping line used during the handling of dangerous goods and for areas with conveyor system.

3.9.7 The capability to remove any contaminated bilge water, dirty ballast, sludge, slope and load waste from the vessel shall be provided.

3.10 Pollution combating

3.10.1 The port operator should ensure that adequate equipment is available to minimize the damage in case of a spillage of dangerous goods.

3.10.2 The equipment includes petroleum dispersion preventive fences, condensate lids, absorbing and neutralizing agents as well as cleaning agents and portable collection basins.

3.10.3 The port operator should ensure that personnel involved in the transport and handling of dangerous goods are trained and practised in the use of pollution combating equipment and facilities in accordance with the requirements of the regulatory authority.

3.11 Reporting of incidents

3.11.1 The port operator, within his area of responsibility, should ensure that, if an incident occurs during the handling of dangerous goods which may endanger the safety or security of persons, of ships within the port, of the port or of any other property, or the environment, the person having charge of the handling immediately causes the operation to be stopped, if it is safe to do so, and prevents it being resumed until appropriate safety measures have been taken. The port operator should require every member of his personnel to report, to the person having charge of the operation, any such incident they see to occur during the handling of dangerous goods.

3.11.2 For the purposes of responding quickly and effectively; the short and proper description of the event should be communicated to the emergency center as soon as possible to treat the injured personnel and mitigate any potential damage.

3.11.3 The port operator should ensure that any incident involving dangerous goods which may endanger the safety or security of persons, or of ships within the port or of the port or of any other property or the environment is reported immediately to the port authority.

3.11.4 The port operator should ensure that any damaged or leaking package, unit load or cargo transport unit containing dangerous goods is reported immediately to the port authority and that suitable remedial action is taken

3.12 Inspections

3.12.1 The port operator, where appropriate, should:

3.12.1.1 Check documents and certificates concerning the safe transport, handling, packing and stowage of dangerous goods in the port area at the time of receipt;

3.12.1.2 Check, where practicable, packages, unit loads and cargo transport units containing dangerous goods to verify that they are marked, labelled or placarded in accordance with the provisions of the IMDG Code and the appropriate national or

international legal requirements applicable for the mode of transport and that unnecessary labels, placards and marks have been removed and that the cargo transport units have been loaded, packed and secured in accordance with the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs);

3.12.1.3 Check, by external examination, the physical condition of each freight container, tank-container, portable tank or vehicle containing dangerous goods for obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.

3.12.2 The port operator should make such checks regularly to ensure implementation of the safety precautions in the port area and the safety of transport.

3.12.3 If any of the checks mentioned above reveal deficiencies which may affect the safe transport or handling of dangerous goods the port operator should immediately advise all parties concerned and request them to rectify all deficiencies prior to any further transport or handling of dangerous goods.

3.12.4 The port operator should ensure that every necessary support will be given to the port authority or any other person or institution entitled to carry out inspections when they intend to carry out an inspection of dangerous goods.

3.13 Hot work and other repair or maintenance work

3.13.1 The port operator should ensure that no repair or maintenance work resulting in non-availability of the emergency/fire equipment required by these Recommendations is carried out at the port without prior permission of the port authority.

3.13.2 The port operator and the company carrying out the repairs, after having consulted the master of a ship, where appropriate, should ensure that they are in possession of a permit to proceed issued by the port authority before any repair or maintenance work involving hot work, or any other such work which may lead to a hazard because of the presence of dangerous goods, is carried out.

3.13.3 A prior notice to be served for the estimated duration of hot work or the lack of equipment as a result of the need for permission shall allow all emergency response authorities, such as fire department, to make a satisfactory announcement to express their objection and recommend additional measures. In case of particular circumstances, such as any hot work to be performed in a hold or closed areas near a hold, the skilled personnel capable of determining whether specific safety measures are necessary shall perform a detailed field survey.

3.14 Entry into confined or enclosed spaces

3.14.1 The port operator should ensure that no person enters any enclosed space such as, for example, a cargo space, cargo tank, void space around such tank, cargo handling space, or other confined or enclosed space which has contained or may contain dangerous vapour or oxygen depleting cargoes, unless the space is free of dangerous vapour and not deficient in oxygen, and is certified to that effect by a responsible person trained in the use of the relevant equipment and sufficiently knowledgeable to interpret correctly the results obtained. The responsible person should record the measurements taken.

3.14.2 Where it is necessary for operational purposes to enter a space which cannot be freed of dangerous vapour within a reasonable time and which, therefore, can not be certified, or it is unlikely that the space will remain free of dangerous vapour, then entry should only be made by persons wearing a self-contained breathing apparatus and any other necessary protective equipment and clothing. The entire operation

should be carried out under the direct supervision of a responsible person who should be provided with self-contained breathing apparatus, protective equipment and rescue harness. The breathing apparatus, protective and rescue equipment should not be of a type that could introduce a source of ignition into the space.

3.14.3 The port operator should ensure that entry into a space follows carefully established procedures which are contained in international codes and guides.

3.15 Contaminated wastes

3.15.1 The port operator should ensure that wastes contaminated with dangerous goods are immediately collected and disposed of in accordance with the requirements of the regulatory authority.

3.16 Alcohol and drug abuse

3.16.1 The port operator, within his area of responsibility, should ensure that no person under the influence of alcohol or drugs is allowed to participate in any operation involving the handling of dangerous goods.

3.17.2 Any such persons should always be kept clear of the immediate areas where dangerous goods are being transported or handled.

3.17 Weather conditions

3.17.1 The port operator, within his area of responsibility, should not permit dangerous goods to be handled in weather conditions which may seriously increase the risk.

3.17.2 Qny unprotected load, which reacts dangerously when in contact with water, shall not be carried in rainy weather involving thunderstorms.

3.18 Lighting

3.19.1 The port operator, within his area of responsibility, should ensure that areas where dangerous goods are handled or where preparations are being made to handle dangerous goods and access to such areas are adequately illuminated.

3.19 Handling equipment

3.19.1 The port operator, within his area of responsibility, should ensure that all equipment used in the handling of dangerous goods is suitable for such use and used only by skilled persons.

3.19.2 The port operator, within his area of responsibility, should ensure that all cargo handling equipment is of an approved type where appropriate, properly maintained and tested in accordance with national and international legal requirements.

3.20 Protective equipment

3.21.1 The port operator, within his area of responsibility, should ensure, when necessary, that a sufficient quantity of appropriate protective equipment is available to all personnel involved in the handling of dangerous goods.

3.21.2 Such equipment should provide adequate protection against the hazards specific to the dangerous goods handled and should be of an approved type or made in conformity with an approved standard.

3.21 Signals

3.21.1 The regulatory authority should decide if and when a ship engaged in the transport or handling of certain specified dangerous goods in the port area, should exhibit by day or by night any special visual signals.

3.21.2 The specified dangerous goods should include:

3.21.2.1 bulk liquids with a flashpoint below 60ºC closed cup;

3.21.2.2 bulk flammable and/or toxic gases; and

3.21.2.3 explosives (other than division 1.4S), liquid desensitized explosives assigned to class 3 and solid desensitized explosives assigned to class 4.1; to the degree specified by the regulatory authority.

3.21.3 The reason for exhibiting a day or night signal is to advise maritime traffic and personnel within the port area about an increased hazard created by the presence of the dangerous goods Vessels exhibiting such signals may be subject to the special requirements and special instructions of the port authority.

3.21.4 The following four scenarios should be considered:

3.21.4.1 the ship is moored or at anchor by day;

3.21.4.2 the ship is moored or at anchor at night;

3.21.4.3 the ship is under way by day; or

3.21.4.4 the ship is under way at night.

3.21.5 When practicable, a dedicated anchorage or port should be provided for vessels carrying dangerous goods requiring the exhibition of such signals. Special restrictions may be applied to:

3.21.5.1 access to the vessels;

3.21.5.2 radio and radar transmissions;

3.21.5.3 transiting the anchorage; and

3.21.5.4 passing of ships moored or anchored.

3.21.6 Port authorities should give consideration to the separation of ships under way exhibiting the signals. The port authority may also impose specific separation distances and regulate the movement of vessels to avoid the passing of such ships in narrow channels or at bends.Where signals are to be exhibited, they should be:

3.21.6.1 by day flag “B” of the International Code of Signals; and

3.21.6.2 by night an all-round fixed red light.

3.22 Communications

3.22.1 The port authority should ensure that every ship engaged in the transport of dangerous goods can maintain effective communications with the port authority. When appropriate and practicable such communications should be carried out by VHF in accordance with the provisions of SOLAS regulation IV/7 and complying with the performance standards set out in IMO Assembly resolution A.609(15) and the requirements of the regulatory authority.

3.23 Areas

3.23.1 Dangerous cargo areas

3.23.1.1 Dangerous cargo areas should, where possible, be located so that management and/or security personnel may keep them under continuous observation. Otherwise, an alarm system may be provided or the spaces inspected at frequent intervals.

3.23.1.2 Those areas where dangerous goods are handled shall be furnished with necessary equipment and devices to prevent potential harmful effects of such dangerous goods.

3.23.1.3 The areas where dangerous goods are handled shall be provided with facilities of entrance to and exit from the same to allow for response to emergencies or the access roads to those units carrying loads that contain dangerous goods shall be kept open, if any dangerous goods are stowed or stored on the entire site and the site shall be furnished with systems that are capable of providing emergency facilities for rapid response.

3.23.2 Lorry parking areas

3.23.2.1 Separate areas may be designated for specific dangerous goods.

3.23.2.2 Segregation requirements of the regulatory authority should be met when designating areas.

3.23.2.3 Care should be taken that, in case of an emergency, adequate access is provided for handling equipment, emergency services, etc.

3.23.2.4 Adequate emergency facilities should be provided. These should be appropriate to the hazards of the dangerous goods to be handled.

3.23.3 Special areas for damaged dangerous goods and wastes contaminated with dangerous goods

3.23.3.1 Special areas for damaged dangerous goods and wastes contaminated with dangerous goods should be provided, where damaged dangerous goods may be kept and repacked or contaminated wastes separated and kept until their disposal.

3.23.3.2 Such areas should, where appropriate, be covered, have a sealed floor or ground, separate drainage systems with shut-off valves, sumps or basins and means to discharge contaminated water to special facilities in order to safeguard the port area and the environment.

3.23.3.3 Such areas should be fenced off to prevent the entry of unauthorized persons and should have facilities for watchmen. The facilities should include adequate means of communication.

3.23.4 Repairing/cleaning facilities

3.23.4.1 Where repair or cleaning facilities for ships or cargo transport units are provided, they should be situated well away from any area where dangerous goods are transported or handled. This should not preclude the carrying out of minor voyage repairs on ships at cargo handling interface or cleaning of cargo tanks at tanker terminals.

3.23.4.2 Cleaning facilities should be designated and constructed to protect the environment when environmentally dangerous goods are used or are otherwise involved, in the cleaning process.

3.23.5 Reception facilities

3.23.5.1 Facilities should be provided for the reception and disposal of bilge water, wastes, ballast and slops, contaminated with dangerous goods, as appropriate.

3.24 Training

3.24.1 The personnel who are in charge of actions and operations for the loading/unloading of dangerous goods at the onshore facility shall be provided with training on emergencies (fire, explosion, leakage etc.) and response, occupational health and safety, ISPS code security awareness and safety in line with their job descriptions and fields of work.

4 CLASSIFICATION, TRANSPORT, LOADING / UNLOADING, HANDLING, SEPARATION, STOWAGE AND STORING OF DANGEROUS GOODS

4.1 Classification of Dangerous Goods

4.1.1 Types of Dangerous Goods

Dangerous goods based on their origin and characteristics can be classified as follows:
Oil and its by-products – fire and explosion being their main risk (benzenes, liquefied petroleum gas and other fuels)
Chemical products – (Industrial, pharmaceutical and agricultural) manufactured and loaded either as final product for consumption or as by-products for industrial use. The latter constitute most of the dangerous goods transported, and if not properly handled, could cause great damage to people, transport units and the environment
Minerals – such as coal, sulfur, mineral concentrates and other metals or asbestos which can cause different illnesses, injuries, intoxication or fires
Products of animal or vegetable origin – as fishmeal, pressed cakes of oleaginous seeds and cotton, which can also cause spontaneous combustion, fire or explosions
Radioactive materials – used in a variety of industrial and medical processes, as well as for military applications, which, in high doses could cause immediate harm, or even in small doses could cause cancer and other illnesses if exposed to people for prolonged periods of time

Many of the substances from Class 1 to Class 9 are deemed marine pollutants. A marine pollutant is defined as any substance that will degrade the aquatic organisms that live in the water.

Prior to safe stowage, segregation, marking, labeling and storing of dangerous goods, it must be known exactly what hazards these handled dangerous goods pose to the user. The term ‘hazard’ in this text means a source or a situation with a potential harm with regard to People, Environment, Asset and Reputation (PEAR Concept).

All chemicals are subject to this code and are assigned to one of the classes from 1 to 9 according to the most predominant hazards they present.

4.1.1.1 Introduction and Explanation of Dangerous Goods List

Dangerous Goods List is the main element of IMDG Code, and main information about the dangerous goods are detailed therein. The list comprises 18 columns. Some examples chosen from the numerical list for dangerous goods are shown below.
Explanation of Each Column in Dangerous Goods List:

Column 1 and 18 UN Number: These are the numbers assigned for each dangerous good by the Expert Committee of United Nations concerning the transport of dangerous goods (UN List). UN Number, which is a unique four-digit number, defines the good error-free.

Column 2 Proper Shipping Name: The name given to the good by the UN. This name is exclusive to the good itself as well as to its hazard.

Column 3 Hazard Class or Division: This column shows to which class the dangerous good, which are listed and grouped from Class 1 to Class 9, belongs.

Column 4 Subsidiary Risk(s): Same dangerous goods may have more than one hazard. This Column 4 identifies this type of subsidiary risk of these dangerous goods. For example, it indicates that the good is 3: Flammable Liquid and P: Marine Pollutant.

Column 5 Packing Group: This indicates the hazard level of the dangerous good. For example, PG I Very Dangerous, PG II Dangerous, PG III Slightly Dangerous.

Column 6 Special Provisions: This indicates special conditions and/or procedures assigned specially to the dangerous good, and to be carried out during the logistics of said dangerous good. For example, when we check Column 6 of article UN 0020 AMMUNITION, TOXIC, we see the special provision no. 274. This instruction refers us to N.O.S. It indicates that the explanation made under IMDG Code 3.1.2.8 has to be taken into account. Special provisions specific to this column are put forth in IMDG Code Volume 2, Part 3.3.

Column 7a Limited Quantities: The maximum amount indicated for each inner packaging/package for the transport of the substance or article conforms to what is stipulated in Article 6.6 of this module shown in this column. It indicates whether the goods may be transported with controlled amount or not, and if transported, what the maximum cargo should be per inner packaging. A "—" sign in the column means that the relevant article or substance cannot be transported under limited quantity provisions.

Column 7b Excepted Quantity: This indicates the dangerous goods amount of a certain part of substance or article that will be transported as per 7b rule. Sender's declaration is not requested for the transportation of packages containing this type of substances. A "—" sign in the column means that the relevant article or substance cannot be transported under excepted quantity provisions. Alphanumerical codes indicating excepted quantities in column 7b signify the regulation in the consignment amounts.

Column 8 Packaging Instructions: This column contains alphanumerical codes corresponding to allowed packaging types for the substance or article, except for those concerning Class 7 radioactive materials. For example, packaging instructions P112 (a), (b) or (c) in Column 8 are given for the substance "UN 0004 AMMONIUM PICRATE, by mass, dry or wetted with less than 10% water" as included in the dangerous goods list. In the provisions section of the same column, PP26 instructions are referred to.

If there is the code "LP" (Large Packaging) in Column 8, it is referring to large size packagings. For example, UN 1264 PARALDEHYDE refers to LP01 packaging instructions.

Column 9 Special Packaging Provisions: This column includes alphanumerical codes referring to special packaging provisions, and these provisions, if applicable, are explained tables listing allowed packagings. For example, PP26 instruction for the substance "UN 0004 AMMONIUM PICRATE is specifically indicated. When the packaging instructions P112 (a), (b) or (c) of the same substance is observed, in the lower part it can be seen the wording: "*Special Packaging Provision PP26: for UN N.O.S. 0004, 0076, 0078, 0154, 0219 and 0394, packaging shall be lead-free"*. In this way, information is given about matters to pay attention to during packaging.

Column 10 IBC Packaging Instructions: This column includes alphanumerical codes referring to packaging instructions required for IBC transportation (except for Radioactive Material Class 7), and shows the IBC type allowed to be used for the transport of this substance. If no instruction is indicated in this column, in other words if this column is marked with "—" then the relevant good cannot be transported with IBC. For example, if the dangerous good "UN 1450 INORGANIC BROMATES N.O.S" is considered, the packaging is indicated as IBC08 in Column 10.

Column 11 IBC Packaging Special Provisions: This column includes alphanumerical codes referring to IBC special provisions. For example, for the substance "INORGANIC BROMATES N.O.S" included in the previously mentioned alphanumerical list, instructions B2 and B4 should be applied. These instructions are shown under "IBC08 Packaging Instructions" in the above table, in the section "Packaging Special Provisions".

Column 12 IMO Tank Instructions: This column may be subjected to alterations.

Column 13 Transportation in Tank Instructions: Instructions for transportation in tanks are indicated with codes with the letter "T" in this column. For example, UN 1099 ALLYL BROMIDE "T14" instruction is indicated in this column.

Column 14 Tank Special Provisions: Instructions in this column are indicated with the letters "TP". These provisions cover portable tanks and land transport tanks. They are found in Part 4.2.5.3 of IMDG Code. For example, for the substance defined above that is "UN 1099 ALLYL BROMIDE" it is indicated "TP2" and "TP13" under Special Provisions in Column 14. When the special provisions for the tanks are observed the stipulation below can be seen:
TP2: Filling limits stipulated in 4.2.1.9.3 shall not be exceeded. (different mathematical formulas are stipulated to calculate filling limit).

Column 15 Emergency Schedule (EMS): This column includes the emergency card number corresponding emergency procedures for ships carrying "dangerous goods". EMS includes the Fire Schedule and Accidental Spill Schedule. In this way, what needs to be done in case of a possible accident are established. For example, EMS instructions in Column 15 for "UN 0004 AMMONIUM PICRATE" above is F-B, S-Y. When these instruction are observed, F-B stipulates what needs to be done in case of fire, while S-Y established what to do in case of spills.

Column 16 Stowage and Segregation: This column includes provisions related to stowage and segregation defined in IMDG Code, Volume 1, Part 7. Column 7a includes provisions for stowage and handling (28 for stowage, 4 for handling), while column 7b includes provisions and instructions (78) for segregation. Ship types for transporting dangerous goods is grouped as below:
Cargo Ship (up to 12 passengers): If transported by closed cargo transport units, then on deck, otherwise under deck.
Passenger Ship: It is forbidden to carry this substance on a passenger ship.

Column 17 Characteristics (Features) and Observations: This column shows special characteristics (features) of relevant dangerous goods as well as any observations thereof. In other words, any substance is identified in this column together with its certain details regarding its fire, spillage, handling etc. characteristic. Instructions in this column are not mandatory. For example, in Column 17 for UN 0005 CARTRIDGES FOR WEAPONS, the instruction reads: *See Annex B Glossary, "Cartridges for Weapons With Bursting Charge (1)"*. When such section is observed, it can be seen that detailed information is provided for the good.

Column 18 UN Number: Sütun 1'in açıklamasına bakınız.

SPECIAL PROVISIONS

If it is indicated that a special provision is associated with a dangerous good in Column 6 of dangerous goods list, the meaning and requirements of such special provisions is provided explanations no.16 to no.970 included in Special Provisions Applicable for Specific Substances, Goods and Materials, Volume II, Part 3.3.

LIMITED QUANTITY

If during the transport of a dangerous good, the dispatch will be less than the limit set by UN and that limited amount will be put inside a packaging, then quality packaging of normal industrial type may be used for such goods. Packaging shall be marked with a label stating "Ltd Qty" or "Limited Quantity".

EXCEPTED

Some dangerous goods may be transported without both UN and Ltd Qty markings. These goods are subject to exclusion. For example, gas cylinders, dry ice used for cooling together with non-dangerous goods, and some instruments and devices containing dangerous goods. For this type of goods, there should be the marking: "Dangerous Goods in Excepted Quantities". No sender declaration is necessary for the dispatch of such packages.

4.1.2 Classification of Dangerous Goods

The classification is made by the consignor/shipper or by the appropriate competent authority. The IMDG Code classifies dangerous goods as follows (simplified form):

Class 1: Explosives
Division 1.1: Substances and articles that have a mass explosion hazard

Division 1.2: Substances and articles that have a projection hazard but not a mass explosion hazard
Division 1.3: Substances and articles that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.
Division 1.4: Substances and articles that do not have a distinct danger
Division 1.5: Substances that have a mass explosion hazard but with very low sensitivity
Division 1.6: Insensitive articles that do not have a mass explosion hazard
Class 2: Gases
Division 2.1: Flammable gas
Division 2.2: Non-flammable, non-poisonous gas
Division 2.3: Poisonous gas
Class 3: Flammable Liquids
Class 4: Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases
Division 4.1: Flammable solid, self-reactive materials and desensitized explosives
Division 4.2: Spontaneously combustible material
Division 4.3: Material that, by contact with water, is liable to become flammable or to give off gas
Class 5: Oxidizing substances and organic peroxides
Division 5.1: Oxidizing substances
Division 5.2: Organic peroxides
Class 6: Toxic and infectious substances
Division 6.1: Toxic substances
Division 6.2: Infectious substances
Class 7: Radioactive material
Class 8: Corrosive substances
Class 9: Miscellaneous dangerous substances and articles
The numerical order of the classes and divisions does not indicate the degree of danger.

DESCRIPTION OF CLASSES

Class 1- Explosive Substances and Articles

This type of substances transform from solid or liquid to gas with sudden explosions, therefore they may change state by releasing large and sudden energy. They are solid or liquid or a mixture of both that can generate gas to do harm to its surrounding at a certain temperature, pressure and speed by self reacting chemically, or that are designed to create an effect of heat, light, gas, sound or smoke or a combination of these through a non-explosive self-sustaining reaction.

Explosive substances are divided into several sub divisions. First differentiation consists of six divisions between explosive substances and explosive articles. For this reason, on the packaging of all explosive materials, labels should indicate not only Class 1, but also the division.

Class 1 is divided into six divisions:

1.1 Pressure hazard, possibility of a large explosion. (mass explosion hazard). Whole cargo will explode in one piece. For example, nitro-glycerine, Semtex.

1.2 Shrapnel and explosion hazard, no large explosion. Shrapnel hazard will create a series of small explosions and pieces will fly off with high speed. For example, hand grenade, pyrotechnics, fireworks and small arms ammunition etc.
1.3 Fire hazard, light hazard due to air pressure, hazard due to splashing, explosion or shrapnel, or all of them, no large explosion. However there is intensive combustion, minor mass explosion or shrapnel hazard. For example, gunpowder, rocket engine etc.
1.4 No specific hazard, low explosion hazard. In case of any accident, if stored in large quantities, may cause serious damage to the area of storage. For example, small military ammunition, signal flare etc.
1.5 Pressure hazard, but excessively insensitive substances. These are substances that can create large explosions, but with very low sensitivity to mass explode if exploded. It requires a significant amount of energy to ignite, such as a detonator. It has the same hazard as 1.1. For example, plastic explosives, demolition explosives etc.
1.6 Articles that have solid substances in high quantity. These are not excessively sensitive devices, and they do not create large explosions. They have unspecific hazards as Division 1.4. They are quite insensitive as Division 1.5. For example, articles, extremely sensitive explosives etc.

Additionally, on the hazard label, there should be a letter of conformity. This is added to class and division numbers to indicate what it can and cannot be transported with. Mixed explosive cargoes are not forbidden altogether but some combinations are not allowed.
Unclassified explosives shall not be transported with any explosives except for Group S.
Moreover, any substances belonging to Class 1 (except 1.4S) shall not be transported with other dangerous goods.

Characteristics: All substances and articles in Class 1 have a common explosion effect when exploded or detonated. They disintegrate very fast and for this reason a very large energy can be released depending on the conditions.

Initiator of explosive substance detonations can be:

- Heat flow (when the vehicle start to burn, e.g. accidents)
- Collisions (When a shipped article falls down from very high during loading)
- Due to the pressure resulting from ignition of a primer.
- Results of an explosion or a detonation may be the following
- Detrimental pressure wave
- Disintegration impact (throwing off of fragments)
- Fire hazard, formation of heat (glare impact)
- Formation of gases (Release of respiratory toxins)

Some examples of goods in Class 1:
Fireworks, lighting devices (lighting, signal, warning)
Explosive substances, black powder, dynamite for mining or road construction.
Highly dangerous, large amount of explosive substances can cause extreme hazard, so the goods in this class should be used methodically with extreme care.

Dangerous goods in Class 1 are divided into compatibility groups, which are A, B, C, D, E, F, G, H, J, K, L, N and S. Particular attention must be paid when these are loaded together. Loading and storage must be carried out as per Table for Mixed Loading.

An important matter to consider during explosive substance logistics is that the explosive substances possess their own oxygen source, and that they can -therefore- combust or explode in environments where a flammable material would not ignite, even under water. That is why careful storing, handling and transporting is of utmost importance.

Class 2 – Gases

All gases are compressed during storing and transportation to save space. What creates the potential hazard is that pressure. If suddenly released, an immense force may be created that could cause pressure and shrapnel hazard similar to Class 1. Please note that the behaviour of gases can change significantly with effect of wind and heat. Some gases are stored and transported in liquid state as a result of pressure or cooling.

Excluding explosion risk, gradual gas leakage results in the displacement of air, which can cause asphyxiation. Therefore storing and handling should be carried outside in the open as much as possible. Gas leakages (particularly for liquefied gases) can cause significant drops in temperature and may harm people. Moreover, they can cause other goods to become readily fragile during their storage. All these hazards are related to the storage of gas under pressure.

Flammable gases, if leaked, disperse into air and can combust or explode if get in contact with an ignition source.

If there is no fire hazard and toxic hazard for stored gases, hazard sign (label) will be green.

Toxic gas is a gas that gets into one's circulation when inhaled, that spreads to the body, and that -in some way- prevents human body to function properly, most likely fatally. This must not be confused with asphyxiation, because some toxic gases, when inhaled, are fatal even if with a one-in-a-million chance. That is why they are not safe in indoor and outdoor areas.

There might be problems further to those above: Some gases have multiple harms. For example, they may be flammable and toxic; some have an oxidising effect, they promote combustion more than air; some are corrosive and might cause burns if contacted with tissue, particularly when wet.

Characteristics of Class 2 Gases:

Gases may have hazardous characteristics as indicated below: flammable, explosive hazard together with flammable gases, toxic, corrosive, asphyxiating, cooling, oxidising etc.

Hazard Classification Codes of Gases

A	Asphyxiant	UN 1066 Nitrogen, Compressed
O	Oxidizing	UN 1072 Oxygen, Compressed
F	Flammable	UN 1978 Propane
T	Toxic	UN 1062 Methyl bromide
TF	Toxic, Flammable	UN 1023 Coal Gas, Compressed
TC	Toxic, Corrosive	UN 1017 Chloride

TO	Toxic, Oxidizing	UN 3083 Erchloryl fluoride
TFC	Toxic, Flammable, Corrosive	UN 2189 Dichlorosilane
TOC	Toxic, Oxidizing, Corrosive	UN 1045 Fluor, Compressed

It is mandatory to indicate the classification codes on the shipping documents only for goods in Class 1. Information on hazard labels should be sufficient to ascertain the dangers. Explosion and combustion of gases during logistics can be due the reasons below: sparks (flame) and static electrical discharge.
Some hazards and characteristics are set forth below:
Disintegration Hazard: Outer packaging of substances in Class 2 may be subjected to high internal pressure. When the outer packaging cannot withstand the internal pressure, hazards may occur due to thrown-off fragments and release of substances.
Self-combustion: When used with oxygen, self-combustion may occur without any heat flow. For example, use of greasy cleaning rag.
Liquefied Substances: Many substances in Class 2 are liquefied for transport. Some of which have to be intensely cooled to liquefy.
Refrigerated and Liquified Substances: Refrigerated and liquefied substances evaporate readily at ambient temperature. Evaporation also means that the ambient temperature is absorbed. Cooling results in the formation of mist. Cooling creates a mist at the evaporation area and there exists the hazard of freezing when in contact with the skin. Skin texture may be completely destroyed in the meantime.
Visibility of Gases: Some of the gases in Class 2 are invisible. For example, oxygen, nitrogen or methane etc. If these substances are also odourless, as nitrogen and methane, their leakage cannot be detected. Propane / Butane are also odourless gases.
Rising and Sinking Gases: If the gasses are purposefully refrigerated, they may be of different weights. Some of them are heavier than air and they sink when released, and cause asphyxiation hazard. Substances heavier than air when refrigerated are for example nitrogen, argon and helium. Other gases are lighter than air and they rise, e.g. Helium.
Compressed Gases: These are gases, volume of which has been decreased by pressure only, that are in gaseous state completely at 20°C. Pressure is high in compressed gases and they try to escape from the compressed environment, and that is the main reasons causing the hazard.
Liquefied Gases: These are gases that are transformed to liquid or semi liquid state by applying sufficient amount of pressure under normal temperatures. Gases are liquefied to save space. When a substance transforms from solid to liquid state, ts volume is considerably reduced. Example: LNG.
Deep Refrigerated Liquefied Gases: These are gases that are liquefied by decreasing their temperature (e.g. by densification). Again with this liquefication, saving space is possible. However, it is necessary to maintain the low temperature levels to prevent the gas from evaporating. Therefore more careful transportation method have to be used. Gases in Solution: Another method to decrease volume is to dissolve the gas in a liquid. This method is useful for gases that cannot be compressed in any pressure sensitive way. Example: Acetylene dissolved in acetone.
Small Single-use Vessels: They have various areas of use, and generally they cannot be refilled. Gas tubes, sprays and lighters belong to this group. Example: Camping cylinder for picnics.

Oxidizing gases: Danger posed by oxidizing gases is that they can initiate and amplify combustion in flammable substances, and even in non-flammable ones. Oxygen in itself does not combust, but it is an essential part of combustion as a constituent of air (20,9%). High oxygen levels, therefore, would cause more intense combustion. In short, substances readily flammable with air would become explosive with pure oxygen, whereas those that have good flammability with air become excessively flammable, and those that are non-flammable with are become flammable Example: Oils, mineral oils.

Physical Hazards: Possible physical hazards of storing and transporting gases can be summarized as below:

Sudden and excessive propagation of pressure ("explosion")

Alteration of air causing asphyxiation

Sudden temperature drops with damage potential

Possible Causes for Damages to Vessels:

Damaging of the tube valve during handling or in a traffic accident.

Exposure to extensive heat causing safety valve or isolating valve to move, resulting in the leakage of gas.

Vehicle being involved in an accident or having tipped over causing valves or pipes to be cut-off, causing damage to the insulation of the cryogenic storage or causing pressure vessel to explode.

There are some considerations to bear in mind during transportation of gases:

Loading/unloading should be performed outdoors as much as possible.

Open-top vehicles should be used for tubes, if possible.

If an enclosed-body truck will be used, sufficient ventilation must be ensured.

Proper transportation of gas tubes requires appropriate constraint (holding) systems designed for this purpose as well as vehicles with appropriate loading and unloading facilities.

Even in rarely performed transportations, the tubes must be secured and must not protrude from the sides and the back of the vehicle.

Liquid gas tubes should be stored / handled / stowed vertically to keep the liquid away from the valve.

Contact of corrosive substances to the vessel should not be allowed, while taking due care that the vessel is robust.

Considering the severe results of extensive heating in case of fire, extensive firefighting precautions must be taken during transportation of gases (whether the gas is flammable or not).

Personnel involved in these gases must be prepared against possible leakages:

Gas leakages manifest themselves by creating a mist (fog) in the air and/or by cooling and humidifying the air. Larger leakages can be heard. Some gases (not all) have an odour.

The vessel itself may also be dangerous. Gas tubes are usually very heavy and can cause significant damage if tipped over. Damage to hands and feet are possible.

Gases are divided into 3 sub-divisions:

Flammable Gases (2.1)

These gases, when leaked for storage, tube or pipe, may combust and burn in the form of a fireball. Moreover, if they do not combust, they can combine and form an explosive mixture of gas and air.

Hydrogen, acetylene, propane and methane (natural gas) can be given as examples of this type of gases.

Flammable and Non-toxic Gases (2.2)

Gases in this class are found in compressed vessels and they are asphyxiating in closed environments. Pressurized gases, liquefied gases, pressurized cryogenic gases, gases compressed in a solution, and oxidizing gases are in this class.
Example: Nitrogen, carbon dioxide and oxygen.

Toxic Gases (2.3)

Only a few of the toxic gases intoxicate, but their effect continues even if there is sufficient amount of clean air. This means that toxic gases pose an hazard in open spaces as much as they in do in closed areas. Moreover, toxic gases may become asphyxiating by replacing or diluting the air.

It must not be forgotten that toxic gas does not mean asphyxiating gas. Certain amount of gas must mix with the air for asphyxiation to take place. Timely intervention to people exposed to these gases in environments effected by the gases may overcome vital dangers. However, toxic gases, even in one part per million in air, can be fatal.

The logic inclined to group corrosive gases and toxic gases in the same class is also the same. A dry corrosive gas, due to the weak contact of gases, can do almost no harm to other substances. However, a corrosive gas dissolved in a liquid is dangerous. Respiratory system and lungs have liquids, therefore inhaled gases can cause serious injuries and possible death by damaging the lungs through reacting with water therein.

Toxic gas leakages can pose a danger to hundreds or even thousands of people depending on the sale of the leakage and the relevant conditions. Toxic gas depots do not have pressure reduction system due to their known harm to the ventilation systems. Instead, there are well-guarded ventilation equipment robustly made to withstand possible impact damages. Damaged, gas containing vehicles can pose extreme risks to the environment they are in.

During the transport of toxic gases, operator must have the relevant equipment used by relevant people to ensure the safety of life of the team during the incident, and must have such equipment in place in relevant locations.

If the toxic gases are transported in tubes in enclosed vehicles (such as ships, trucks, trains etc.) ta (örneğin; gemi, kamyon, tren, v.b.), personnel cab and the load must be separated from each other, and the compartment where the load is should be air-tight.

Examples of these gases: Sulphur, fluorine, methyl mercaptan, sulphur dioxide

Class 3 – Flammable Liquids

This is the most common of the hazard classes, and according to the UN 55% of the total tannage of all dangerous goods transported worldwide belongs to this

Flammable liquids include some substances which are intensely used in industries such as petroleum products used as fuel, paints and paint solvents, ink, adhesives.
If a substance meets the requirements below, it is included in Class 3:

- It is a liquid,
- It can create a pressure of maximum 3 bars in closed vessels,
- Its flash point is 60°C at the highest.

Flammable liquids are arranged as below:
Classification Code F: Flammable liquid, no sub-hazard
Classification Code FT: Flammable liquid and toxic
Classification Code FC: Flammable liquid and corrosive
Classification Code FTC: Flammable liquid, toxic and corrosive
Classification Code D: Desensitized explosive liquid.
Characteristics: Substances in Class 3, in additional to their being flammable, can also be corrosive and toxic.
All of the flammable liquids create a vapor which is heavier than air to a certain degree, consequently they replace air particularly in low and/or closed places. Therefore, asphyxiation is always the second possible hazard. Handling / storing of flammable substances should be carried out in open areas, and sufficient ventilation must be provided if in closed areas. Apart from asphyxiation, many flammable liquids have unique secondary hazards such thinning of the skin texture and eczema as a result of toxic effects due to swallowing and/or inhalation of vapor.
Fire Hazard: Substances in Class 3 can combust as an explosion when suitable conditions are present. Sources of combustion can be: sparks due to electrostatic charge, sparks that occur during discharge, hot surfaces, flames etc. Flash point is the temperature where the liquid fuel can produce enough vapor to feed its combustion continuously once it is ignited. Smoke from combustible liquids leak to lower areas in the absence of wind. Combustion possibility could endure for a long time because the dissipation of these substances requires a long time. Smoke from flammable liquids could pose a high danger of explosion.
Electrostatic Charge: When moved fast, solids, liquids and gases can be charged with static electricity. If suitable conditions are present, they can cause electrostatic discharge. Sparks related to electrostatic discharge are hidden sources of combustion.
Examples:
—Soles of shoes can be charged during walking.
—Benzene and mineral oil products must not be transported in chargeable spare jerrycans.
—During the flow of liquids in pipes, dangerous situations may occur when suitable conditions are present.
—When chargeable liquids are sprayed drops of different sizes form. Electrostatic charging can be prevented by grounding precautions.
Dangerous Mixtures: Flash point can decrease when dangerous goods are mixed, and explosion hazard can increase. Even a mixing of benzene to heating oil by a percentage of %3,5 would decrease the flash point by 23°C.
Explosion Hazards: All flammable substances accommodate explosion hazards. Mixtures below Lower Explosive Limit (LEL) are weak, i.e. they do not combust. Mixtures above Upper Explosive Limit (UEL) are very dense, i.e. with enough oxygen they can combust, but with no explosion hazard.

Class 4 – Flammable Solids (Self Decomposing and Desensitized Solids)

Apart from gases and liquids, solids also do possess a fire hazard. Any fire incorporating a substance in this class is observed to be very dense, with high heat, and hard to extinguish. Unwanted hazards such as toxic and/or corrosive gases, most probably caused by combustion, will occur. For safety, substances in this class should be addressed as other flammables and must be kept away from any probable fire source. This class is divided into three division.

Class 4.1 Flammable Solids

This class included substances that can readily combust with heat (generally due to friction); that can decompose by themselves, thereby heating themselves (self-reactive); boosted explosives made safer to be transported as separated from water and alcohol. Substances in the sub-class requires temperature controlled transportation.
Characteristics: Apart from being flammable, substances in Class 4.1 have the properties below:
Toxic gas generating, explosive, self-decomposing, toxic, corrosive, oxidizing
Flammability of powder: Substances in Class 4.1 are usually in powder form, and they need to be transported as bulk. When the powder floats, dangerous powder explosions may take place.
Self-decomposing Substances: Some substances in Class 4.1 are inclined to decompose in the form of explosions after a certain air temperature.
Example of substances in Class 4.1:
UN 1309 ALUMINIUM-POWDER, COATED, 4.1, PG II or III

Class 4.2 Spontaneously Combustible Substances

This includes substances that -under normal temperatures- are known to be liable to spontaneous combustion slowly when in high amounts or swiftly when in low amounts, similar to self-combusting substances. They require air-tight transportation and storing.
Characteristics:
Spontaneous combustion, spontaneous heating, toxic, corrosive, oxidizing
Example of substances in Class 4.2:
UN 1381 PHOSPHORUS, WHITE, DRY, 4.2 (6.1), PG I
Self-ignition: Some substances in Class 4.2 can self-ignite when in contact with air!. These substances are carried in a protective liquid to prevent this. If this liquid leaks, fire may occur without any fire source.

Class 4.3 Substances Which, in Contact with Water, Emit Flammable Gases

These are substances known to be readily reacting with water. Flammable gas created during the reaction can combust, even explode. Intervention are generally associated with fire-fighting methods, which, however, is completely inappropriate for this category. These substances require transportation and storage completely without humidity. They can possess the hazards below:

They can combust in contact with a fire source, can create gases, can be toxic and corrosive.
Humidity in air can leave gases on covers that can leak liquids, these can combust in case of sparks and cause serious burns. Some examples for substances in Class 4.3: UN 2257 POTASSIUM, 4.3, PG I

Class 5- Oxidisers

Substances that contain oxygen (the element that provides for combustion) in abundance are included in this class. These substances can disintegrate (decompose), and release oxygen during such process. Where oxygen is in abundance, substances that are flammable when in contact with air can become explosive, substances that are flammable when combined with air can become excessively flammable, and even non-flammable substances in contact with air can become very flammable. For safety, substances in Class 5 must never be stored or transported with another flammable substance even if they are at a distance. These substances are corrosive. This class has two divisions.

Class 5.1 Oxidizing Substances

These substances are found in materials of daily use where excessive oxygen is favourable, and they are naturally occurring. For example: safety matches, bleachers, disinfectants, herbicides, fertilizer etc.
Characteristics:
Flammable, spontaneous heating, corrosive, toxic
Substances in Class 5.1 tends to release oxygen aggressively. This property can be dangerous in two different ways:
If these substances come in contact with flammable material (such as wood), combustion may occur. Explosions may occur if mixed with other substances. .
Examples of substances in Class 5.1:
UN 2015 HYDROGEN PEROXIDE, SOLUTION, STABILIZED, 5.1 (8), PG I
UN 2067 AMMONIUM NITRATE BASED FERTILIZER, 5.1, PG III

Class 5.2 Organic Peroxides

These are synthetic substances that have self oxidising potential because they contain not only oxygen but also carbon and hydrogen (for example: oxygen enriched fuel) Some of the nondurable components are too dangerous to be allowed for transportation. While some of them requires particularly low temperatures and / or excessive dilution to be regarded sufficiently safe for transportation. Self reacting organic peroxides would have self increasing decomposition temperatures. Above such temperature, an unstoppable self heating cycle will occur, and eventually the ignition source will explode even without air. This is a rather dangerous sub class.
Substances in Class 5.2 generally have corrosive and / toxic properties. Certain substances in Class 5.2 can only be dispatched by temperature control. Operation personnel should always check the control temperature during the logistics.
Characteristics:
Exothermic reactions can occur at normal and high temperatures. Flammable, explosive.
Substances in Class 5.2 are flammable. These substances are so dangerous that they are allowed to be transported only in very small units per external packaging. Peroxides can ignite flammable substances. Due care must be paid when contacting peroxides. It can cause severe harm to eyes!
Example of substances in Class 5.2:
-UN 3108 ORGANIC PEROXIDE, TYPE E, SOLID (DIBENZOYL PEROXIDE)

Class 6- Toxic and Infectious Substances

This class has two divisions. People, living beings exposed to this type of substances can become ill suddenly or in the long long term. It may result in sudden death or death after absorption of a certain dosage. From a human perspective, Class 6 substances can enter into the human body by one of the various ways such as inhalation, absorption and swallowing, or by all of them. Hygiene is of utmost importance when working with this class.

Class 6.1 Toxic Substances

These are chemical toxins effecting the victim biochemically. Most of them have secondary hazards such as flammability and /or corrosiveness.
Substances in Class 6.1, apart from being toxic, can have the characteristics below:
Flammable, spontaneous heating, corrosive, oxidizing, formation of flammable gases.
Toxic substances have different effects on humans, animals and the environment.
Toxic substances are widely used in all living and industrial places.
Toxic substances can be taken into the body in various ways:
Swallowing,
Dermal contact or
Respiration.
Whether a substance is toxic or not depends not only on the type of the substance but also the amount taken in by the person. (Dose-Effect Relationship).
Some substances, apart from being toxic, are corrosive and/or flammable. For example: UN 1595, DIMETHYL SULPFATE, 6.1 (8), PG I
Mixtures of some of the substances in Class 6.1 can result in toxic gases particularly in water transportation. Example: If the suction-pumping tanks are not thoroughly cleaned and if there remains acid residues in the tank, by the mixture of such acid residues and cyanides, hydrocyanic gases may form!
Example of some substances in Class 6.1:
UN 1613 HYDROGEN CYANIDE, AQUEOUS SOLUTION (HYDROCYANIC), 6.1 (3), PG I
UN 1557 ARSENIC COMPOUND, SOLID, N.O.S. 6.1, PG I, II or III

Class 6.2 Infectious Substances

Hazards of these substances originate from living organisms, and therefore effect the body biologically. This is a sub-class including living beings, vaccines, medical wastes, genetically modified microorganisms, human and animal cadavers.
Most distinct characteristics of these substances is infection hazard. Our bodies do not have a system to recognize substances with infection hazard. For that reason, during the loading, transportation and unloading of these substances utmost attention must be paid! Leakages of dangerous goods must be recorded even if they are In small quantities. Example of substances in Class 6.2:

- Bacteria
- Viruses
- Hospital wastes
- Anatomical parts with pathogens

Examples: UN 2814: Lassa virus, Ebola virus, Rabies virus, Covid-19 virus UN 2900: Hand, foot and mouth disease virus
In case of leaks of this type of substances, police, disaster and emergency management presidency (afad) and fire department must be notified immediately.

Class 7- Radioactive

Radioactive substances are those that release energy in the form of ionizing radiation that effect other substances. Radioactive substances can change and seriously harm the

living tissue. Moreover, it can also contaminate non-living things. Containment of substances in this category requires expertise. Radiation-impermeable substances (substances that are not affected by radiation) are few in number. Heavy metals and internal space (hollowness) in some special boxes can be useful.

There are three different label categories indicating the hazard level of radioactive packages (parcels) and the hazard level increases directly proportional to the increase in their number. Despite the fact that this class makes up only a small fraction of the total tonnage of transported dangerous goods, the number of packages is high. Additionally, substances and articles in this class contain extremely very important substances for reactors. These substances include isotopes for medical purposes, smoke detectors and even luminous signal devices. Radioactive susbtances can also be found in armatures and measurement devices.

Most significant hazard of these substances is the radioactive beams, which can inflict serious harm to human body. In our bodies, there is no organ to detect radiation. Natural protective mechanisms have no chance against radiation. Therefore it is of utmost importance to conform to the limits values stipulated by rules. Use of radioactive substances must be decreased to minimum for the safety of living beings.

Generally, a special training certificate is required to transport dangerous goods in Class 7.

Class 8 Corrosive (Acidic) Substances

These substances have the risk to chemically react with other substances. These substances, if spilled, effects or even destroys the road of transport, other goods, other substances in its surrounding and more importantly human tissue. The main problem is the limited number of substances for the effective containment of corrosives. Modern-day plastics are suitable for this purpose.

For the common people, corrosives are substances used on a daily basis. For example household bleach, battery acid, hydrochloric acid etc. In transportation, corrosives are more common and higher in amount compared to daily use. Consequently, leakages of these acidic substances can result in large hazards. Leakages in the amounts encountered in transportation should be handled by emergency services with proper service tools and equipment.

As in other classes, secondary hazards arising from the corrosive itself or from by-products and hazards caused by its reaction with other substances are highly probable.

Substances in Class 8, apart from their corrosive effect, can have the characteristics below:

Fire hazard, formation of corrosive smoke, reaction with other substances, toxic, oxidizing, corrosive effect.

Acids can inflict significant damage to human body and to materials with their corrosiveness, or even destroy them.

Substances in Class 8 are not only in liquid form. Some substances are carried in solid state (powders, granules), for example hydrate and potash. These substances, when mixed with wet or humid air become aggressive (for example, ingress to eyes, respiratory tract, or contact with hands (due sweat on hands) during loading or unloading).

Smoke from substances in Class 8 may also result in corrosive effects. Concerning the leakages of substances in Class 8, general care must be paid and protective equipment

must be available always, because even small acid drops can result in serious harm on the eyes and the skin. Corrosive smoke can damage the body from the inside when inhaled.
Example of substances in Class 8:
UN 1789 HYDROCHLORIC ACID (MURIATIC ACID), 8, PG II or III
UN 1824 SODIUM HYDROXIDE (CAUSTIC SODA), 8, PG II or III
UN 1814 POTASSIUM HYDROXIDE, PG II or III

Class 9 – Miscellaneous Dangerous Substances and Articles

	Symbol – Seven vertical black stripes on the top half, a battery group and one failed battery and one flame emitting battery on the lower half. Background colour: White Number 9: At the bottom corner, underlined

Class 9, which is not included in the eight basic hazard classes and which was subsequently added to hazard classification classes by the UN, is for substances that do not fit the criteria to belong to another class but that are known to be hazardous the humans and/or the environment. Despite the fact that Class 9 did not included many substances as the other classes in the beginning, its list is getting longer. There are different approaches to the use of Class 9 in various national and international regulations.
Dangerous goods in Class 9 are separated as follows:
Characteristics: Substances that may cause danger during their transport but that cannot be identified in another class because they do not conform to relevant classification criteria.
Therefore, there is no typical hazard for the substances in this class, but individual hazards.
Example of substances in Class 9:
Dry ice: Low temperature and asphyxiation hazard,
Asbestos: Health issues in the long run,
Lifesaving equipment (self inflating): Hazardous if accidentally triggered during transport.
Example: UN 2590 ASBESTOS, WHITE, 9, PG III Carcinogen
UN 2315 POLYCHLORINATED BIPHENYLS, 9, PG II Forms carcinogenic dioxins in case of fire
UN 3268 AIRBAG, 9, PG III Includes substances in Class 1
UN 3090 LITHIUM METAL BATTERIES, 9, PG II Short-circuit and fire hazard
UN 3258 ELEVATED TEMPERATURE SOLID (LIQUEFIED METALS), N.O.S. 9, PG III Fire hazard and combustion hazard.
Marine Pollutants
Marine pollutants are substances subject to MARPOL 73/78 ANNEX III provisions, as revised.

Substances, materials and articles identified as marine pollutants are shown with the symbol "P" on Column "MP" in the index.
Marine pollutants, if meeting the criteria of any class from 1 to 8, shall be moved to such entry suitable as per their characteristics. If it does not meet any such criteria, and if there is no relevant entry in Class 9, they shall be placed under: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, B.B.B, UN 3077 or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, B.B.B, UN 3082 whichever is fitting.

4.1.2.1 Labelling, Marking And Plating Requirements

Labelling

If the substance or article is specifically listed in the dangerous goods list, a hazard class label shall be attached for the hazard indicated on column 3 of the list. For any risk indicated with a class or division number in column 4 of the dangerous goods list, a secondary risk label shall also be attached.

Labels shall conform to the colours, symbols, numbers and general form as shown in the attached brochure. When appropriate, it shall have a dotted outer line. This is not necessary if the label is applied with a contrasting coloured background.
Labels shall be square, rotated 45° (diamond shape) and their sides shall be at least 100 mm x 100 mm. This is different for packages that only allow smaller labels to be attached. They shall have a line parallel to their sides, 5 mm inside from the edge. Relevant line shall be the same colour as the symbol on the upper half of the label, while it shall be the same colour as the shape in the bottom corner on the lower half. Labels shall be on a contrasting colour background and shall have dotted or straight outer border lines. Quality of labels shall not deteriorate outdoors and shall remain unaltered during the entire transport and at least three months at sea.

Marking

Dangerous good shall be marked with the Proper Shipping Name and corresponding "UN" code, and various markings (do not expose to sun, do not wet) on each package.

Placard

Except in the case where the label and/or marking attached to the package is clearly visible from outside of the cargo transport unit, enlarged labels (placards), markings and signs shall be placed to the outer surface of the cargo transport units to show that the content of the unit is dangerous.

Documentation

Dangerous goods packages should be clearly marked, labelled and plated to indicate the dangerous properties of the goods they contain. However, this alone is not enough for the safe handling dangerous of goods on a port, and for taking appropriate precautions. To that end, information should be provided to the port in advance in a format that includes the information below.
1. UN Number
2. Proper Shipping Name

3. IMDG class category (including division if any) and all secondary hazards. A substance may possess hazards of more than one class.
4. Packaging group, when applicable (Class categories 3, 4, 5, 6.1, 7, 8, 9)
5. Packaging number and type
6. For each UN Number and Proper Shipping Name (PSN), total amount of dangerous goods as volume (litres) or mass (weight) (in kg).
7. Flash point (For substances with flash point (FP) of 61°C or less) and any other additional hazards not previously indicated.
8. When applicable, the wording 'Marine pollutant' and the proviso "solids and liquids unless specified otherwise" of Class 9 (if the goods are indicated as hazardous to the environment), correct technical name of the pollutant shall be added in parenthesis.
9. Notification signed in the name of the shipper stating that the lot has been properly identified, classified, marked, labelled and is fit for shipment by sea.
10. Sometimes additional information may be necessary to indicate explosives, gases, radioactive substances, high-temperature cargoes, unclean empty packaging, dangerous good wastes, limited quantity, and living activity under fumigation.
11. For infectious substances, full name of the buyer, name and contact phone number of the person in charge shall be indicated.

Class 1		
	**1**	Explosive substances and articles used to produce explosions or pyrotechnic effects
Sub-Classes		
	**1.1**	Explosives with a mass explosion hazard
	**1.2**	Explosives with a severe projection hazard
	**1.3**	Explosives with a fire, blast or projection hazard but not a mass explosion hazard
	**1.4**	Explosives with a minor fire or projection hazard
	**1.5**	An insensitive substance with a mass explosion hazard
	**1.6**	Extremely insensitive articles

Class 2		
	**2.1**	Flammable gas
	**2.2**	Non-Flammable, compressed gas
	**2.3**	Toxic or poisonous gas
Class 3		
	**3**	Flammable liquids
Class 4		
	**4.1**	Flammable solids
	**4.2**	Spontaneously combustible solids
	**4.3**	Combustible solids when in contact with water
Class 5		
	**5.1**	Oxidizer
	**5.2**	Organic peroxide (5.2 new ADR 2007)

Class 6		
	**6.1**	Toxic substances
	**6.2**	Infectious substances
Class 7		
	**I**	Category I – White (symbol 7A)
	**II**	Category II – Yellow (symbol 7B)
	**III**	Category III – Yellow (symbol 7C)
	**Fissile**	Criticality safety index label (symbol 7E)
Class 8		
	**-**	Corrosive
Class 9		
	**-**	Miscellaneous dangerous compounds

Explanations of hazard classes in Article 4.1.2 above is addressed to the document "Dangerous Goods Classes and Packaging Explanations", which is attached.

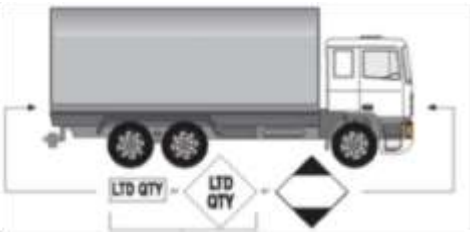
4.2 Dangerous Goods Packing and Packages

Markings, labels and/or placards on products are all channels of communication to the user.

These communication channels will tell the user the characteristics of a consignment or product. The IMDG Code provides clear procedures related to authorization of consignments as well as advance notification, markings, labels and documentation (by manual, electronic data processing or electronic data interchange techniques and placarding).

The code specifies clearly that no person may offer to transport dangerous goods unless the goods are properly marked, labeled, placarded, described and certified on a document. Those who are transporting dangerous goods must indicate the UN Number and proper shipping name clearly on the consignment. In the case of marine pollutants, the word "marine pollutant" must be on the document accompanying the consignment. This requirement is particularly important in the case of an accident involving these goods, in order to determine what emergency procedures are necessary to deal properly with the situation. In the case of marine pollutants, the captain of the vessel needs to comply with the requirements of MARPOL 73/78.

Packaging



Limited Quantity

Packaged Dangerous Good

Explanations of hazard classes in Article 4.1.2 above is addressed to the document "Dangerous Goods Classes and Packaging Explanations", which is attached.

4.2.1 Packaging, Stowing, Segregation and Conformance

General Provisions for Packaging

Hazards of dangerous goods tend to change depending on how the goods are "protected" (packaged). Obviously, packaging (with the purpose of protecting the dangerous goods) should be well made, in good condition, not affected by the good it is carrying, sufficiently robust to withstand potential risks during transportation by sea and handling etc. In this way, to protect the health and safety of everyone involved in the transportation chain, great attention is paid to goods protection and packaging as per *IMDG Code*. Primarily, the *Code* distinguishes five main goods protection categories and stipulates which dangerous goods can be (or cannot be) transported under which protection category.

Packaging Instructions

Dangerous goods shall be packaged with good quality packaging, including IBC's and large packages robust enough to withstand impacts and handling operations normally encountered during transportation as in transhipments and subsequent manual or mechanical handling between cargo transport units and between cargo transport units and warehouses (including removal from pallets or integrated units) When being prepared for transport, all packages, including IBC's and large packages, shall be constructed and enclosed to prevent any loss of content due to vibrations or changes in temperature, humidity and pressure under normal transportation condition. During transport, no package, IBC or large package should be contaminated with dangerous waste on the outside. These rules shall apply to new, reused, prepared-for-reuse or remanufactured packaging, IBC's and large packages as applicable.

Parts of packaging, including IBC's and large packages, in direct contact with the dangerous good:

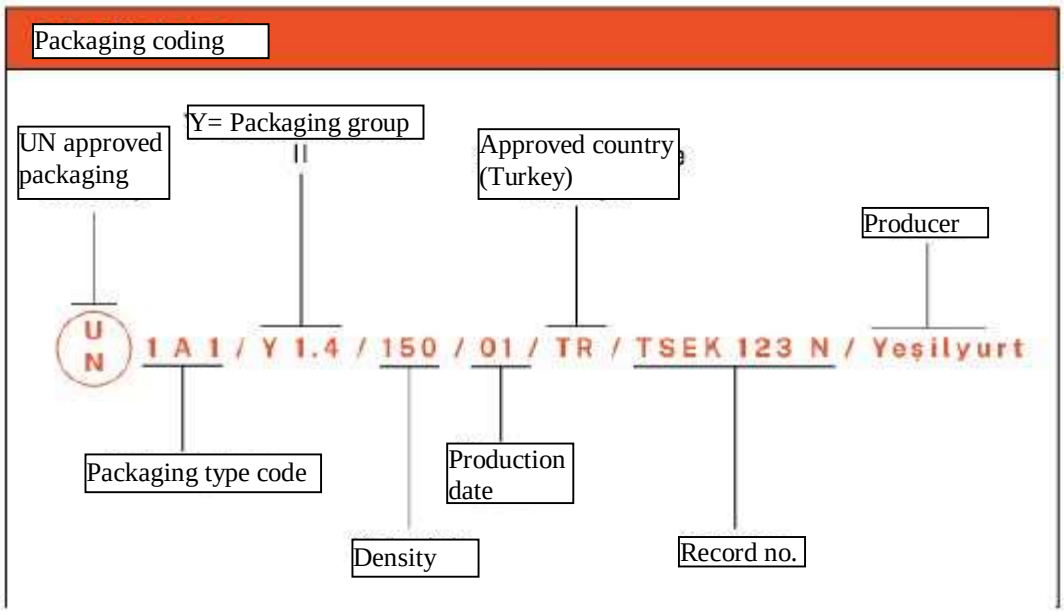
.1 Shall not be affected by these dangerous goods or be clearly weakened by such dangerous goods, and

.2 Shall not be a catalyst for any reaction or shall not have any hazardous impact such as reacting with the dangerous good,

.3 Shall not allow leakage of dangerous goods that pose an hazard under normal transport conditions.

When necessary, an suitable inner lining should be provided or a treatment should be made.

Packaging instructions for dangerous goods in Classes 1 to 9 for packages other than IBC's and large packages is indicated with the letter "P", while for IBC's letters "IBC" are used, and for large packages the letters "LP". Special packaging provisions: for packages other than IBC's and large packages "PP", for IBC's "B", and for large packages "L".



Package & Packaging Coding

Meanings of various numbers and letters of packaged goods in containers is shown on the figure above. All dangerous goods transported by sea with packaging shall be marked according to UN packaging code.

Hazard Warning Plates/Labels:

1- When used on CTU's (container etc.) and vehicles:

Dimensions: 25 cm x 25 cm

2- When used on packages (packaging):

Dimensions: 10 cm x 10 cm

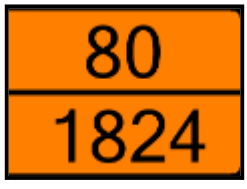
Inscribed Orange-coloured Plates

1- When attached to a vehicle (for example tanker truck):

Dimensions: 40 cm x 30 cm

2- When on cargo transport units (CTU's), containers:

Dimensions:25X25



Packaging Signs

▪ They shall be visible and readable at first sight,

▪ The information on the package shall be readable even if the package remains under sea for at least three months.

▪ They shall be placed on the outer surface of the package, with a contrasting colur on its background, and

It shall not be together with other packaging signs, in such a way that it would reduce its effectiveness.

Every packaging should be equipped with warnings related to the dangerous good it contains:

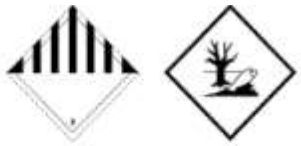
▪ Substance name

▪ UN Number

▪ Hazard label(s)

▪ Marine Pollutant sign (if applicable)

Label:



UN Number: UN 3077

PSN: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (AZO COMPOUND)

Minimum font size on packaging (UN Numbers)

- Basically 12 mm
- <30 L / 30 kg packages = 6 mm
- <5 L / 5 kg packages = “appropriate size”

Packages and IBC’s

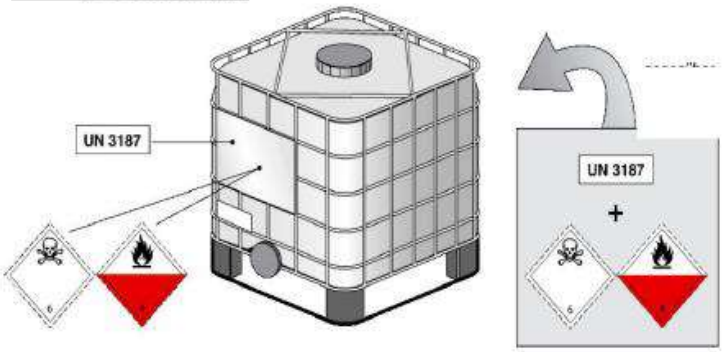
They shall be marked with proper shipping name (PSN) and relevant number, and with marine pollutant sign if applicable.

IBC's with > 450 capacity and large packages shall be marked on both sides. Empty, uncleaned packaging shall be marked as if full. Salvage packaging shall be additionally marked “SALVAGE”.

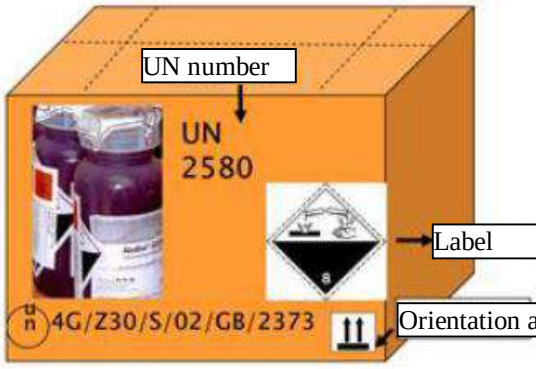
Salvage Packaging and Salvage Pressure Vessels

These shall be marked with the wording “SALVAGE”. Letters of the marking “SALVAGE” shall be at least 12 mm long.

IBC Labelling

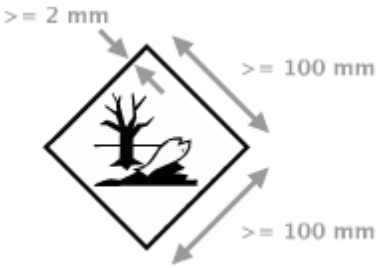


Labels and markings on IBC’s



Labels and markings on packaging

Marine Pollutant Sign Characteristics



Marine Pollutant Sign

▪ It shall be attached or stapled just near the markings,
▪ It shall be in a colour in contrast with the packaging or shall be black and white if applied as a sticker,
▪ Excluding packages that allow small stickers only due to their sizes, its side length hall be at least 100 mm.

4.3 Dangerous Goods Marking, Labels, Placards.

The IMDG Code recommends a system based on labels and placards designed especially so that all who work close to this type of cargo will be able to recognize, preferably at first sight, the nature of the risks entailed by these substances, whatever their packaging might be.

4.3.1 Labels

The IMDG Code states that all packaging, packages and drums carrying dangerous goods must be labeled. The labels are in the shape of a rhombus in white, orange, blue, green or red, or a combination of these colors. Symbols illustrating the danger of the class are also required. In general, each label is divided into two parts, the bottom half and the top half. The top half is for the symbol of the class of the good(s), and the lower half is for the text, class or division number. The minimum dimensions of labels are 10 cm x 10 cm. Labels must be firmly adhered to and placed on the package so that it can easily be seen. The quality of the labels must be such so they do not deteriorate outdoors and remain unaltered during the complete transport period and at least three months in the sea.

Due to the fact that dangerous goods can pose more than one risk, it is also necessary to use “secondary risk labels”. These labels are the same as the ones showing the primary risk, regarding their color, shape and symbols. Even though the IMDG Code says nothing to this effect, in some countries the class number is only indicated in the primary risk label, and that the secondary risk label does not include the class number. This is an effective way to distinguish between both.

4.3.2 Placards

The IMDG Code determines that all “cargo transport units” containing dangerous goods must be placarded. In this context, cargo transport units are containers, containers for liquids, tank vehicles, vehicles transporting goods by land, railway wagons with water tanks, goods tanks destined for intermodal transport. Placards have the same shape, colors and symbols as the labels, but their dimension is 25 x 25 cm. Containers carrying more than 4000 kilograms of dangerous goods, and all tanks for liquids and gases must have the “United Nations number”. The UN number has four digits and is the number assigned by the United Nations to all goods identified and classified as dangerous.

Containers carrying dangerous goods must display at least one placard on each side and one on each end of the unit (this is to say, on its four sides)

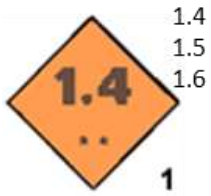
Rail wagons must be placarded on at least both sides

Freight containers, semi-trailers and portable tanks must be placarded on all four sides

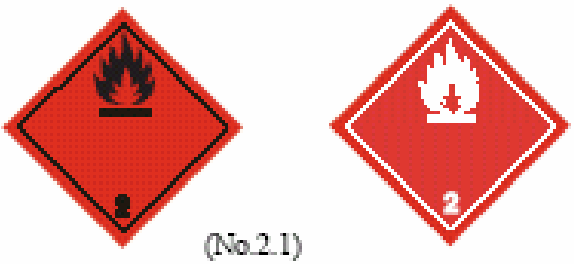
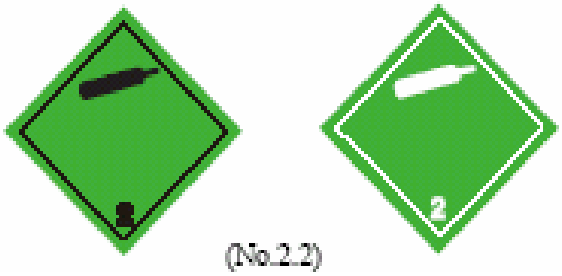
Road vehicles must display appropriate placards on both sides as well as the rear

Shapes and Colors of Labels and Placards

Class 1 – Explosives

	**Division 1.1 / 1.2 / 1.3** **Symbol –** explosion in black color **Background –** orange color **Text –** Explosive (optional) *** *** Location of division and/or Compatibility Group * Location of Compatibility Group or text **Number 1 –** in the bottom corner
	**Division 1.4 / 1.5 / 1.6** **Background –** orange color **Subclass numbers –** in black color (approximately 30 mm x 5 mm in labels of 100 mm x 100 mm) ***** Location of Compatibility Group **Number 1 –** in the bottom corner

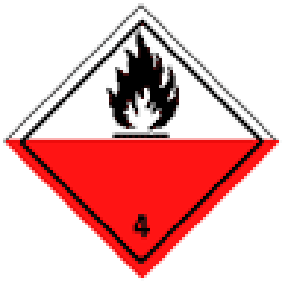
Class 2 – Gases

 (No.2.1)	**Division 2.1 Flammable Gases** **Symbol –** Flame in black or white **Background –** in red color **Text –** Flammable Gas (optional) **Number 1 –** in the bottom corner
 (No.2.2)	**Division 2.2 Non-flammable gases** **Symbol –** Gas cylinder in black or white color **Background –** in green color **Text –** Nonflammable compressed gas (optional) **Number 2 –** in the bottom corner
	**Division 2.3 Toxic Gases** **Symbol –** skull and crossbones in black color indicating hazard **Background –** in white color **Text –** Toxic (optional) **Number 2 –** in the bottom corner

Class 3 – Flammable Liquids

 	Symbol – flame in black and white color Background – red color Text – Flammable Liquid (optional) Number 3 – in the bottom corner

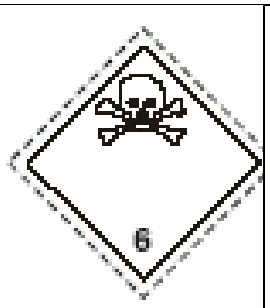
Class 4 – Flammable Solids; Substances liable to spontaneous combustion; substances which, in contact with water emit flammable gases

	Division 4.1 Flammable Solids Symbol – flame in black color Background – white with seven red vertical stripes Text – Flammable Solid Number 4 – In the bottom corner
	Division 4.2 Substances liable to spontaneous combustion Symbol – flame in black color or white color Background – blue color Text – Spontaneous combustion substances (optional) Number 4 – in the bottom corner
 	Division 4.3 Substances which, in contact with water, emit flammable gases Symbol – flame in black or white color Background – blue color Text – Substances liable to spontaneous combustion; Substances which, in contact with water, emit flammable gases (optional) Number 4 – in the bottom

Class 5 – Oxidizing Substances or Organic Peroxides

	**Division 5.1 Oxidant Substances** **Symbol –** flame with circle in black color **Background –** yellow color **Text –** Oxidizing Substance (optional) **Number 5.1 –** in the bottom corner
	**Division 5.2 Organic Peroxides** **Symbol –** flame in white color **Top Half –** red **Bottom Half –** yellow **Text –** Organic Peroxide (optional) **Number 5.2 –** in the bottom corner

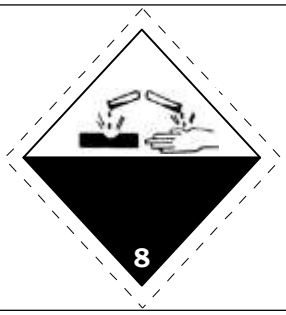
Class 6 – Toxic Substances or Infectious Substances

	**Division 6.1 Toxic Substances** **Symbol –** black skull and crossbones **Background –** white color **Text –** Toxic (optional) **Number 6 –** in the bottom corner
	**Division 6.2 Infectious Substances** **Symbol –** three crescents superimposed on a circle and inscriptions in black **Background –** white color **Text –** Infectious substance, notify Public Health Authority (optional) **Number 6 –** In the bottom corner

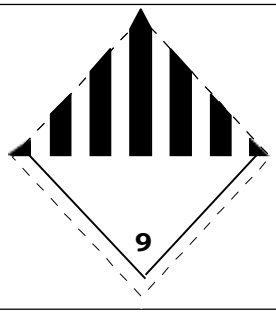
Class 7 – Radioactive Materials

	**Category I – White** **Symbol –** trefoil in black color **Background –** white color **Text (mandatory) in black –** in the lower half of the label **"Radioactive I"**, **"Contents…"**, **"Activity…"** and **"Transport Index"** box **Number 7 –** in the bottom corner
	**Category II – Yellow** **Symbol –** trefoil in black color **Background –** the upper half in yellow color with white borders, the lower half in white **Text in black –** in the lower half of the label **"Radioactive II"**, **"Contents…"**, **"Activity…"** and **"Transport Index"** box **Number 7 –** in the bottom corner
	**Category III – Yellow** **Symbol –** trefoil in black color **Background –** the upper half in yellow color with white borders, the lower half in white **Text in black –** in the lower half of the label **"Radioactive III"**, **"Contents…"**, **"Activity…"** and **"Transport Index"** box **Number 7 –** in the bottom corner

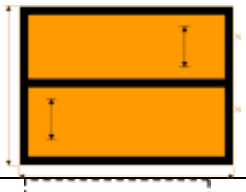
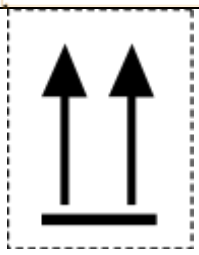
Class 8 – Corrosive Substances

	**Symbol –** Liquids falling from two test tubes onto a hand and a black piece of metal **Background –** Upper half in white color and lower half in black with white borders **Text –** Corrosive (optional) **Number 8 –** In the bottom corner

Class 9 – Miscellaneous Dangerous Substances and Articles Potentially Damaging to the Environment

	**Symbol –** seven vertical bars in black in the upper half **Background –** in white color **Number 9 –** In the bottom corner

Other labels

	Indicating elevated temperature (in liquid state at a temperature equal to or exceeding 100°C, in a solid state at a temperature equal to or exceeding 240°C)
	Orange-colored plates, with hazard-identification number and UN Number
	Orientation arrows, black or red color

Placards for Marine Pollutants

	Packages and cargo transport units containing dangerous substances which are classified by the IMDG Code as “marine pollutants”, must have the markings shown here, which must be durable. They must be placed close to the risk labels or risk placards of the goods. The dimensions of the marine pollutant markings must be a minimum of 10 cm per side for packages and 25 cm per side for cargo transport units.

4.4 Packaging and Approval Marking of Dangerous Goods

4.4.1 Packing Groups, Classifying Criteria

The risks presented by dangerous goods in maritime transport are related to their packaging, therefore it must be safe, well designed and manufactured and in good condition. It is very unlikely you will suffer injuries due to this cargo, but if the cargo is damaged, it is possible for dangerous substances or vapors to be released.

The packages/containers must comply with the following requirements:

Must not be affected by the cargo it contains
Must be strong enough to endure the rough treatment and risks involved in maritime transport
Must be able to endure rain, wind and sea water
Must be practical and adequate for the cargo they carry
Must be in good condition
Must be correctly marked, label and signposted

For packing purposes, dangerous goods belonging to all classes, except for class 1, 2, 6.2 and 7 have been divided into three “packing groups” depending on the degree of danger they represent:

Packing Group I – High level of danger
Packing Group II – Medium level of danger
Packing Group III – Low level of danger

4.4.2 UN Packaging and Approval Marking

Most packages also need to bear the UN packaging approval mark confirming that the packaging has been tested and approved in accordance with relevant United Nations performance standards. Example below:

1A1/Y1.4/150/98/NL/VL824

4.5 Segregation and Separation Tables of Dangerous Goods as per Their Classes on Ships and at Ports

One of the most important aspects of managing the transport of dangerous goods is the stowage, segregation and separation of these goods. Dangerous goods must not be carried with goods which are liable to interact and cause danger to P.E.A.R.

Incompatible dangerous goods must be adequately separated from each other during transport and storage. Improper stowage or segregation of dangerous goods may result in the release of toxic fumes, fire, spill and degradation of the product's quality. For this reason the IMDG Code has provided provisions in Volume 1 Part 7 titled "Provisions Concerning Transport Operations", which focuses on stowage and segregation.

4.5.1 Principles of segregation and stowage

The following issues may contribute towards major chemical accidents during stowage and segregation:

- Failure to understand the nature of the substance handled
- Failure of quality assurance – container inspection certificates
- Insufficient recording of chemical register inventories at different terminal locations
- Insufficient labeling and recording of chemicals
- Poor housekeeping – firefighting equipment not available in work area

The IMDG Code requires dangerous goods to be stored and segregated according to the hazard, class and compatibility. The code also provides detailed information on these important factors in terms of where dangerous goods should be stowed and how they should be separated or segregated from other cargoes.

Although the IMDG Code provides detailed information on ship stowage, the requirements can also be applied to storage ashore and even to container packing. The requirement offers a framework for port authorities when preparing their regulations for the safe transport of handling and storage of dangerous goods in ports. Dangerous goods which have to be segregated from each other shall not be transported in the same cargo transport unit.

4.5.2 IMDG Code segregation, stowage and Dangerous Goods list

General segregation is applied to all cargo spaces on deck or under deck of all types of ships, and cargoes in transport units, and incompatible goods shall be segregated from one another. For the purpose of segregation, the IMDG Code has grouped together similar chemical properties in the dangerous goods list. In the dangerous goods list, the group substances are referred as follows:

1. Acids
2. Ammonium Compound
3. Bromates
4. Chlorates
5. Chlorites
6. Cyanides
7. Heavy metals and their salts
8. Hypochlorite
9. Lead and its compounds
10. Liquid halogenated hydrocarbons
11. Mercury and mercury compounds
12. Nitrites and their mixtures
13. Perchlorates
14. Permanganates
15. Powdered metals
16. Peroxides
17. Azides
18. Alkalis

If substances are shipped under Not Otherwise Specified (N.O.S.) entries, the shipper will decide the appropriate segregation group.
In the IMDG code Volume 2 under column 16 of the numerical list of dangerous goods, the stowage conditions for each one of the dangerous goods listed can be found. Also, in this column, there is information on stowage related to sleeping, food, solutions and mixtures areas, etc. For example, the product “ALLYL BROMIDE UN No 1099”, column 16 indicates “Category B, far from living quarters.”

In the following paragraph the five stowage categories stipulated by the IMDG Code are described.

Stowage Categories

Category	A	B	C	D	E
Cargo ship carrying no more than 25 passengers	On deck or below deck	On deck or below deck	On deck only	On deck only	On deck or below deck
Passenger ships carrying more than 25 passengers	On deck or below deck	On deck only	On deck only	Prohibited	Prohibited

There are 5 categories for ship stowage as below:

Stowage catergory 01	Cargo ship (maximum 12 passengers) Passenger ships	In closed cargo transport unit on deck or below deck
		In closed cargo transport unit on deck or below deck
Stowage category 02	Cargo ship (maximum 12 passengers) Passenger ships	In closed cargo transport unit on deck or below deck
		In closed cargo transport unit on deck or in closed transport unit under deck as per 7.1.4.4.5
Stowage category 03	Cargo ship (maximum 12 passengers) Passenger ships	In closed cargo transport unit on deck or below deck
		Prohibited unless conforms to 7.1.4.4.5.
Stowage category 04	Cargo ship (maximum 12 passengers) Passenger ships	In closed cargo transport unit on deck or in closed transport unit under deck Prohibited unless conforms to 7.1.4.4.5.
Stowage category 05	Cargo ship (maximum 12 passengers) Passenger ships	Only in closed cargo transport unit on deck
		Prohibited unless conforms to 7.1.4.4.5.

In brief, the IMDG Code establishes a system whereby dangerous goods can be stowed in a safe way, considering their compatibility with other types of cargo and therefore preventing further damage in case of accidents.

Mastering the techniques on how to stow dangerous goods correctly on board ships is fundamentally the responsibility of the Ship Planner. Port Terminals are not concerned with planning of the stowage of dangerous goods on board; they are only responsible

of stowing the cargo in the positions indicated in the ships plan, which is provided by the Shipping Line through the respective agencies.

4.6 Separation distances and separation terms for warehouse storage dangerous goods

4.6.1 Separate Storage

The IMDG Code defines four segregation terms:

1. "Away from" (the minimum separation between two incompatible goods)
2. "Separated from"
3. "Separated by a complete compartment or hold from"
4. "Separated longitudinally by an intervening complete compartment or hold from" (this is the maximum separation between two incompatible goods)

The general provisions regarding segregation between different classes of dangerous goods can be found in the code in the following Segregation Table:

CLASS		**1.1 1.2 1.5**	**1.3 1.6**	**1.4**	**2.1**	**2.2**	**2.3**	**3**	**4.1**	**4.2**	**4.3**	**5.1**	**5.2**	**6.1**	**6.2**	**7**	**8**	**9**
Explosives	**1.1, 1.2, 1.5**	*	*	*	4	2	2	4	4	4	4	4	4	2	4	2	4	X
Explosives	**1.3, 1.6**	*	*	*	4	2	2	4	3	3	4	4	4	2	4	2	2	X
Explosives	**1.4**	*	*	*	2	1	1	2	2	2	2	2	2	X	4	2	2	X
Flammable gases	**2.1**	4	4	2	X	X	X	2	1	2	X	2	2	X	4	2	1	X
Non-toxic, non-flammable gases	**2.2**	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
Toxic gases	**2.3**	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
Flammable liquids	**3**	4	4	2	2	1	2	X	X	2	1	2	2	X	3	2	X	X
Flammable solids (including self-reactive substances and solid desensitized explosives)	**4.1**	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
Substances liable to spontaneous combustion	**4.2**	4	3	2	2	1	2	2	1	X	1	2	2	1	3	2	1	X
Substances which. in contact with water, emit flammable gases	**4.3**	4	4	2	X	X	X	1	X	1	X	2	2	X	2	2	1	X
Oxidizing substances (agents)	**5.1**	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X

Organic peroxides	**5.2**	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X
Toxic substances	**6.1**	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
Infectious substances	**6.2**	4	4	4	4	2	2	3	3	3	2	3	3	1	X	3	3	X
Radioactive material	**7**	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
Corrosive substances	**8**	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
Miscellaneous dangerous substances	**9**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(This table is applied to unitized dangerous goods; this is to say, in pallets, drums, boxes and crates and other similar packaging. It is not applied to containers carrying dangerous goods)

Numbers and symbols relate to the following terms as defined in this chapter:

1	Away from	3 meters
2	Separated from	6 meters
3	Separated by a complete compartment or hold from	12 meters
4	Separated longitudinally by an intervening complete compartment or hold from	24 meters
X	The segregation, if any, is shown in the Dangerous	-

Explosives require special segregation in accordance with the compatibility group. Explosives which have the same letter can be stowed together, whatever their class subdivision may be. Since the properties of the substances, materials or articles of a same Class can be very different to each other, in each and every case it will be necessary to consult the Dangerous Goods list previously, to determine the applicable specific segregation provisions.

4.6.2 Segregation within the Cargo Transport Units

Dangerous goods which need to be segregated from each other must not be stowed in the same cargo transport unit (container). Nevertheless, goods which require to be segregated “away from” may be transported in the same cargo transport unit upon authorization by the corresponding authority. In this case an equivalent safety degree must be kept.

4.6.3 Segregation in Port Areas

The IMO Maritime Safety Committee (MSC), by way of Circular 1/1216 of 26 February 2008 determined several revised recommendations regarding the risk free transport of dangerous goods and related activities within the port area.

Circular MSC 1216 of 2008 establishes that containers containing dangerous goods must not be stowed above each other. **Containers carrying dangerous goods of the same class are exempt from this rule.** This exemption is not to be applied to Class 8 cargo (corrosives), if they are different from each other. This is to say, if the Class 8

corrosive cargo is exactly the same substance, they can be stored above each other. Containers must be stowed in such a way that there is always easy access to the doors and to the sides in order to carry out cooling or control work

Separation between the different classes must be taken into consideration when dangerous goods are stored in special areas or depositories. The chart indicated by IMDG Code will help in the stowage on board ships. IMO's Port Recommendations establishes the following segregation chart for port storage.

Classes		2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	8	9
Flammable gases	2.1	0	0	0	S	A	S	0	S	S	0	A	0
Non-toxic, non-flammable gases	2.2	0	0	0	A	0	A	0	0	A	0	0	0
Toxic gases	2.3	0	0	0	S	0	S	0	0	S	0	0	0
Flammable liquids	3	S	A	S	0	0	S	A	S	S	0	0	0
Flammable solids, self reactive substances and desensitized explosives	4.1	A	0	0	0	0	A	0	A	S	0	A	0
Spontaneously combustible substances	4.2	S	A	S	S	A	0	A	S	S	A	A	0
Substances which, in contact with water, emit flammable gases	4.3	0	0	0	A	0	A	0	S	S	0	A	0
Oxidizing substances	5.1	S	0	0	S	A	S	S	0	S	A	S	0
Organic peroxides	5.2	S	A	S	S	S	S	S	S	0	A	S	0
Toxic substances (liquids and solids)	6.1	0	0	0	0	0	A	0	A	A	0	0	0
Corrosives (liquids and solids)	8	A	0	0	0	A	A	A	S	S	0	0	0
Miscellaneous dangerous substances and articles	9	0	0	0	0	0	0	0	0	0	0	0	0

The chart identifies only three segregation categories for storage in ports.

"0" means pairs of dangerous goods which do not need to be segregated from each other (unless indicated by the individual entry in the numerical list of dangerous goods, which must always be checked)
"A" indicates segregation requirement "away from …" the other class in that pair (3 meters)

"S" requires the segregation category "separated from …" between the classes of that pair (6 meters)
Cargoes of classes 1 (except division 1.4 S), 6.2 and 7 should normally be allowed into the port area for direct shipment or delivery only. These classes have not been included in the table. However, if through unforeseen circumstances, these cargoes have to be temporarily kept, it should be in designated areas. Segregation requirements of the individual class as stipulated in the IMDG Code should be considered by the port authority when establishing specific requirements.

Cleaning of container and portable tanks which contained dangerous goods must be done in a special area, away from to those where dangerous goods are stored. Such areas shall be adequately designed and equipped to avoid contaminated washing water ending up in the soil, waterways or sewerage system.

After deconsolidating (un-stuffing/ stripping) a container with dangerous goods, all placards and goods risk identification shall be removed from the container.

4.7 Dangerous Goods Documentation

There are many documents in the shipping industry and they are primarily used to convey the information between/among these parties:

- Consignors (shippers)
- Consignees
- Shipping lines
- Government agencies
- Banking services
- Insurance companies

These are legal documents and can be produced in courts to resolve potential disputes.

In the IMDG Code Volume 1 under the chapter on Documentation (Part 5 - Chapter 5.4) the process of dangerous goods transportation is clearly described. The code also includes the use of Electronic Data Processing (EDP) and Electronic Data Interchange transmission techniques.

The documentation for dangerous goods is to convey the fundamental information relative to hazards of the goods. The shipper shall provide all information and documentation as specified in the code.

4.7.1 Documents required for dispatching Dangerous Goods

One of the main requirements of a dangerous goods transportation document is to contain the basic information regarding the risks entailed by these dangerous goods. This dispatch document is normally the same for all transportation modes, and the information stipulated must be clear and legible. Nevertheless IMO recommends the use of the Multimodal Form, which will be mentioned later.

4.7.1.1 Dangerous Goods Transportation Document

Information which must be included in the Dangerous Goods Transportation Document:

- The shipping name or correct technical name (no commercial names will be accepted)
- The Class and Division when applicable. The Class or Division can be included in the risk class number. The compatibility group will also be indicated in goods from class 1; and in the case of gases involving secondary risks, information will be extended to indicate such risks
- The United Nations number preceded by the letters UN
- The packing group when assigned
- The number and types of bundles, as well as the total quantity of dangerous goods per volume or mass

- The flashpoint for materials having a flashpoint the same or lower than 61°C
- The subsidiary risks not indicated in the shipping name
- When applicable, the goods shall be identified as "Marine Pollutant"
- Empty means of containment, which contain the residue of dangerous goods shall be described as such, for example, by placing the words "Empty", "Uncleaned" or "Residue Last Contained" before or after the proper shipping name
- For dangerous goods in limited quantities, the phrase "Dangerous Goods in Limited Quantity" shall be included
- For class 5.2 or self reactive substances of class 4.1, the regulation and emergency temperatures
- A statement signed in the name of the consignor, saying that the goods are correctly described, classified, packed, marked and labeled and that its conditions are appropriate for transport
- Additional information may also be required in certain cases for explosives, radioactive materials, dangerous goods transported in a molten state, etc.

Dangerous cargo secured incorrectly inside containers, which then becomes loose and damaged during transport, has been the cause of the majority of accidents concerning dangerous goods. This is why it is very important to check that this has been carried out correctly.

4.7.2 Dangerous Goods Declaration Ordinance

The way in which information must be reported when dangerous goods are transported varies from one country to another. A basic requirement is the obligation to present a Declaration for Dangerous Goods.

If dangerous substances and other non dangerous substances are listed in the same document, the dangerous substances should be listed first or their dangerous nature should be emphasized. Regardless of the format of this declaration, always the same information must be provided. The following order of information must be respected, without inserting any other data in between: The shipping name, the Class, the UN number, and when applicable, the packing group.
The following are examples of dangerous goods descriptions:

- ALLYL ALCOHOL 6.1, UN 1098 I
- FORMIC ACID, 8, UN 1779, II
- ACROLEIN STABILIZED, 6.1, UN 1902, G e/e I (3), MARINE POLLUTANT

4.7.3 Container/Vehicle Packing Certificate

When dangerous goods are packed or loaded into any container or vehicle, those responsible for packing or loading shall provide a "container/vehicle packing certificate". Basically this document certifies the following:

- The cargo transport unit was clean, dry and apparently fit to receive the goods
- Incompatible substances have not been placed into the cargo transport unit (unless this had been specifically authorized by the competent national authority)
- All packages have been externally inspected for damage, and only sound

packages have been loaded

- All packages have been properly loaded and secured within the cargo transport unit
- The cargo transport unit and the packages are properly marked, labeled and placarded
- A dangerous goods transport document has been received for each dangerous goods consignment loaded in the container/vehicle

The certificate must be signed by the person responsible of stowing the goods in the cargo transport unit. It is possible to incorporate this certificate and the Dangerous Goods Declaration into a single document, the “Dangerous Goods Multimodal Transport”.

If the shore facility operator carries out container/vehicle loading in areas where cargo transport units are unloaded and/or in closed warehouses, a Container /Vehicle Loading Certificate must be issued. Example of such certificate is annexed.

Konteyner / Araç Paketleme Sertifikası

Tehlikeli malların herhangi bir konteynere veya araca yüklenmesi veya burada paketlenmesi hâlinde, konteyneri veya aracı paketlemekle yükümlü taraflar, konteyner/araç tanımlama numarasını /numaralarını) belirten ve işlemin şu koşullar gözetilerek yürütüldüğünü onaylayan bir "konteyner/araç paketleme sertifikası" sunacaktır:

☐ Konteyner/araç temiz, kuru ve malları barındırmaya uygun gözükmektedir.

☐ Ayrı yerleştirilme zorunlulukları uyarınca ayrılması gereken paketler, konteynerde/araçta birlikte paketlenmemiştir.

☐ Tüm paketler hasara karşı dış muayeneden geçmiş olup, yalnızca sağlam ambalajlar yüklenmiştir.

☐ Yetkili makamın aksi için onay vermediği durumlarda variller dik pozisyonda yerleştirilmiş olup tüm mallar düzgün şekilde yüklenmiştir ve gerekli durumlarda amaçlanan yolculuğun taşıma yöntemine uyacak sabitleme malzemesiyle yeterince desteklenmiştir.

☐ Dökme yük olarak yüklenen maddeler konteyner/araç içerisinde eşit bir şekilde dağılmıştır.

☐ Tehlike bölümü 1.4 hariç olmak üzere Sınıf 1'de yer alan maddeleri içeren sevkiyatlar için, konteyner/araç yapısal olarak hizmete uygun durumdadır.

☐ Konteyner/araç ve paketler düzgün şekilde işaretlenmiş, etiketlenmiş ve gerektiğinde plakartlandırılmıştır.

☐ Boğulma riski bulunduran maddeler soğutma ve havalandırma amaçlı kullanıldığında (örneğin kuru buz (UN 1845) ya da nitrojen, soğutulmuş sıvı (UN 1977) ya da argon, soğutulmuş sıvı (UN 1951)) olarak kullanıldığında, konteyner / araç harici olarak uyarınca işaretlenir.

☐ Konteynere / araca yüklenen her bir tehlikeli mal sevkiyatı için 5.4.1'de belirtilen tehlikeli mal taşıma evrakı alınmıştır.

Not: Konteyner/araç paketleme sertifikası, portatif tanklar için gerekli değildir.

Konteyner/araç paketleme sertifikası, taşımacıya EDP veya EDI iletim teknikleriyle sunulmuşsa, imzalar elektronik imza olabilir veya imza atmaya yetkili kişinin adı (adları) (büyük harflerle) kullanılabilir.

Konteyner Tanım No.	
Firma	
İmzalayan Adı-Soyadı	
Yer-Tarih	

4.7.4 Multimodal Model of the Transport Document

There is no mandatory model for the dangerous goods declaration. The IMDG Code recommends the use of the following document for the multimodal transport of dangerous goods, where the dangerous goods declaration is combined with the vehicle/container packing certificate (Regulation 4, Chapter VII, Solas 74) or Declaration of Dangerous Goods.

Please find an example of a completed Multimodal Dangerous Goods Form in the next page.

MULTIMODAL DANGEROUS GOOD FORM

1. Shipper/Consignor/ Sender Very Toxic Chemical Company 55 Prosperous Ave, Singapore 123456 Tel : 777-4444	2. Transport document number		
	3. Page 1 of _1_ pages	4. Shipper's reference	
		5 Freight forwarder's reference	
6. Consignee Safe Chemical Trading Co.,Ltd 45th Street, Northumberland NE24 4RG United Kingdom Tel : 444-8446	7.Carrier (to be completed by the carrier) **SHIPPER'S DECLARATION (signiture in block section 22 below)** I hearby declare that the contents of this consignment are fully and accurately described below by the Proper Shipping Name, and are classified, packaged, marked and labelled/placarded marked and labelled/placarded and are in all respects in proper condition for transport according to transport according to the applicable International and national governmental regulations		
8. This shipment is within the limitations prescribed for: (delete non-applicable) ~~PASSENGER AND CARGO AIRCRAFT~~ / ~~CARGO AIRCRAFT ONLY~~	9. Additional handling information		
10 Vessel/flight No. and date M.V. Green Voy.123N	11. Port/place or loading Singapore		
12. Port/Place of discharge Liverpool/ United Kingdom	13. Destination Manchester/UK		

14. Shipping marks	*Number and kind of package; description of goods	Gross mass(kg)	Net mass(kg)	Cube(m³)
MOOV Head Lice Solution 200 ml	UN 1170, ETHANOL SOLUTION, Class 3, PG III, (24°C c.c.) LTD QTY F-E, S-D. Total: 3 Ctns (24/Ctn) In plastic Bottles : QTY : 72	20.25	14.04	0.057
Resolve Solution 25 ml	UN 1170, ETHANOL SOLUTION, Class 3, PG II, (20°C c.c.) LTD QTY F-E, S-D. Total: 1 Ctn (14/Ctn) In plastic Bottles : QTY : 14	0.544	0.31	0.001

15. Container identification No/ vehicle registration No.	16. Seal number(s)	17. Container/ vehicle size & type	18. Tare mass (kg)	19. Total gross mass (including tare) (kg)
SPDU1234567	5445974	40' GP	19,678	25,000

20. CONTAINER/ VEHICLE PACKAGING CERTIFICATE I hearby declare that the goods described above have been packaged/ loaded into the container/ vehicle identified above in accordance with the applicable provisions MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING	21. RECEIVING ORGANIZATION RECEIPT Received the above number of packages/ container/ trailers in apparent good order and condition, unless stated hereon: RECEIVING ORGANIZATION REMARDS:	
Name of company Very Toxic Chemical Company, 55 Prosperous Ave, Singapore 123456 Tel : 777-4444	Hauler's name Vechicle reg. No.	22. Name of company (of SHIPPER PREPARING THIS NOTE Very Toxic Chemical Company
Name/status of declarant Mr. Pack Packman	Signature and date	Name/status of declarant Mr. Abod Elfghi /Export Asst.
Place and date Singapore, 15 June 2011		Place and date Singapore, 15 June 2011
Signature of declarant	Driver's Signature	Signature of declarant

DANGERIOUS GOODS

* You must specify: Proper Shipping Name, related class, UN No, packing group, (where assigned) marine pollutant and observe the mandatory requirements under applicable national and international governmental regulation. For the purpose of the IMDG Code see, 5.4.1.4

* For the purpose of the IMDG Code: See 5.4.2

5 HANDBOOK OF DANGEROUS GOODS

Dangerous cargo shipment / discharge with handling and port facilities in the temporary storage activities in order to contribute to the fulfillment of these activities in a safe manner;

- Dangerous Goods classes,
- Packages of dangerous substances,
- Packaging,
- Labels,
- Signs and packaging group,
- Ship and port seperation table according to the class of dangerous goods,
- Warehouse / port separation distance of dangerous goods storage,
- Seperation terms,
- Dangerous cargo documentation,
- Loads containing dangerous emergency action flowchart issues,

Prepared as Dangerous Goods Handbook in the size of a pocketbook and given as annexed hereto

6 PROCEDURES FOR THE OPERATION

6.1 Prosedure of ships carrying dangerous goods safely Berthing, loading / unloading, shelter or anchorage during the day and at night

6.1.1 Direct when and where a ship, having any dangerous goods on board, should anchor, moor, berth or remain within the port area, taking into consideration relevant matters such as the quantity and nature of the dangerous goods involved, the environment, the population, the weather conditions;

6.1.2 Direct, in an emergency, a ship having any dangerous goods on board to be moved within the port area, or to be removed from the port area having due regard to the safety of the ship and its crew; and

6.1.3 Attach such requirements to any such directions as are appropriate to local circumstances and the quantity and nature of the dangerous goods involved.

6.1.4 The port operator should ensure that:

6.1.4.1 adequate and safe mooring facilities are provided; and

6.1.4.2 adequate safe access is provided between the ship and the shore.

6.2 Procedure of according to the seasonal conditions additional measures that Loading/Unloading, limbo operation of dangerous goods should be taken by port facilties

6.2.2 Solid bulk dangerous goods that, on contact with water, may evolve flammable or toxic vapours or become liable to spontaneous combustion, should be kept as dry as reasonably practicable. Such cargoes should be handled only during dry weather conditions.

6.2.3 Because of the nature of explosives the handling of dangerous goods in adverse weather conditions need careful attention, particularly in respect of wet conditions.

6.3 Procedures on keeping any inflammable, combustible and explosive materials away from operations which cause or are likely to cause sparking and abstaining from operating any tools, apparatus or device which cause or are likely to cause sparking in areas where dangerous goods are handled, stowed and stored

6.3.1 Before starting any hot work, on board a ship or on a port, the responsible person of the company to carry out the hot work shall be in possession of a written authorization to carry out such hot work issued by the port authority. Such authorization should include details of the specific location of the hot work as well as the safety precautions to be followed.

6.3.2 In addition to the safety precautions required be the port authority, before starting any hot work, the responsible person of the company to carry out the hot work together with the responsible person(s) of the ship and/or interface, should add any additional safety precautions required by the ship and/or interface.

6.3.3 These should include:

6.3.3.1 the examination, and frequency of re-examination of local areas and adjacent areas, including tests, carried out by accredited testing establishments, to ensure the areas are free, and continue to be free, of flammable and/or explosive atmospheres and, where appropriate, are not deficient in oxygen;

6.3.3.2 the removal of dangerous goods and other flammable substances and objects away from the working and adjacent areas. This includes scale, sludge, sediment and other possible flammable material;

6.3.3.3 efficient protection of flammable structural members, e.g. beams, wooden walls, floors, doors, wall and ceiling coverings against accidental ignition; and

6.3.3.4 the sealing of open pipes, pipe lead-throughs, valves, joints, gaps and open parts to prevent the transfer of flames, sparks and hot particles from the working areas to adjacent or other areas.

6.3.4 A duplicate of the hot work authorization and safety precautions should be posted adjacent to the work area as well as at each entrance to the work area. The authorization and safety precautions should be readily visible to, and clearly understood by, all persons engaged in the hot work.

6.3.5 While carrying out hot work it is essential that:

6.3.5.1 checks are carried out to ensure that conditions have not changed; and

6.3.5.2 at least one suitable fire extinguisher, or other suitable fire-extinguishing equipment is readily available for immediate use at the location of the hot work.

6.3.6 During hot work, on completion and for a sufficient time after completion of such work, an effective fire-watch should be maintained in the area of the hot work as well as adjacent areas where a hazard resulting from the transfer of heat may be created.

6.3.7 Additional valuable guidance on hot work procedures may be found.In particular, the International Safety Guide for Oil Tankers and Terminals (ISGOTT) should be consulted.

6.3.8 In addition, Port Facility Occupational Safety Procedures shall be followed.

6.4 Procedures on fumigation, gas measurement and degasification

6.4.1. Fumigation operations are not carried out by the shore facility operator for the cargo in holds or cargo transport units (CTU). Relevant people of the ship perform the fumigation in the port area under the responsibility of the sender of the cargo. Relevant persons of the ship makes the necessary notifications to the port authority and to the shore facility, and start the operation in the area deemed appropriate in the facility after the necessary permissions are granted.

6.4.2. Relevant persons of the bulk cargo ships whose cargo has been fumigated shall submit a notification to the relevant port authority stating the name of the fumigant, the amount used and the method of application 24 (twenty-four) hours before arrival to the shore facility or in case the arrival time is less than 24 (twenty-four) hours, immediately after they leave the shore facility of their departure.

6.4.3. Relevant persons of the bulk cargo ships whose cargo has been fumigated shall present to the port authority the certificate issued by the relevant authority/organization stating that their ship has been cleansed of fumigation. In cases where this certificate is not presented to the port authority, relevant ship shall not be allowed to berth to the shore facility and to start handling operations.

6.4.4. Fumigation operations for bulk cargo ships in shore facilities shall be carried out by persons with "Fumigation License" granted by the Ministry of Agriculture and Forestry. Relevant persons of the goods shall submit a notification including the information below to the relevant port authority and to the shore facility where fumigation will take place at least 12 (twelve) hours prior to fumigation. If such notification is not submitted, shore facility officers shall not allow any fumigation to take place in the ships in the shore facility.

a) Name of ship and IMO number,

b) Commercial name and pier number (if any) of the shore facility where fumigation will take place,

c) Name of the fumigant and the amount foreseen for use,

ç) Fumigant application method,

d) Planned start date and time of fumigation,

e) Copy of fumigation license

6.4.5. Shore facility operator maintains the records of fumigation and degasification operations carried out in the shore facility and present them to the relevant port authority when requested.

6.4.6. The area assigned for fumigation operation in the shore facility is designated by the shore facility operator as the area near the IMDG CODE area, operation is the mentioned area is allowed provided that necessary permissions are granted.

6.4.7. The party applying the fumigation shall accept in advance to proceed according to:

a) Circulars no. MSC-MEPC.2/Circ.1, MSC.1/Circ.1264, MSC.1/Circ.1358 and DSC/Circ.11 related to the prevention of possible harms by fumigants used in fumigation operations to marine environment and human health, and related to their disposal, and to the relevant operational steps,

b) IMDG Code Application Instructions no. 2013/180, dated 23.09.2013; Fumigation Operation Application Instructions no. 2013/04, dated 27/03/2013; and the Directive on Notifications and Special Permissions for Seaborne Dangerous Goods (and its Annex) issued by the Ministry of Transportation, Maritime Affairs and

Communication concerning fumigation, gas measurement and degasification works and operations as well as related to relevant operational steps.

Such party shall perform fumigation operations according to mentioned legislation and other local legislation. Companies that are found to be acting in violation of these rules shall not be allowed to operate in the shore facility. All costs accrued shall be reimbursed by the relevant party.

6.4.8. During fumigation operation, it is the task and the responsibility of the party applying the fumigation to take precautions concerning occupational health and safety as well as environmental safety.

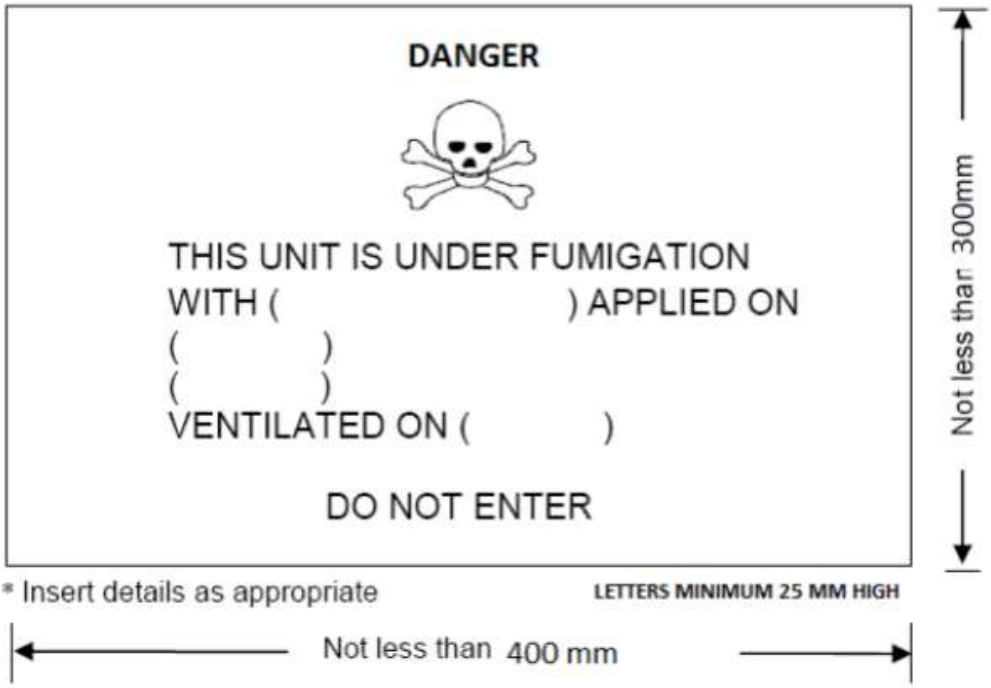
6.4.9. During fumigation operation, fumigation area will be surrounded by iron barriers to prevent entry of unauthorized persons, and the area will be marked with fumigation warning signs. During the temporary storage of cargo transport units or bulk solids in holds which have been or will be subjected to fumigation, this area will be continuously monitored by camera and a check-point should be established if need be.

6.4.10. Fumigation works and operations as well as gas measurement and degasification of fumigated cargo transport units shall be carried out by organizations authorized by the relevant authority or the administration. Relevant person of the ship shall confirm that the personnel assigned to such works and operations are also certified by the relevant authority or the administration.

6.4.11. Authorized organization making the risk assessment related to the fumigated cargo transport unit, performing gas measurements if any risk is identified, carrying out active or passive ventilation shall not be the same organization applying fumigation to the cargo transport unit.

6.4.12. It is obligatory that gas measurement and gas analysis is performed on cargo transport units containing dangerous gases or subjected to fumigation before they are transported from shore to land facilities, and that a certificate is issued stating the gas types and measurement values of the analysed gases, the measurement place, date and time.

6.4.13. Disinfection warning signs, visible from all sides, shall be attached on the fumigated cargo transport units on the ship or on the outer side of cargo holds containing fumigated goods / substances.



6.4.14. Disposal of all wastes and empty packaging arising due to fumigation operation is the responsibility of the company carrying out the operation. All wastes or empty packaging shall be disposed of outside the facility, at hazardous waste disposal plants.

6.4.15. Persons working in handling of fumigated goods or other substances shall receive necessary training appropriate to their job definition and the work they will perform. Such trainings shall include the topics below at the least:

a) Information on fumigation works and operations as well as on fumigants,

b) Identification of general characteristics of fumigated containers, other cargo transport units or cargo holds,

c) Unloading of fumigated containers, cargo transport units, and applications for safe unloading of fumigated bulk cargoes,

ç) Information on the gas measurement of fumigated containers and cargo transport units, and on the hazard limit value of gases occurring with the effect of used fumigants;

d) Information on the correct use of devices and equipment used in gas measurement and degasification,

e) Use of personal protective clothing and equipment,

f) Information on potential risks that may arise during handling of fumigated goods or substances.

6.4.16. Fumigation of warehouses, holds or cargo transport units

6.4.16.1. It is ensured that the fumigation of warehouses, holds or cargo transport units are carried out according to the requirements of the Administration. IMDG Code Annex "Recommendations on Safe Use of Pesticides in Ships" are taken into account.

6.4.16.2 Fumigation of cargo transport units are performed only in areas designated for such purpose and by authorized organizations.

Separate areas are provided or designated for ships and/or cargo transport to be fumigated.

These areas are surrounded by fences to prevent entry of unauthorized persons or appropriate communication tools are provided when a check-point is established.

6.4.16.3. Recommendations on Safe Use of Pesticides in Ships contain a warning sign to be used for ships, ship compartments, cargo containers, fuel ship under fumigation. There are IMO/ILO/UN ECE main principles for the packing of cargo transport units (CTUs).

6.4.16.4. It is ensured that nobody enters to any warehouse, hold or cargo transport unit if it was not properly ventilated, if the gas inside it was not evacuated, if the fumigation warning signs on it were not removed, if the authorized person did not declare it safe to enter, or if an unloading certificate was not issued for it.

7 Documentation, Control And Record

7.1 Procedures regarding to all necessary documents, information and certification relating to dangerous substances and their procurement and control by the relevant persons

7.1.1 The following documents related to dangerous goods are kept up to date.

IMDG Code International Maritime Dangerous Goods Code
IMSBC Code International Maritime Solid Bulk Cargoes Code
INF Code International Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships
MARPOL 73/78 International Convention for the Prevention of Pollution from Ships, 1973/78 as amended
S O L A S 74 International Convention for the Safety of Life at Sea, 1974 as amended
CSS Code of Safe Practice for Cargo Stowage and Securing (CSS Code)
IMO / ILO / UNECE Guidelines to fill the cargo transport units (CTU's)
TDC Deck Cargo Secure Timber handling code 2011
GRAIN Code

7.1.2 The Operational Division for Dangerous Goods handled by our Port shall develop all records fully and keep the same for submission upon request regarding any dangerous goods
arriving at the port,
shipped from the port,
stored at the port, and
stored at the port on a temporary basis.

The records of dangerous goods are limited to the personnel who need to know the same.

7.2 Procedures of keeping a regular and accurate current list of all dangerous goods in the coastal facility area and other relevant information.

7.3.1 Records of dangerous good handled in our port will be kept by the Operations department to include the following information.

- Number,
- PSN name (Proper Shipping Name,
- Class (with lower hazards)
- Packaging Group (Class 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutant or otherwise
- Receiver,
- Shipper,
- Container / Packaging, number,
- Seal number
- Additional Information (ignition temperature, viscosity, etc.)
- Storage location in the Port Area
- Duration of stay in the Port

7.2.2 This information is recorded on computer or in the file layout so that only authorized personnel can access and presented upon request.

7.2.3 Procedures regarding to appropriate identification of dangerous goods delivered to the facility, correct use of shipping names of dangerous goods, certification, packaging, labeling and declaration, inspection on loading and transport of dangerous goods in the certified and proper package, container or cargo unit in a safety way and reporting of inspection results.

7.2.4 Coordinately with the Operation, Planning checks the accuracy of the following information through the dangerous goods documents delivered to the Port and organized by the Shipper;

- Number,
- PSN name (Proper Shipping Name,
- Class (with lower hazards)
- Packaging Group (Class 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutant or otherwise,
- Containers / Packaging, number,
- Seal number
- Additional Information (ignition temperature, viscosity, etc.)
- Storage location in the Port Area

7.2.5 This information is delivered to the tally clerk, Field Supervisor, Warehouse officer, HSE, and authorized staff through Terminals / Documents and security of the dangerous goods is provided.

7.2.6 In case that information sent from Operation is different from the cargo, Operation will immediately be informed and shipper is instructed to verify the information on Dangerous goods / vehicle /container and correct the incorrect label brands.

7.3 Procedures regarding to appropriate identification of dangerous goods delivered to the facility, correct use of shipping names of dangerous goods, certification, packaging, labeling and declaration, inspection on loading and transport of dangerous goods in the certified and proper package, container or cargo unit in a safety way and reporting of inspection results.

7.3.1 Coordinately with the Operation, Planning checks the accuracy of the following information through the dangerous goods documents delivered to the Port and organized by the Shipper;

- Number,
- PSN name (Proper Shipping Name,
- Class (with lower hazards)
- Packaging Group (Class 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutant or otherwise,
- Containers / Packaging, number,
- Seal number
- Additional Information (ignition temperature, viscosity, etc.)
- Storage location in the Port Area

7.3.2 This information is delivered to the tally clerk, Field Supervisor, Warehouse officer, HSE, and authorized staff through Terminals / Documents and security of the dangerous goods is provided.

7.3.3 In case that information sent from Operation is different from the cargo, Operation will immediately be informed and shipper is instructed to verify the information on Dangerous goods / vehicle /container and correct the incorrect label brands.

7.4 Procedures related to procurement of the Dangerous goods safety information sheets (SDS).

7.4.1 According to the Laws of our country as of January 1st, 2014, Dangerous Goods Safety Data Sheet (SDS) with the following information must be present with the dangerous goods to be transported through all transport modes (by road, rail, air and marine).

- Number,
- PSN name (Proper Shipping Name,) (required for marine transport)
- Class (with lower hazards)
- Packaging Group (Class 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutants or otherwise,
- Tunnel Restriction Code (required for road transport.

7.4.2 It is checked that if this document is available with the Dangerous substance for the all Dangerous goods to be accepted in the port.

7.5 Procedures for records and statistics of dangerous goods.

7.5.1 Administration, it is required that a report including the information of dangerous goods handled in our Port Facility will be reported to the Port Authority in by 3-month periods. The report sample issued by the Operation Department are shown below.

7.5.2 Statistical evaluation of records of dangerous goods handled in our port is carried out by our Trade, operation departments.

7.5.3 Monthly inventory and control reports of Dangerous goods stocked in our Port Area is organized by the operation department and submitted to Administration.

7.5.4 Records and reports are archived by department by 5-year periods

7.6 Information Related to the Quality Management System

ISO 9001 Quality Management System is implemented in the terminal.

8 8EMERGENCY SITUATION, EMERGENCY PREPAREDNESS AND RESPONSE

8.1 Response procedures for dangerous goods that are dangerous for life, property and/or environment and hazardous situations involving dangerous goods

8.1.1 The choice of protective actions for a given situation depends on a number of factors. For some cases, evacuation may be the best option; inothers, sheltering in-place may be the best course. Sometimes, the set woactionS may be used in combination. In any emergency, officials need to quickly give the public instructions. The public will need continuing information andinstructions while being evacuated or sheltered in-place.

8.1.2 Proper evaluation of the factors listed below will determine the effectiveness of evacuation or in-place protection (shelter in-place). The importance of these factors can vary with emergency conditions. In specific emergencies, other factors may need to be identified and considered aswell. This list indicates what kind of information may be needed to make the initial decision.

8.1.2.1 The Dangerous Goods

8.1.2.1.1 Degree of health hazard
8.1.2.1.2 Chemical and physical properties
8.1.2.1.3 Amount involved
8.1.2.1.4 Containment/control of release
8.1.2.1.5 Rate of vapor movement

8.1.2.2 The Population Threatened

8.1.2.2.1 Location
8.1.2.2.2 Number of people
8.1.2.2.3 Time available to evacuate or shelter in-place
8.1.2.2.4 Ability to control evacuation or shelter in-place
8.1.2.2.5 Building types and availability
8.1.2.2.6 Special institutions or populations, e.g., nursing homes, hospitals, prisons

8.1.2.3 Weather Conditions

8.1.2.3.1 Effect on vapor and cloud movement
8.1.2.3.2 Potential for change
8.1.2.3.3 Effect on evacuation or shelter in-place

8.1.3 Protective Actions

8.1.3.1 Protective Actions are those steps taken to preserve the health and safety of emergency responders and the public during an incident involving releases of dangerous goods.

8.1.3.2 Isolate Hazard Area and Deny Entry means to keep everybody away from the area if they are not directly involved in emergency response operations. Unprotected emergency responders should not be allowed to enter the isolation zone.

8.1.3.3 This "isolation" task is done first to establish control over the area of operations. This is the first step for any protective actions that may follow.

8.1.4 Evacute

8.1.4.1 Evacuate means to move all people froma threatened area to a safer place. To perform an evacuation, there must be enough time for people to be warned, to get ready, and to leave an area. If there is enough time, evacuation is the best protective action.

8.1.4.2 Begin evacuating people near by and those outdoors in direct view of the scene. When additional help arrives, expand the area to be evacuated downwind and crosswind to at least the extent recommended in this guidebook. Even after people move to the distances recommended, they may not be completely safe from harm.

8.1.4.3 They should not be permitted to congregateat such distances. Send evacuees to a definite place, by aspecific route, far enough away so they will not have to be moved again if the wind shifts.

8.1.5 Shelter In-Place

8.1.5.1 Shelter In-Place means people should seek shelter inside a building and remain inside until the danger passes. Sheltering in-place isused when evacuating the public would cause greater risk than staying where they are, or when an evacuation cannot be performed. Direct the people inside to close all doors and windows and to shut off all ventilating, heating and cooling systems.

8.1.5.2 In-place protection (shelter in-place) may not be the best option if

8.1.5.2.1 the vapors are flammable;

8.1.5.2.2 if it will takealong timefor the gas toclear the area; or

8.1.5.2.3 if buildings cannot beclosedtightly.

8.1.5.2.4 Vehicles can offer some protection for ashort period if the windows areclosed and the ventilating systems are shut off. Vehicles are not a seffective as buildings for in-place protection.

8.1.5.3 It is vital to maintain communications with competent persons in side the building so that they are advised about changing conditions. Persons protected-in-place should be warned to stay far from windows because of the danger from glass and projected metal fragments in a fire and/or explosion.

8.1.5.4 Every dangerous goods incident is different. Each will have special problems and concerns. Action to protect the public must be selected carefully. These pages can help with initial decisions on how to protect the public. Officials must continue to gather information and monitor the situation until the threat is removed.

8.2 Information on resource, capability and capacity of the coastal facilities regarding to respond to emergencies.

8.2.1 The facility features an approved fire plan. Firefighting teams shall be created for each shift. Demonstrations and exercises, either scheduled or unscheduled, shall be provided for training purposes within the scope of various scenarios at indefinite times. The firefighting equipment stipulated by the approved plan shall be made available fully and maintenance, inspection and test activities shall be conducted for the same.

8.2.2 The facility has an approved action plan against Environmental and Marine Pollution. For each shift, pollution-fighting teams are created. Demonstrations and exercises shall be provided twice a year within the scope of a scheduled scenario, and the reports and records of the same shall be kept. The equipment relating to Environmental and Marine Pollution shall be stored at the facility with counting and inspections in place. Additionally, the facility shall have a protocol for materials stored in the area to ensure support in case of circumstances with inadequate means.

8.2.3 The response teams shall be appointed against the spillage of dangerous goods in line with this guideline and pursuant to IMDG Code.

Occupational Health and Safety Emergency Action Procedure (no. F-İSG-010) ANNEX 1 – EMERGENCY TEAMS are as follows:

Emergency Responsible

Name Surname	Department	Job/Task	Contact Info GSM/Extension	Signature
Salih CENGİZ	ADMINISTRATIVE	Manager	05307635668	

Correspondence Team

Name Surname	Task in the Team	Department / Job/Task	Field of Responsibility	Training Date / Trainer	Contact Info GSM/Extension	Signature
FATİH ÜNSAL	Team Member	ADMINISTRATIVE / PERSONNEL MANAGER			0 538 888 33 44	

Search, Rescue and Evacuation Team

Name Surname	Task in the Team	Department / Job/Task	Field of Responsibility	Training Date / Trainer	Contact Info GSM/Extension	Signature
Şevki Burak Sezer	Team Leader	ADMINISTRATIVE / Machinery supply and maintenance assistant manager – Department employee			0 544 283 44 55	

Özkan DANACI	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Electrician - Department Employee			0 544 412 16 26	
Abdurrahman AK	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Oiler - Department Employee			0 537 894 50 05	
NİHAT KASAP	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Maintenance Foreman – MACHINERY MAINTENANCE FOREMAN			0 541 612 21 07	
Muhammed DOĞAN	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 530 296 55 61	
Muhammed Bahar	Team Member	OPERATIONS MANAGEMENT Loader - Department Employee			0 545 585 55 35	
Mustafa DOĞAN	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 533 551 40 99	
Gül Ahmet BAYDAR	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 542 686 81 39	
Erhan Aydın KIZIL	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 546 468 47 80	
Adnan GEYİK	Team Member	OPERATIONS MANAGEMENT Loder - Department Employee			0 535 702 14 82	
Umut ÇATAL	Substitute Team Leader	OPERATIONS MANAGEMENT Foreman - Department Employee			0 541 929 51 43	

First Aid Team

Name Surname	Task in the Team	Department Job/Task	Field of Responsibility	Training Date Trainer	Contact Info GSM/Extension	Signature
ÖZGÜR OZAN KARAKUŞ	Team Leader	OHS COORDINATORSHIP Workplace Doctor - Department Employee			0 530 928 86 71	
Özkan DANACI	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR			0 544 412 16 26	

		DIRECTORATE Electrician - Department Employee				
Umut ÇATAL	Team Member	OPERATIONS MANAGEMENT Foreman - Department Employee			0 541 929 51 43	
Serkan LATİFOĞLU	Team Member	OPERATIONS MANAGEMENT Shift Supervisor - Department Employee			0 543 683 87 58	
Musa ASAN	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 535 963 69 68	
İsmail KATMERLİKAYA	Team Member	OPERATIONS MANAGEMENT Unloading Worker - Department Employee			0 546 658 06 76	
BORA ÖZBUCAK	Team Member	ADMINISTRATIVE OCCUPATIONAL SAFETY SPECIALIST (CLASS A)			0 533 593 17 21	
EMRE YILMAZ	Team Member	ADMINISTRATIVE Accounting - Department Employee			0 532 067 71 10	
FATİH ÜNSAL	Team Member	ADMINISTRATIVE PERSONNEL MANAGER			0 538 888 33 44	
EROL TEZCAN	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE IT – OHS PERSONNEL			0 541 830 25 55	
Bilal ÖZGÜR	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Oiler - Department Employee			0 536 452 71 83	
Engin GÜN	Team Member	OPERATIONS MANAGEMENT Weighbridge Personnel - Department Employee			0 554 815 40 39	
Remzi GÜNERİ	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Electrics Worker - Department Employee			0 545 244 74 55	
ERSİN ÖZBAŞ	Team Member	FIXED TERM WORKERS OCCUPATIONAL SAFETY SPECIALIST			0 554 934 53 80	
MURAT ÇOLAK	Substitute Team	ADMINISTRATIVE OFFICE			0 546 932 37 13	

	Leader	EMERGECNY MEDICAL TECHNICIAN – Health Staff				

Electrical Energy Cut-Off Team

Name Surname	Task in the Team	Department / Job/Task	Field of Responsibility	Training Date / Trainer	Contact Info GSM/Extension	Signature
Burhan ÖLMEZ	Team Leader	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE / Electrician - Department Employee			0 549 368 33 55	
Sami TAŞ	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE / Electrics Worker - Department Employee			0 542 728 06 30	
ÖZKAN DANACI	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE / Electrician - Department Employee			0 544 412 16 26	
ALİ KAYA	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE / ELECTRICAL MAINTENANCE WORKER- Department Employee			0 544 227 38 73	
Remzi GÜNERİ	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE / Electrics Worker - Department Employee			0 545 244 74 55	

Protection Team

Name Surname	Task in the Team	Department / Job/Task	Field of Responsibility	Training Date / Trainer	Contact Info GSM/Extension	Signature
EMRE YILMAZ	Team Leader	ADMINISTRATIVE / Accounting - Department Employee			0 532 067 71 10	
EROL AK	Team Member	ADMINISTRATIVE / CLEANING – Department Employee			0 535 241 36 05	
Cemil OKUMUŞ	Team Member	OPERATIONS MANAGEMENT / Weighbridge Personnel - Department Employee			0 544 735 98 45	
EMRE GENÇ	Team Member	ADMINISTRATIVE / CAFETERIA PERSONNEL			0 507 054 55 48	

NİHAT KASAP	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Maintenance Foreman – MACHINERY MAINTENANCE FOREMAN			0 541 612 21 07	
Engin ALACA	Team Member	OPERATIONS MANAGEMENT Crane operator - Department Employee			0 542 828 53 30	
Dursun Ali KAYA	Yedek Ekip Başı	OPERATIONS MANAGEMENT Shift Supervisor - Department Employee			0 538 614 23 90	

Transportation Teams

Name Surname	Task in the Team	Department Job/Task	Field of Responsibility	Training Date Trainer	Contact Info GSM/Extension	Signature
UFUK DEMİR	Team Leader	ADMINISTRATIVE Department Employee			0 532 591 96 97	
Necati DİKKOL	Team Member	ADMINISTRATIVE Accounting - Department Employee			0 543 656 66 10	
Mehmet OKUMUŞ	Team Member	OPERATIONS MANAGEMENT Weighbridge Personnel - Department Employee			0 539 460 15 49	
Hakan GÜNGÖR	Team Member	OPERATIONS MANAGEMENT Weighbridge Personnel - Department Employee			0 533 579 13 22	
Mustafa MAT	Team Member	OPERATIONS MANAGEMENT Unloading Worker - Department Employee			0 537 443 02 57	
Ferhat AKÇAOĞLU	Team Member	MACHINERY SUPPLY MAINTENANCE REPAIR DIRECTORATE Maintenance Personnel - Department Employee			0 544 797 84 07	
MESUT UZUN	Substitute Team Leader	ADMINISTRATIVE Environmental Engineer - Department Employee			0 542 819 85 61	

8.3 Regulations related to the the first aid for accidents involving dangerous substances (first aid procedures, first aid resources and capabilities and so on.).

8.4.1 In case of occurrence of emergency or detecting its symptoms, Emergency Manager (EM) initiate the appropriate measures pursuant to Emergency Management

System (EMS) according to the relevant plans.Emergency Management Group (EMG) reviews the decisions regarding to the measures to be taken within scope of the ISGOTT and IMDG Code and put it into effect. Improvements continuously monitored by EMG and taking higher level of measures or help are decided, if needed..

8.4.2 EMG operations will be carried out by Emergency Management Center (EMC) or its equivalent. Emergency management at different levels depending on the severity of emergencies:

Facility / Site
Institutions
County, EMC
City EMC
Possible to be managed by the central government.

8.4.3 Emergency Management at the facility level will be performed by using safe, fast internal and external communication opportunities with well designed organization, personnel prepared with training and exercises, Emergency Plans including procedures and documentation. The Emergency Management processes will be followed and controlled by basically applying the following measures.

FURTHER OPERATIONS	Related Sections
WARNING: Announce the occurrence/probability of emergency and unexpected situations.	All Personnel and Ship
CALL FOR HELP: Transfer of the necessary information to relevant organizations	All Personnel
RESPONSE: Respond to the Emergency as soon as possible with the right equipment and trained personnel stated under the Plan.	Response teams
FIRST AID: Administration of the first aid activities until professional support team arrives	All Personnel having First Aid Training
RESCUE: Saving material, tools, information, documents and other important papers of Port Facility	First Aid Personnel
PROTECTION: Taking recovered materials, tools, information, documents and other important papers under protection	Security Personnel
INFORMATION: Sending necessary explanations to the costumer and other persons and Press	Press and Public Relations
REQUIRED NOTICES: Sending of required notifications in accordance with regulations to the public authority	Authority

8.4 On-site and off site Notifications required to be made in case of emergency

a) Time of accident occurrence,
b) How the accident occurs and its reason, if known,
c) Place where the accident occurs (onshore facility and/or vessel) and its position and impact area,
ç) Details of vessels involved in the accident, if any (name, flag, IMO no, owner, operator, cargo and its content, full name of the captain and similar details),
d) Meteorological conditions,
e) UN number of dangerous good and description of proper handling (the legislation provided in the description of dangerous goods shall apply) and quantity,
f) Hazard class and sub-hazard class, if any, of dangerous goods,
g) Packaging group of dangerous goods,
ğ) Additional risks posed by dangerous goods, if any, such as marine pollutant,
h) Marking and labelling details of dangerous goods,
ı) Properties and number of packing, cargo handling unit and container by which dangerous goods are carried, if any,
i) Manufacturer, shipper, transporter and recipient of dangerous goods,
j) Extent of resulting damage/pollution,
k) Number of casualties, injuries and loss, if any,
Emergency response practices performed at the onshore facility regarding the accident.

8.5 The procedures for reporting accidents.

8.5.1 Communication

8.5.1.1 Communication channels for the determination of the on-site and off-site communication methods and an effective management of the emergency in case of possible emergency cases in the Port Facility are specified as follows;

- Mobile Phones and the satellite phone, if available
- Computers
- Radio
- Siren
- Messengers olarak belirlenmiştir.

8.5.1.2 Internal communication is primarily provided by the radio and intercom for the emergencies occurred in the port. The communication between the Port and Ship is carried out by radio or VFH marine band radio provided by the Port.

8.5.1.3 Secure communication with the Official authorities, adjacent facilities and relevant authorities are provided as soon as possible in case of any emergency that may occur in the Port.

8.5.2 Reports

8.5.2.1 EMC shall operate a reporting system that correctly notifies Emergencies to the relevant authorities as soon as possible. EMC including the information required to be notified in an emergency case shall create this reports in a proper way.

8.5.2.2 Dangerous goods accidents must be reported to the Port Authority. The report format shall be free-form and include 8.4 details in full.

8.6 Coordination, support and cooperation method with authorities.

8.6.1 All accidents related to dangerous goods will primarily be coordinated with Port Authority. Aid units of city / County Fire Department, DEMP and adjacent facilities will provide support and cooperation by informing the Port Authority.

8.6.2 In case of any signs of explosion, fire or emergency noticed at an adjacent facility;

Measures shall be tightened at the facility in the first place,

Teams shall be caused to get prepared for providing with the adjacent facility with assistance

8.6.3 Assistance and support teams shall be assigned for responding to any event in consideration of the urgency of situation and the severity of hazard, if there is no possibility to request help or time.

8.6.4 Preparations shall be in place for measures such as unloading and reduction of loads and removal of the vessel to anchorage site in case of any interface vessel in consideration of class, quantity and hazard risk of loads available at dangerous goods site and on site.

8.7 Emergency evacuation plan for the evacuation of the ship and vessels from the coastal facility in case of emergency

8.7.1 Preparation for Emergency Seperation System

8.7.1.1 All emergencies should be reported to the Port Authority.

8.7.1.2 If the emergency separation of ship is decided, the safe places that the ship can be transferred under controlled conditions must be specified by the Port Authority..

8.7.1.3 In case of an emergency situation that requires emergency separation, the ship's captain and port facilities shall initiate the emergency separation by mutual agreement and inform the situation to the Port Authority as as soon as possible. A representative from Port Authority or Port Master, Terminal Manager / Business Officer, Ship Captain, Guide Captain shall come to a mutual agreement on the time and type of the separation before the immediate action where the severity and time of the emergency allow.

8.7.1.4 The ship's machinery,steering gear and Marine Systems equipment shall be ready for use immediately.

8.7.1.5 All cargo discharge, ballast discharge process must be stopped and shall be prepared for the separation process.

8.7.1.6 Salt water system of the ship must be watered and water mist must be used for strategic departments..

8.7.1.7 If the atmosphere needs vent operation, the engine room staff must be ready, all unnecessary receiver entrance must be closed, all the necessary safety measures relating to the normal operation must be fulfilled and and a warning notice must be published.

8.7.1.8 If the necessary responds are over the terminal resources for all emergencies, local police or fire department must be reported immediately.

8.7.1.9 The decision to depart the ship under control is set out on the safety principle and it should cover the following requirements.

8.7.1.10 - The adequacy of the Trailers

8.7.1.11 - The ships's ability to depart with its own power

8.7.1.11.1 - The availability of a safe place that a ship can or will be taken in an emergency case.

8.7.1.11.2 - Fire-fighting competence

8.7.1.11.3 - The proximity of other vessels

8.7.1.11.4 - Fire Ropes

8.7.1.12 Fire ropes shall be kept on the top and shoulder of the ships as long as the ship is at Port Facility. The eye of the rope should be wound down to the sea level and the section on the board must be tight with at least five rounds to the bollard. Part of the top board of the rope must be stretched from the bollard. A cord that can carry the rope must be tied right before the eyes of the rope and the eye of the rope must be located in a way that it is three meters above the sea level. The eye of rope must be kept at this level while the ship is at Port Facility.

8.7.2 Realization of Emergency Separation

8.7.2.1 If all the preparations above examined and deemed appropriate, the ship will be immediately departed.

8.7.2.2 Emergency separation will be provided by the fulfillment of the following processes in order.

8.7.2.3 A close coordination and cooperation between Terminal, Ship and Port Authorities is required for each phase.

8.7.2.4 Emergency Separation Process is as below.

- Activating an alarm
- Inform about the emergency by VHFphone
- Making the first official assessment of the situation between the ship's captain and officer of Port Facility.
- Suspension of operation
- Implementing Port facility and ship emergency plan measures
- Removal of the flexible hose connection.
- The deterioration of the current situation and availability of the aforementioned emergency separation.
- Making the assessment of the situation between the ship's captain, port facility officer, port authority or port master, guide captain
- The decision to the emergency separation
- Inform the adjacent facilities and other vessels
- The deployment of Trailers around the ship for an emergency separation, complement of the preparation and announcement of the situation
- Completing the preparations for the ship by the captain and indicating that it is ready.
- Granting approval for the opening of the release hook by the competent person.

ATTENTION!

THE IMPLEMENTATION OF EMERGENCY SEPARATION PROCESS MUST BE CONSIDERED AS THE LAST RESORT AND SEPARATION HOOKS MUST NOT BE RELEASED BEFORE TAKING ALL NECESSARY MEASURES AND FULFILLING THE CONDITIONS ABOVE.

Post Emergency Separation

8.7.3.1 –Declaration of the decision on vessel back up and navigation route after the separation process of vessel.

8.7.3.2 –Transition / mooring of the vessel to designated area in company with towboats or its own machine

8.7.3.3 –Port Facility: Determining possible damages or deficiencies through examining the port facility

8.7.3.4 –Consideration of the time when the vessel and port facility become available for freight handling

8.7.3.5 -Sharing problems, if any, occurred during emergency separation

An agreement is reached by and between pilotage and towage organizations and onshore facility authorities regarding any fire, explosion or similar emergencies which are likely to arise during loading/unloading.

Adequate towing boats having satisfactory towing power as furnished with necessary equipment to fight fire in line with weather and marine conditions shall reach the scene as soon as possible in case of emergencies pursuant to the protocol executed with the authorized company to remove the vessel away from the facility and move it to a safe location.

8.8 Procedures for handling and disposal of the damaged dangerous goods and wastes contaminated with dangerous goods.

8.8.1 Waste Collecting and Handling

8.8.1.1 Consequential waste are collected to waste bins taxonomically and handled to be stored properly. Waste occurred as a result of the maintenance process are handled in that scope.

8.8.1.2 Additional waste classes, if available, are provided to be integrated into the current waste classes.

8.8.2 Waste disposal

8.8.2.1 According to the hazardous or non-hazardous properties, the waste collected are isolated from the facility by selling them or using contracted organizations which are in conformity with legal recycling/disposal methods.

8.8.2.2 Opportunities of all contractors and carriers within the body of waste management in terms of appropriate methods of waste handling and/or disposal are examined.

8.8.2.3 In case of any contracting service received for handling, selling and/or disposal of the waste, those contracting companies are observed whether they fulfill their legal liabilities or perform recycling or disposal without damaging the environment.

8.8.2.4 It is an obligation to keep all the records concerning waste disposal.

8.8.3 Contaminated Packages;

8.8.3.1 These waste are empty barrels. If occurred, should be left to the contaminated package area in the dump site and Environmental Consulting Firm and Environmental Management System Supervisor contact with contracted and licensed company to send those contaminated packages through filling up the National Waste Handling Form within the time specified in the laws and regulation. Relevant documents of National Waste Handling Form and other documents are stored in environment folder.

8.8.3.2 Contaminated Waste; are used gloves, waste cottons and work uniforms. When occurred, should be collected at the waste barrel which is located at the exit of the production-warehouse department and then moved to the waste area. Within the time specified in the laws and regulation, Environmental Consulting Firm and Environmental Management System Supervisor contact with contracted and licensed company to send those contaminated packages through filling up the National Waste Handling Form. Relevant documents of National Waste Handling Form and other documents are stored in environment folder.

8.9 Emergency drills and their records.

8.9.1 Implementation of Practices;

Emergency organization personnel should get various trainings to get ready for their duties with the purpose of providing against emergencies within the facility. If necessary, such trainings must be organized through specialized agencies. In that scope, relevant personnel have received trainings on IMDG CODE regarding Dangerous goods and have been certified. Practices, which shall be performed in an effort to examine the efficiency of Emergency Plans and be prepared for facts, have to be planned in a way that they will be performed considering the worst scenario likelihood within the facility.

8.9.2 Practice Scenarios;

Planning practices needs two anticipations one of which is a single incident that the port experience and the other is the worst scenario with the combination of these single incidents. In accordance with the scenarios prepared, practices are ensured to be performed in the fastest and most efficient way possible.

8.9.3 Emergency Practices which will be performed within the facility;

8.9.3.1 Have to be indicated within annual training plans.

8.9.3.2 May be planned as local or general responses,

8.9.3.3 Safety, Spillage, etc. may be combined in practice scenarios,

8.9.3.4 Practices can be performed with or without notices.

8.9.3.5 Practices are based upon different emergency scenarios.

8.9.3.6 A practice may be actually performed as it can be negotiated as a desk work or a seminary,

8.9.3.7 Each practice is prepared with scenarios of different hours, days, seasons and incidents.

8.10 Information on fire protection systems.

8.10.1 Emergency and fire equipment is given as follows:

Fire hydrants, Fire extinguishers, Fire cabinets and Fire hoses, On-site fire alarm detectors, Electrical and diesel fire pumps

The fire inventory is as in the Emergency Plan.

8.11 Procedures for approval, inspection, testing, maintenance and availability of the fire protection system.

8.11.1 Fire-Protection Water Tanks and Fire-Protection Water

8.11.1.1 The storeroom should be cleaned up at least once a year by discharging the content in order to prevent possible hazards from moss and mud built up in the bottom and sides in the event of fire. Inlet valves, check valve and filters are maintained during the discharge process of pondages.

8.11.1.2 In case of sudden drawdown on water level, it must be checked for a seep or leakage and repaired if necessary.

8.11.1.3 Following the annual check, if necessary, internal and external cleaning and maintenance should be performed in sealed stores.

8.11.2 Fire-Protection Water Pumps

8.11.2.1 Points to take into consideration regarding operation of pumps and troubleshooting i addition to scheduled maintenance are specified below.

8.11.2.1 Pumps, stuffing boxes, pressure bolts are checked interrelated and it is ensured whether the pump can be turned up manually with ease or not. Water drops from stuffing box during the operation of the pump is typical. In order to prevent such water flow to the ground, the threaded opening under the stuffing box must be connected to the drainage with a tube.

8.11.2.2 Fire-protection water pumps must be operated and recorded at least 1 hour a week.

8.11.2.3 Pump and suction pipe are ensured to be completely full of water. If it is not, water filling plug and bleed valve must be opened and such parts mentioned must b e filled up with water until they overflow and when the water stops at the plug level, the plug must be tightened properly.

8.11.2.4 Pump motor will draw excessive current because of the starting current at the early stages of the operation. As a result of the simultaneous operation of all pumps, cutout switches may be tripped or diesel generators may be broken down seriously because of the heavy current. Therefore, limit relays that regulates the transition -from the star located at the shielded switch which drives the pump motors to triangle- must be arranged according to the number of pumps and the amount of pumps to be operated simultaneously and with respect to different and appropriate time intervals and timely initiation of pumps is provided.

8.11.2.5 After performing aforesaid preliminaries and checks, pumps are operated by pressing the drive switches. During the operation, electric motor voltage and the ampere driven must be checked from time to time. If the ampere driven is high at normal operation, a troubleshooting is needed. There may be a mechanical breakdown or force at the pump or motor. Substandard voltages may be hazardous for motor.

8.11.2.6 Monometers must be checked regularly and one or more pumps must be stopped in case of excess pressure increases.

8.11.2.7 Delivery pipes of pumps must be equipped with valves initially and check valves thereon.

8.11.2.8 If the check valve of the failed pump on the delivery pipe is blocked by materials such as paper, garbage, pieces, moss, mud and interrupts the proper close of the check valve, a part of the water pumped by the other pumps is pumped to the pool while passing through this failed pumps and suction pipes. This failure blocking the water discharge must be fixed in condition of fire occurrence. If a spinning is detected on some of the couplings of failed pumps during the operation of a part of the pumps, it must be interpreted as a sign for the above mentioned failure.

8.11.2.9 It must be ensured that the pump and the engine are at the right direction during the operation. For that reason, return path must be drawn on the coupling and control must be performed accordingly.

8.11.2.10 The bearings of the pump and engine must not be hotter than hands can resist. If the heat is high, it may be resulted from an internal mechanical forcing or coupling maladjustment. In such situations pump must be stopped and the failure must be corrected immediately.

8.11.2.11 For pumps driven by diesel engine, starting the engine must be carried out in line with the instructions.

8.11.2.12 In condition that a deficiency or malfunction is detected as a result of control, it is fixed by the responsibles.

8.11.3 Sprinkler System

8.11.3.1 The most important point and maintenance to do about sprinkler installation is preventing sprinkler head to be congested. To supply this; sprinkler should be worked according to standards/legislations and should be sure that it is working. Sufficient sprinkler head should be keep in every facility and in case of failure, it should be replaced with new ones, broken ones should be towed by repairing.

8.11.4 Fire Protection Hydrant Installation

8.11.4.1 Entering rain water into fire-protection hydrant hose closets should be prevented; hoses should be without fracture, solid and constricted enough. At least one of the hoses should be maintained as always connected to fire protection valve.

8.11.4.2 Fire-protection valves should be impermeable and working. Broken nozzles, valves and hoses should be replaced immediately and faults should be repaired and towed. Therefore, sufficient hose, nozzle, fire-protection valve, clamp, sleeve and spare materials belong to those should be kept. Waiting the failure is not allowed with any reason at firefighting equipment.

8.11.4.3 While determined failures were fixing after drills, running fire-protection hoses shouldn't be put into closet with water in it. Facilities should supply proper hose suspension to drain the water off in hoses and to be dry and facilities shouldn't replace before ensuring that hose is quite dry. If sea water was ejaculated by hoses, firstly inside of them should be washed by fresh water and then they should be dried at a windy place.

8.11.4.4 All pipes belong to installation of sprinkler and fire-protection hydrants are has to be controlled in general every three months, rusty parts should be painted, decayed parts should be replaced, valves and retched valves should be controlled and failure should be fixed.

8.11.4.5 If any lack or malfunction is determined as a result of all fire-protection hydrants, hoses, and nozzles control it is fixed by related liable.

8.11.5 Portable Extinguishers

8.11.5.1 Sufficient quantity of spare device should always be in facility storages for failure, control and maintenance. Instead of extinguishers those were used for purposes above should be replaced with reserves.

8.11.5.2 All extinguishers are had visual test monthly and inspected. After control, extinguishers' upper surface is marked. During the control, especially extinguishers with dry powder are turned down and slightly hit the base, so powder in pipe is allowed to move. Otherwise, powder in extinguishers stays at same location for a long time can be hardened by subsiding to base. After the result of control; if any lack or malfunction is determined, it is fixed by related liable.

8.11.5.3 Extinguishers are inspected annually in general by firm according to TS ISO 11602-2 Fire Protection: Portable and wheeled extinguisher standard. Extinguishers are tested by related firm in ten years most intervals, chemical powder is inspected at the end of the 4th year.

8.11.6 Protection against freezing.

8.11.6.1 Protection of Generators

8.11.6.1.1 By outside temperature's decreasing under +4C, water may start to freeze. Therefore, radiator's generators with water-cooled motor should be ensured with antifreeze.

8.11.6.2 Protection fire-protection water pumps.

8.11.6.2.1 Fire-protection water pumps and absorption pipes are always full with water. So ambient temperature shouldn't be under +4 C.

8.11.6.3 Protecting of fire-protection distribution pipes.

8.11.6.3.1 Main pipes and branch pipes are had to be protected against the freezing about hydrant sinks. So, lines are protected against freezing by isolation or being floored underground.

8.12 The measures to be taken in case of failure on fire protection systems.

8.12.1 The facility is a system with established alternative competency which backs up firefighting equipment.

8.12.2 The support of adjacent facilities, Fire departments and AFAD (Disaster and Emergency Management Directorate) shall be sought in cases where the facility's own fire fighting equipment is inadequate or out of service.

8.12.3 Other hazardous and combustible materials / vehicles, which are likely to be affected from fire, shall be removed away from the area, if possible.

8.12.4 A necessity may arise to determine under which conditions assistance and support are provided and their scope.

8.12.5 The capabilities of towing boats or marine vehicles featuring marine fire extinguishing system available in the area should be taken into consideration.

8.13 Other risk control equipment.

9 SAFETY AND HEALTH AT WORK MEASURES

9.1 Occupational health and safety measures.

Harbor Structure Management is obligated to take all necessary measures to prevent employees to be affected of these substances, if this is not possible; minimizing it and to protect employees from the danger of these substances when working with chemical substances.

9.1.1 Risk assessment

9.1.1.1 Harbor Structure Management is obligated to do a risk assessment in accordance with 29/12/2012 dated, 28512 numbered Occupational Health and Safety Regulation provisions published at official gazette to determine if there is dangerous chemical substance at Harbor Structure and if there is; determining negative effects in terms of employees' health and safety.

9.1.1.2 Following details are specifically considered at risk assessment to be made at studies with chemical substances:

9.1.1.2.1 Danger and harms of chemical substance in terms of health and safety.

9.1.1.2.2 Turkish material safety verse form (SDS)to be provided from sellers, manufacturers or importers.

9.1.1.2.3 Duration, type and level of contagion.

9.1.1.2.4 Quantity, conditions of usage and frequency of usage of chemical substance.

9.1.1.2.5 Vocational exposition limit values and biological limit values given at annexes of this regulation

9.1.1.2.6 . Effect of preventive measures to be taken or taken.

9.1.1.2.7 If available, results of last health surveillance.

9.1.1.2.8 Each of these substances and their interactions with each other at works that was worked in with more than one chemical substances.

9.1.1.3 Harbor Structure Management obtains extra information from supplier or other sources that is necessary for risk assessment. This information also includes special risk assessments involved in current regulations if available intended for users.

9.1.1.4 A new activity includes dangerous chemical substance is only started after taking all types of measures those were specified by doing risk assessment.

9.1.1.5 Measures to be taken at studying when dangerous chemical substances.

9.1.1.5.1 Risks in terms of employees health and safety when studying with dangerous chemical substances are disabled or minimized with following measures:

9.1.1.5.2 Proper regulation and organization of work are done at Harbor Structure.

9.1.1.5.3 Studies with dangerous chemical substances are made with minimum number of employees.

9.1.1.5.4 Substance quantity and exposition period employees will be exposed is allowed to be at minimum level.

9.1.1.5.5 Chemical substance quantity to be used at Harbor Structure is kept at minimum level.

9.1.1.5.6 Work place building and extensions are always kept clean and neat.

9.1.1.5.7 Proper and sufficient conditions are provided for employees' personnel cleaning.

9.1.1.5.8 Necessary regulations are made to store, transport, use and process dangerous chemical substances, waste and residuals properly at Harbor Structure.

9.1.1.5.9 Safe or less dangerous chemical substance is used instead of dangerous substance in terms of employees' health by using substitution method. İf substitution method can't be used because of specification of the work, according to risk assessment result and with order of precedence, following measures are taken and risk is reduced:

9.1.1.5.10 Proper process and engineering control systems are chosen by also considering technological developments at studying with dangerous chemical substances involving maintenance and repair works those can be hazardous in terms of employees' health and safety.

9.1.1.5.11 Block protection measures like installing sufficient ventilation system and proper work organization are taken to prevent risk at its source.

9.1.1.5.12 In case of taken measures for protecting employees collectively against chemical substances' negative effects are not sufficient, personnel protection methods are adopted with these measures.

9.1.1.6 Sufficient control, supervision and inspection is made to allow taken measures to be active and perpetual.

9.1.1.7 Harbor Structure Management provides analysis and measurements of chemical substances regularly those could be hazardous for employees health. If any changing is realized at conditions those can effect Harbor Structure employees' exposition to chemical substances, these measurements are repeated. Measurement results are assessed by considering vocational exposition limit values specified in this Regulation annexes.

9.1.1.8 Harbor Structure Management, also considers specified measurement results. Every situation vocational exposition limit values are crossed, Harbor Structure Management takes protective and preventive measures to fix this as soon as possible.

9.1.1.9 On condition of remaining Regulation Provision about Protecting Employees from Dangers of Explosive Places secret, Harbor Structure Management makes administrative arrangements and takes technical measurements according to following order of precedence in accordance with turnover's specification involving to process, store and transport chemical substances, to prevent interacting chemical substances' touching each other mutually on the purpose of protecting employees from dangers which originate from chemical substances' physical and chemical feature, by basing results of risk assessment and risk avoidance principles:

9.1.1.9.1 For inflammable and explosive substances to reach dangerous concentration and having dangerous quantity of chemically unstable substances are prevented at Harbor Structure. If this is not possible,

9.1.1.9.2 Having inflammable sources those can cause fire or explosion at Harbor Structure. Conditions those can cause harmful effect of chemically unstable substances and mixtures are disabled. If this is also not possible,

9.1.1.9.3 **.** Required measures are taken to minimize or prevent employees to be effected by chemically unstable substances' and mixture's harmful effects in case of fire or explosion originate from inflammable or explosive substances.

9.1.1.10 Protective systems those were provided for protecting work equipment and employees, are designed, produced and supplied in accordance with legislation in force in terms of health and safety. Harbor Structure Management provides all equipment and protective systems to be used at explosive places, to be in accordance with provisions of Regulation About Equipment an Protective Systems Used at Probable Explosive Places (94/9/AT) published at 26392 4 repeated numbered and 30/12/2006 dated official gazette

9.1.1.11 Arrangements to reduce effect of explosion pressure are made.

9.1.1.12 Facility, machine and equipment are allowed to be always under control.

9.1.1.13 Minimum safety distances are complied with placing storage tanks those have liquid oxygen, liquid nitrogen and liquid argon at work places.

9.1.2 Emergencies

9.1.2.1 Especially following details are considered in case of emergencies originate from dangerous chemical substances at Harbor Structure on condition of keeping details specified in Regulation about Emergencies at Workplaces published 28681 numbered and 18/6/2013 dated Official Gazette as a secret :

9.1.2.1.1 Preventive measures to reduce negative effects of emergencies are taken immediately and employees are informed about the situation. Necessary studies are done to return emergency to normal and only employees assigned at emergencies to do maintenance, repair and compulsory works and teams came to scene from another place are let to get into effected area

9.1.1.1.2 Personal protective equipment and special security equipment is given to the people allowed to enter the affected area and it is being sure that they are using them as long as the emergency situation goes on. People who do not have personal protective equipment and special security equipment are not allowed to enter the affected area.

9.1.2.1.3 Information about the Dangerous chemicals and emergency situation intervention and evacuation procedures are all ready for use. Workers employed for the cases of emergency at the Port Facility and the establishments active in first aid, emergency medical attention, saving and firefighting outside the work place should be provided with these information and procedures easily. These information include;

For the workers employed for the cases of emergency at the Port Facility and the establishments active in first aid, emergency medical attention, saving and firefighting outside the work place to be ready beforehand and so they can practice the appropriate attention, the danger resulting from the work done, precautions to take and works to be done,

A special danger or information about the works needed to be done that are likely to happen in an emergency situation,

9.1.3 Workers' education and informing them

9.1.3.1 Port Facility Management, provided that the provisions mentioned on the Regulation 15/5/2013 dated 28648 numbered Occupational Health and Safety Education Procedures and Principles remain hidden, ensures the workers' and their representative's training and informing. This training and informing especially include the aspects mentioned below;

9.1.3.1.1 Information gained as a result of the risk evaluation.

9.1.3.1.2 Information about the dangerous substances that may occur or taking place at the Port Facility and about the recognition of these substances, health and security risks, occupational diseases, occupational exposure level values and other legal regulations.

9.1.3.1.3 Necessary precautions and things to do so that the worker's do not danger themselves or the other workers.

9.1.3.1.4 Information on the Turkish material safety data sheets supplied from the manufacturer for the dangerous chemical substances.

9.1.3.1.5 Information on labelling/locking the parts, covers, pumping system and suchlike instalment where the dangerous chemical substances are according to the regulations

9.1.3.2 The training and information to the workers and their representatives on the works with the dangerous substances are a training supported by a verbal or written instruction due to the risk degree resulting from the risk evaluation done and its type. These instructions changes according to the changing conditions.

9.2 Information about the personal protective clothes and procedures to use them

Personal Protective Devices of the Response Teams

Level A

Usage area : Situations where the skin, breathing, eyes and etc. need to be protected in a high standard – gas proof
Positive pressured Tube Breathing Apparatus– SCBA
Protective clothing against the chemicals
Gloves which are chemical proof from inside.
Gloves which are chemical proof from outside.
Boots or long boots, chemical proof, with steel heels.
Thermal underwear, long sleeve and cuffed
Hard Cover
Long sleeved
Double sided wireless connection (No spreading sparks)

Level B

The minimum level needed for the entry and exit to the scene, rather for the liquids to be spilled or scattered.
Positive pressured Tube Breathing Apparatus– SCBA
Protective clothing against the chemicals
Gloves which are chemical proof from inside.
Gloves which are chemical proof from outside.
Boots or long boots, chemical proof, with steel heels.
Hard Cover
Double sided wireless connection (No spreading sparks)
Face mask

Level C

Used when the chemicals in environment are known, when the concentration is decided, when it is decided that the skin and eyes will not get harmed. However continuous measure should be done.

→ Full mask, air cleaning filter
→Protective clothing against the chemicals
→Gloves which are chemical proof from inside.
→Gloves which are chemical proof from outside.
→Boots or long boots, chemical proof, with steel heels.
→Hard Cover
→Double sided wireless connection (No spreading sparks)
→Face mask

Level D

Work clothes (emergency intervention team). Requires long sleeved and security shoes/boot. Other Personal protection equipment changes due to the condition of the event. If a problem is to occur about the skin, entries to the scene with these kinds of clothes should not be done.

9.3 Precautions and Procedures for Confined Spaces Entry Permit

Works are carried out in line with the control form prepared as per suggestions in IMO 1050 Circular on Entry to Confined Spaces, before the start of operation, during and after operation as well as during operations resumed after breaks. F-İSG-030 CONFINED SPACES ENTRY PERMIT FORM is used, and the forms are archived for 3 years.

10 OTHER POINT

10.1 Validity of the Dangerous goods Document of Compliance.

It is valid until 06.07.2025.

10.2 Responsibilities of the Dangerous Goods Safety Consultant

As in section 2.4.

10.3 Matters for carriers of the dangerous goods arriving/leaving coastal facility by land (matters on required documents that must be available in the road vehicle at the entrance/exit of port or coastal facility area, equipment and tools required for this vehicles, speed limits in the port area etc.).

10.3.1 Packaged dangerous goods and bulk dangerous goods (liquid or solid):

10.3.1.1 Name of the consignor (shipper) and date of delivery to the port area, normally not less that 24 hours before arrival;

10.3.1.2 For packaged dangerous goods: the Proper Shipping Names of the dangerous goods, the UN number, the class or, when assigned the division of the goods, including for class 1, the compatibility group letter, (if applicable), any subsidiary risk, the number and type of packages, packing group, the flashpoint range (as appropriate), the quantity and additional information as required by chapter 5.4 of the IMDG Code;

10.3.1.3 for bulk dangerous goods: the product name and any other information required by the relevant IMO code; and

10.3.1.4 the name of the ship into which the dangerous cargoes are to be loaded (if applicable), the ship's agent and the interface.

10.3.2 Necessary certificates

Dangerous Goods Declaration, Dangerous Goods Transport Dispatch, Multi Mode Dangerous Goods Form, Dangerous Goods Manifest, Packaging and Container/Vehicle Loading Certificate, Safety Data Sheet, carrying certificate showing exemption for the shipping under ADR/RID/IMDG Code 3.4 and 3.5, SRC 5 certificate appropriate and valid for transport with regard to shipping under ADR, ADR written instruction, Vehicle Conformity Certificate appropriate and valid for carriage, transport document, CSC Certificate for the shipping made with container, the certificate showing eligibility of the tree in case of using heat treated tree with regard to transport or loading safety and cargo transport unit (CTU), cargo safety certificate signifying that container or the cargos in vehicle are secured within the scope of IMDG Code,

As regards the cargos to which fumigation application is made or contain hazardous gas in the cargo transport unit leaving port facility and the cargo transport units arriving port facility, the result of risk evalaution or transport conformity certificate if gas measurement is done,

Without lack of compulsory documents regarding the transport listed above, dangerous goods that arrives port facility and leaves port facilities cannot be shipped. The cargos not taken under security in appropriate way within the scope of IMDG Code is treated as dangerous goods too.

10.3.3 Speed Limit in Port Facility

Speed limit in our port facility is 20 km.

10.4 Matters for carriers of the dangerous goods arriving/leaving coastal facility by sea (matters on day/night signals to be shown by ships carrying dangerous goods and vessels, cold and hot work procedures in ships and so on.)

10.4.1 Arrival by Sea

10.4.1.1 Packaged dangerous goods:

10.4.1.1.1 Name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;

10.4.1.1.2 Suitable Dispatch name of dangerous goods, UN no, class for class 1 or determined part of products, suitability group letter (where applicable), if any, sub-risk, parcel number and type, packaging group, interval of flash point (where applicable), amount and the additional information necessitated with IMDG Code chapter 5.4;

10.4.1.1.3 each cargo, dispatch or item in list should be numbered successively for easy reference.

10.4.1.1.4 stacking of dangerous goods in a way to mark the ones to be unloaded and left in ship;

10.4.1.1.5 the dangerous goods to be left in ship should be indicated in a manner to refer the numbers in list (see above)

10.4.1.1.6 condition of dangerous goods in case of possibility of occurence an unappropriate hazard and

10.4.1.1.7 any known defect that will able to affect security of ship or port area.

10.4.1.2 Dangerous bulk cargo (liquid or solid);

10.4.1.2.1 name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;

10.4.1.2.2 a list showing product name of dangerous goods and other information necessitated with related IMO Code

10.4.1.2.3 A valid International Conformity Certificate for Bulk Transport of Hazardous Chemicals or a valid Conformity Certificate for Transport of Bulk Hazardous Chemical, whicihever is appropriate, International Pollution Prevention Certificate for Liquid Bulk Substances hazardous for Health (NLS Certificate) and/or International Fuel Pollution Prevention Certificate should be made available for cargo;

10.4.1.2.4 Dangerous goods to be left in ship should be indicated in a way to refer the numbers in list;

10.4.1.2.5 The unitized carries which enter in a solid cargo terminal should also specify qualification of the last three cargos and where applicable, flash points and current situation of tank/cargo holes (i.e. if they are gasless)

In the event of occurrence of any inconvenient danger, situation of dangerous goods and taking under protection of cargo and transport system, the equipment related to the cargo shipped bulkly and a defect known in instrumentation and

10.4.1.2.6 any known defect that may influence security of port area or ship

10.4.1.3.7 The additional information to be presented to port administration before dangerous goods are brought port area or taken out of port area may be those indicated in ISPS Code Chapter B. The samples of other information necessitated by regulatory voards concerning packaged dangerous goods are:

.1 Container number

.2 shipping license no or reference (if IMDG Code is class 1 or 7)

.3 name and communication details of receiver or local carrier (if available)

10.4.2 Departure by Sea

10.4.2.1 Packaged dangerous goods:

10.4.2.1.1 name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;

10.4.2.1.2 Suitable Dispatch name of dangerous goods, UN number, class for class 1 or established part of products, conformity group letter (where applicable), sub-risk if any, parcel number and type, packaging group, flash point interval (where applicable), amount and the additional information necessitated by IMDG Code chapter 5.4;

10.4.2.1.3 stacking place on board of dangerous goods.

10.4.2.2 Dangerous bulk cargos (liquid or solid):

10.4.2.2.1 name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;

10.4.2.2.2 a list showing product name of dangerous bulk cargos and other information necessitated by related IMO Code

10.4.2.2.3 A valid International Conformity Certificate for Bulk Transport of Hazardous Chemicals or a valid Conformity Certificate for Transport of Bulk Hazardous Chemical, whichever is appropriate, International Pollution Prevention Certificate for Liquid Bulk Substances hazardous for Health (NLS Certificate) and/or International Fuel Pollution Prevention Certificate should be made available for cargo;

10.4.2.2.4 Stacking on board or place of dangerous goods.

10.5 Additional points will be added by the port facility.

10.5.1 Training

10.5.1.1 Management

10.5.2.1 Management should ensure that all shipboard and shore personnel involved in the transport or handling of dangerous goods or in the supervision thereof are adequately trained, commensurate with their responsibilities within their organization.

10.5.2.2 Management at all levels should exercise day-to-day responsibility for health and safety. In order to draw up safe operational procedures for the transport and handling of dangerous goods, management should carry out an assessment of the risks involved. In certain cases a quantified risk assessment may be necessary.

10.5.1.2 Personnel (cargo interests, port operators and ships)

10.5.1.2.1 Every person engaged in the transport or handling of dangerous goods should receive training on the safe transport and handling of dangerous goods, commensurate with his responsibilities.

10.5.1.3 Shore-based personnel

Should receive general awareness/familiarization training, function-specific training and safety training

10.5.2 Training content

10.5.2.1 General awareness/familiarization training

10.5.2.1.1 Every person should receive training on the safe transport and handling of dangerous goods, commensurate with his duties. The training should be designed to provide familiarity with the general hazards of relevant dangerous goods and the legal requirements. Such training should include a description of the types and classes of dangerous goods; marking, labelling and placarding, packing, segregation and compatibility requirements; a description of the purpose and content of the transport documents; and a description of available emergency response documents.

10.5.2.2 Function-specific training

10.5.2.2.1 Every person should receive detailed training concerning specific requirements for the

10.5.2.2.2 transport and handling of dangerous goods which are applicable to the function that he performs.

10.5.2.3 Safety training

10.5.2.3.1 Each person should receive training commensurate with the risks in the event of a release of dangerous goods and the functions he performs, on:

10.5.2.3.2 Such training should be provided or verified upon employment in a position involving the transport or handling of dangerous goods and should be periodically supplemented with retraining, as deemed appropriate by the regulatory authority.

10.5.2.3.3 Records of all safety training undertaken should be kept by the employer and made available to the employee if requested.

10.6 Accident Prevention Policy

As Diler Port management, we are aware of that the operations realized in our port have the potential that will lead to accidents inherently. However, we believe all accidents may be prevented. Therefore, we undertake to manage operation ideally to protect subsontractors, visitors, neighbours and environment at the highest level through preventing accidents.

With the aim of preventinf accidents and mitigate the effects in the direction of DİLER PORT MANAGEMENT Quality Management Systems, as DİLER PORT, we will apply the POLICIES about

- taking high level security measures for human and environment around Port facility and procuring all resources for this purpose,
- making the risk evaluation based on quantitative anaysis related to ordinary and extraordinary operation and keeping these evaluations updated continuously with the purpose of determining and assessing accidents
- having performed the arrangements covering maintenance, repair and temporary stopping related to detected risks and preparation of requisite procedures
- following technological development and providing support required for continuous improving of security measures in facilities with the aim of preventing accidents and mitigate the effects
- making necesary arrangements required for design of new facility, process along with planned changes and having performed risk evaluations absolutely before realization and assessing acceptability
- determining emergencies that will be detected before with systmatic analysis, preparing emergency plans for these emegencies and reviewing with drills following realization of audit regularly
- tracking performance of system within the framework of procedures to evaluate conformity to the targets identified with Quality Management Systems, in case of failing to provide conformity, searching corrective activities
- evaluating efficiency and conformity of Quality Management Systems periodically and systematically, documentation, certification, performing review by us as top management and giving support for continuous improvement of Quality Management Systems
- employing the personnel who have knowledge, education and experience convenient for the positions that will affect safety and security of operational job processe wtihin organization,
- ensuring that our employees in charge develop themselves constantly by means of giving trainings,
- adhering to national and international law, regulation, bylaws and standards
- ensuring health and securities of employees, contractors, visitors and neighbours and protection of environment whereby preventing accidents and eliminating the effects systematically through taking necessary measures and searching potential incompatibilities with policy

AS MANAGEMENT AND ALL EMPLOYEES.

10.7 Hot Work Procedure

1. No permit is given for the hot works to be done aboard ship. However, in necessary cases, after taking permits in the direction of legal legislations by ship agency, it will be realized under the control of port facility.
2. Before starting to hot works and procedures in our port facility, written permit regarding applicability of hot works in question will be taken from port presidency. With abovementioned permit, the place where hot work and procedures will be performed and related details and additionally safety measures to be applied will be specified on Hot work form.
3. **Hot Work Form** covers the following and is addressed in the **F-ISG-032** Hot Work Permit Form.

a) with the aim of being sure about that the areas on which work is to be done is not a combustible and/or explosive environment and is not insufficient in terms of ventilation and oxygen, auditing frequently the area and adjacent areas where work is to be carried out including the tests applied by accredited testing organizations,

b) removing dangerous goods and other combustible materials from working area and adjacent areas (lime, sludge, residue and other combustible materials are included in the substances to be removed from the area in question)

c) protecting efficiently against accidental ignition of combustible building materials (i.e., girders, wooden partitions, floors, doors, wall and ceiling coatings)

ç) sealing and ensuring impermeability of open pipes, pipe transitions, valves, joints, gaps and open parts with the purpose of preventing spreading of flames, sparks and hot particles from working areas to adjacent areas or other areas

4. Permit of the hot work to be done and a plate on which the safety measures to be taken are written will be hanged in the working area and all entrances to the working area. Permit and safety measures should be readily visible and clearly understandable by everyone who will conduct hot works.
5. While doing hot works, attention should be paid to the following matters:

a) Controls will be carried out with the aim of confirming that existing conditions have not changed in the working environment.

b) While hot works are performed, at least one fire tube or other fire extinguishing equipment shall be made available for instant use with easy access together with all its apparatuses.

6. In the course of hot work and procedures, after their completion and during sufficient time after their completion, efficient fire control shall be made in the area on which hot work was conducted and adjacent areas where hazard may emerge owing to heat transfer.
7. It will always be considered that for additional, more detailed information and procedures pertaining to hot works and procedures it is necessary to refer particularly to the document “International Safety Guide for Oil Tankers and Terminals (ISGOTT).

Risk Assessment

Location of hot work:

Area / Location:

Special access restrictions (due to the task involving a specific welding type or the location being a hazardous area, confined space, etc):

Reason for hot work:

Work activity description:

Likely ignition source type(s): ☐ Flame (welding, soldering, brazing, etc) ☐ Spark or slag (grinding, cutting, friction tools, welding, etc) ☐ Hot Object (metal surface, plate, etc) ☐ Other:

Hazard identification, risk analysis and control measure selection: *Add an additional page if the space below is insufficient.*

Specific Hot Work Issues: (tick appropriate)	☐	The hot work is to be solely undertaken by a contracted party personnel and a detailed work method statement / risk assessment has been previously prepared, reviewed by is attached to this Form.	Attach documentation & proceed to Section 2 on the following page.
	☐	The hot work is to be solely undertaken by personnel as per the specific hot work issues detailed below.	Complete the Risk Assessment below.

Risk Assessment Guide

Step 1 – Consider Consequences

What are the consequences of this hazard occurring? Consider what is the most probable consequence (below) with respect to this work hazard.

Extreme	Multiple fatalities or permanent injuries
Critical	Single fatality or permanent injury
Major	Medical treatment or lost time injury
Minor	First aid treatment
Insignificant	Incident or near miss – no treatment

Step 2 – Consider Likelihood

What is the likelihood (below) of the hazard consequence in Step 1 occurring.

Almost Certain	Is expected to occur in most circumstances
Likely	Will probably occur at least once
Possible	Event might occur at some time
Unlikely / Rare	Event not expected to occur or only in exceptional circumstances

Step 3 – Calculate Risk

1. Take Step 1 rating and select the correct column.
2. Take Step 2 rating and select the correct line.
3. Use the risk score where the two ratings cross on the matrix below.

H = High, S = Serious, M = Medium, L = Low

Likelihood \ Consequences	Ins	Min	Maj	Crit	Ext
Almost Certain	M	S	H	H	H
Likely	M	M	S	H	H
Possible	L	M	M	S	S
Unlikely / Rare	L	L	M	M	S

Likelihood \ Consequences	Ins	Min	Maj	Crit	Ext
Almost Certain					
Likely					
Possible					
Unlikely / Rare					

Hazard (List the hazards relating to the work)	Controls (List the controls to manage each of the hazards)	Personal Protective Wears	Responsible Party (List the role, contractor, competency &/or prescribed occupation responsible for implementing the controls)	Risk Assessment (With controls in place: High, Serious, Medium or Low)

Risk Assessment Personnel:

Risk Assessment Completed by:

Name: Employer: Date:

Name: Employer: Date:

Section 2 – Hot Work Permit

As per the method of hot work and location described in *Section 1*, identify control requirements in the relevant parts below.

General Hot Work / Ignition Controls

Identify those general hot work and ignition controls required to be undertaken as part of the hot work: (identify as yes or not applicable)	Yes	NA	Control
	☐	☐	Fire extinguishers supplied by the workgroup / contractor are to be located immediately adjacent to the hot work area and within 10m (building / fixed location fire extinguishers are not to be relied upon)
	☐	☐	Catch mats or boards are to be positioned over grid-mesh, flooring, grates to catch sparks or slag
	☐	☐	Combustible and flammable materials or fuel sources are required to be cleared from the area (consider a 15m area around the hot work where practicable and include surfaces below & above the work area)
	☐	☐	Drains, cable racks, electrical cables and other heat/fire sensitive items are to be covered (consider a 15m area and use fireproof blankets, catch boards and approved covers as applicable)
	☐	☐	A water hose is to be run to the job location and primed ready for use (where appropriate for work locations outdoors and in areas clear of electrical equipment)
	☐	☐	A Fire Watcher is required to watch the area during and/or post work to monitor fire risk, sparks, slag, hot objects (consider for work that is arc welding, oxy-cutting or likely to present an ignition hazard post work, and for work in hazardous areas, in confined spaces, outdoors, in windy conditions): ☐ During Work, and/or ☐ Post Work for a time period of _____ minutes

Specific Hot Work / Ignition Controls	Yes	NA	If Yes, Include Additional Control Details to be Used:
The hot work is to be undertaken on or adjacent to plant that will require an isolation (such as services, pipes, tanks, pressure vessels)	☐	☐	
A fixed fire protection or detection system will need to be taken out of service (approval is required for the impairment and the Fire System Log Book is to be filled in – see also *BAC Authorisation* below; approval contacts include:	☐	☐	
The work area will require specific cleaning, purging, ventilating or pre-work atmospheric monitoring (due to flammable/explosive vapours, dusts, liquids or solid residues in the work area / location)	☐	☐	
The work area will require pre-work cleaning, stripping, surface preparation, or atmospheric monitoring during works (as a result of surfaces / coatings that may create harmful emissions when heated or cut)	☐	☐	
The nature of the work requires specific respiratory protection to be worn	☐	☐	
The nature of the work requires specific controls to be implemented to protect gas leads or other sensitive plant items involved in the work	☐	☐	
The hot work involves arc-welding whereby specific controls relating to ensuring electrical safety will be required	☐	☐	

Additional Hot Work Controls within Confined Spaces

☐ NA (Not Applicable)

Controls:	Yes	NA
Locate equipment outside the space where practicable (such as gas cylinders, hoses, etc unless involved with respiratory devices)	☐	☐
Extraction fan inlet is to be located as close as practicable to the contamination source	☐	☐
Contaminants are to be expelled from the space (so that they cannot be recirculated and will not harm other workers)	☐	☐
As arc-welding activities are to be suspended for substantial periods, power sources will need to be de-energised, electrodes removed from holders and holders placed so that accidental contact or arcing cannot occur	☐	☐
As gas welding/cutting activities are to be suspended for substantial periods, torch and cylinder valves are to be closed with the torch and hose connections removed from the space and depressurised	☐	☐

Completion Hot Work

☐ NA (Not Applicable)

Controls:	Yes	N/A
After the end of the job is controlled area for at least half an hour.	☐	☐
Field is checked for at least eight hours and one hour intervals.	☐	☐
There is no need to do control after hot working.	☐	☐

Permit Request:

Name: Signature: Date: Time:

Approved

Name: Signature: Date: Time:

10.8 10.8 Responsibilities of Personnel in Operation

10.8.1 10.8.1 Operation Officer

10.8.1.1 10.8.1.1 Acts according to the checklists in 10.9.

10.8.1.2 A coordination meeting will be held at least 1 day prior to the acceptance of dangerous goods to the port facility and the representatives of operation, Field planning, HSE unit, TMGD and other related persons shall participate to the meeting.

10.8.1.3 If a decision is taken at the meeting in favor of accepting the dangerous good, management, operation, storage, safety and emergency response departments shall be notified and the necessary preparations and acceptance process will be commenced.

10.8.1.4 If it is required to notify the Port authority, the situation shall be notified to the Port authority in writing by specifying the reasons.

10.8.1.5 Number of equipments and cranes, teams and shifts as well as the port to be used shall be specified at this meeting.

10.8.1.6 Organize the work order with the 2nd Cap.

10.8.1.7 Ensure that the cargo handling is made according to the approved cargo plan With the Planning Specialist

10.8.1.8 Every person engaged in the handling of dangerous goods exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.

10.8.1.9 Whilst dangerous goods are being handled, precautions are taken to prevent unauthorized access to handling areas.

10.8.1.10 If there is any loss of containment of dangerous goods, every practical step is taken to minimize risks to persons and adverse effects to the environment.

10.8.1.11 Wrappings and packaging to be used in the activities of changing of cargo transport units, repair thereof or placing of the damaged packages inside the saving packages should be in accordance with the structure of dangerous materials and they shall be produced and certified as they are set out in chapter 6 of the IMDG Code

10.8.1.12 Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.

10.8.1.13 If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.

10.8.1.14 During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

10.8.1.15 At the areas where solid bulk dangerous goods releasing poisonous or flammable gases are handled, periodic controls will be conducted for measuring poisonous or flammable gas concentrations as well as their probable dissemination and the precautions taken will be recorded.

10.8.2 Shift Supervisor

10.8.2.1 Acts according to the checklists in 10.9.

10.8.2.2 The personnel equipped with the necessary protective equipment check before the operation.

10.8.2.3 Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit and people in charge will pay necessary attention with respect to this issue.

10.8.2.4 The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.

10.8.2.5 The shift superintendent will be responsible from controlling the work security, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.

10.8.2.6 Organize the work order with the 2nd Cap.

10.8.2.7 Ensure that the cargo handling is made according to the approved cargo plan.

10.8.2.8 Performs the necessary separation according to the classes of dangerous loads.

10.8.2.9 Every person engaged in the handling of dangerous goods exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.

10.8.2.10 Whilst dangerous goods are being handled, precautions are taken to prevent unauthorized access to handling areas.

10.8.2.11 If there is any loss of containment of dangerous goods, every practical step is taken to minimize risks to persons and adverse effects to the environment.

10.8.2.12 Wrappings and packaging to be used in the activities of changing of cargo transport units, repair thereof or placing of the damaged packages inside the saving packages should be in accordance with the structure of dangerous materials and they shall be produced and certified as they are set out in chapter 6 of the IMDG Code

10.8.2.13 Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.

10.8.2.14 If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.

10.8.2.15 During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

10.8.2.16 At the areas where solid bulk dangerous goods releasing poisonous or flammable gases are handled, periodic controls will be conducted for measuring poisonous or flammable gas concentrations as well as their probable dissemination and the precautions taken will be recorded.

10.8.2.17 Water balls should be place in vicinity of areas where dangerous materials like coal, which have spontaneous combustion but not affected by water, are stored and watering works should be carried out in a way to avoid combustion. It will be considered if there is a drainage system for collecting the polluted water in the environment when the temporary storage area is announced.

10.8.3 HSE Responsibility

10.8.3.1 Acts according to the checklists in 10.9.

10.8.3.2 The worker at the operation informs about the danger of load and equips it with the necessary protective equipment.

10.8.3.3 Environmental safety is ensured.

10.8.3.4 Ensure that personnel are not dutied in the ship's warehouse or on the ground before gas measurements are made.

10.8.3.5 Take necessary fire precautions and control system operation.

10.8.3.6 Controls the presence of the required warning and warning signs.

10.8.3.7 Wrappings and packaging to be used in the activities of changing of cargo transport units, repair thereof or placing of the damaged packages inside the saving packages should be in accordance with the structure of dangerous materials and they shall be produced and certified as they are set out in chapter 6 of the IMDG Code

10.8.3.8 Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.

10.8.3.9 If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.

10.8.3.10 During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

10.8.3.11 At the areas where solid bulk dangerous goods releasing poisonous or flammable gases are handled, periodic controls will be conducted for measuring poisonous or flammable gas concentrations as well as their probable dissemination and the precautions taken will be recorded.

10.8.3.12 Water balls should be place in vicinity of areas where dangerous materials like coal, which have spontaneous combustion but not affected by water, are stored and watering works should be carried out in a way to avoid combustion. It will be considered if there is a drainage system for collecting the polluted water in the environment when the temporary storage area is announced.

10.9 Safe Handling of Dangerous Goods Operation Procedure Checklist

GENERAL

S.NO	Eylem	SEÇ	OP. SOR	VAR. AMR.
	YÜKÜN KABULU			
1.	A coordination meeting will be held at least 1 day prior to the acceptance of dangerous goods to the port facility	X	X	
2.	The MSDS form about load is provided.		X	
3.	A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods and marine pollutants on board, may be used in place of such a special list or manifest. (IMO FAL form 7)		X	
4.	The Certificate of Conformity for the ship carrying the dangerous goods will be checked.		X	
5.	Approved cargo handling / evacuation plan requested		X	
6.	The dangerous good (s) to be accepted to the port: 1. Risk arising from dangerous good 2. Interaction with dangerous goods existing at the port facility, 3. Interaction with cargoes planned to be accepted to the port facility in the near future, 4. Conditions for stowage 5. Conditions for segregation 6. Requirement of materials and equipment with respect to emergency response 7. Sufficiency of emergency response equipments 8. Interaction with the neighboring area (s) The issues mentioned herein above will be discussed within the scope of current IMDG CODE documents and a management decision for accepting/rejecting will be taken.		X	
7.	If a decision is taken at the meeting in favor of accepting the dangerous good, management, operation, storage, safety and emergency response departments shall be notified and the necessary preparations and acceptance process will be commenced.		X	
8.	Number of equipments and cranes, teams and shifts and pier shall be specified.		X	
9.	The personnel who will work in the operation will be provided with information as regards the risks of the cargo and they will be equipped with the necessary protective outfit.		X	
10.	Required warnings, warning signs are provided around the area being handled.		X	
P.S. : In standard handled loads, meeting is optional. Previous meeting resolutions may apply.				

Safe Handling of Packaged Dangerous Goods Operation Procedure Checklist

Loading or unloading of packaged dangerous goods will be made direct delivery plan at the berths within our port facility

S.NO	Eylem	SEÇ	OP. SOR	VAR. AMR.
	ELLEÇLEME			
1.	Environmental safety is provided by HSE. Until the gas measurements are made, personnel are not assigned to the ship's shelter and to the field.	X	X	X
2.	Controlling the work safety, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.		X	X
3.	Working order will be organized through the berth operator, shift supervisor and chief officer of the ship. Berth operator ensures the realization of loading or unloading as per the cargo plan. The responsibility of loading and unloading as per the cargo plan belongs to the Berth Operator.		X	X
4.	Packages containing Class 4.3 dangerous substances which, in contact with water, emit flammable gases and cargo transport units containing these types of packages will be stored at closed areas which are not affected from factors like rain, sea water and etc..	X	X	X
5.	It is checked that the communication equipment used in the operation area is exprof.	X	X	X
6.	The master and port authority will supervise the transport of dangerous goods within their respective areas of responsibility while the shift superintendent or the berth operator will ensure performance of proceedings in line with the risks related to the cargo and they shall notify the master regarding steps to be taken in emergency cases. Shift supervisor / Operation supervisor will coordinate with the 2nd Captain.		X	X
7.	Information on emergency procedures will be given to the person responsible for the ship and cargo handling	X		
8.	Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit and people in charge will pay necessary attention with respect to this issue.		X	X
9.	The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.		X	X
10	Dangerous goods are being handled, precautions are taken to prevent unauthorized access to handling areas.	X	X	X

Safe Handling of Solid Dangerous Goods Operation Procedure Checklist

Loading or unloading of solid dangerous goods will be made direct delivery plan at the berths within our port facility

S.NO	Eylem	SEÇ	OP. SOR	VAR. AMR.
	ELLEÇLEME			
1.	Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit. After loading the trucks will surely top off.	X	X	X
2.	The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.	X	X	X
3.	Controlling the work safety, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.			X
4.	Loading and unloading in accordance with the cargo plan		X	X
5.	If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.	X	X	X
6.	Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.	X	X	X
7.	Dangerous areas, where handling is done in line with the risks of the dangerous good, are determined, regulatory authority's buildings, other facility near the facility, the types of cargo handled at these facilities and features of other cargo which are temporarily stored and handled at the facility, and the fastest and the safest access opportunities as to emergency responses will be taken into consideration.	X	X	X
8.	At the areas where solid bulk dangerous goods releasing poisonous or flammable gases are handled, periodic controls will be conducted for measuring poisonous or flammable gas concentrations as well as their probable dissemination and the precautions taken will be recorded	X		
9.	Water balls should be place in vicinity of areas where dangerous materials like coal, which have spontaneous combustion but not affected by water, are stored and watering works should be carried out in a way to avoid combustion. It will be considered if there is a drainage system for collecting the polluted water in the environment when the temporary storage area is announced.	X	X	X
10.	Canvas to be used for avoiding the solid bulk dangerous goods from falling to the sea during evacuation or while loading to the ship, will be kept between the ship and the port during the operations.	X	X	X
11.	The master who will load/unload the solid bulk dangerous goods will receive the detailed loading or unloading plan which includes details as to the position and quantity of the cargo in the ship from the berth operator prior to the beginning to loading or unloading process. An agreement shall be reached between the master and the berth operator as to the said loading or unloading plan.		X	X

10.10 10.9 EmS (Emergency Procedures for Ships carrying Dangerous Goods) and MFAG (Medical First Aid Guide)

In emergencies, it is important to use IMSBC, IBC or IGC Codes for bulk cargo as well as all available IMDG Code, EMS and MFAG information.

10.10.1 EmS

EmS contains procedures for the actions that can be taken if there is a fire or spill of dangerous goods.

It contains general procedures applicable to an entire substance class as well as procedures specific to certain products.

Necessary protective equipment and the types of extinguishing agents that can be used to put out fires involving dangerous goods can be found from the EmS Guide “in cases of emergency action”.

EmS is divided into EmS for fires and EmS for spills. There will be EmS numbers for every UN number in column 15 of the Dangerous Goods List. EmS number does not have to be specified in the Dangerous Goods Declaration.

Additionally, EmS Guide including the emergency response procedures for ships carrying dangerous goods is annexed.

10.10.2 MFAG

MFAG table numbers do not have to be stated on the Dangerous Goods Declaration.

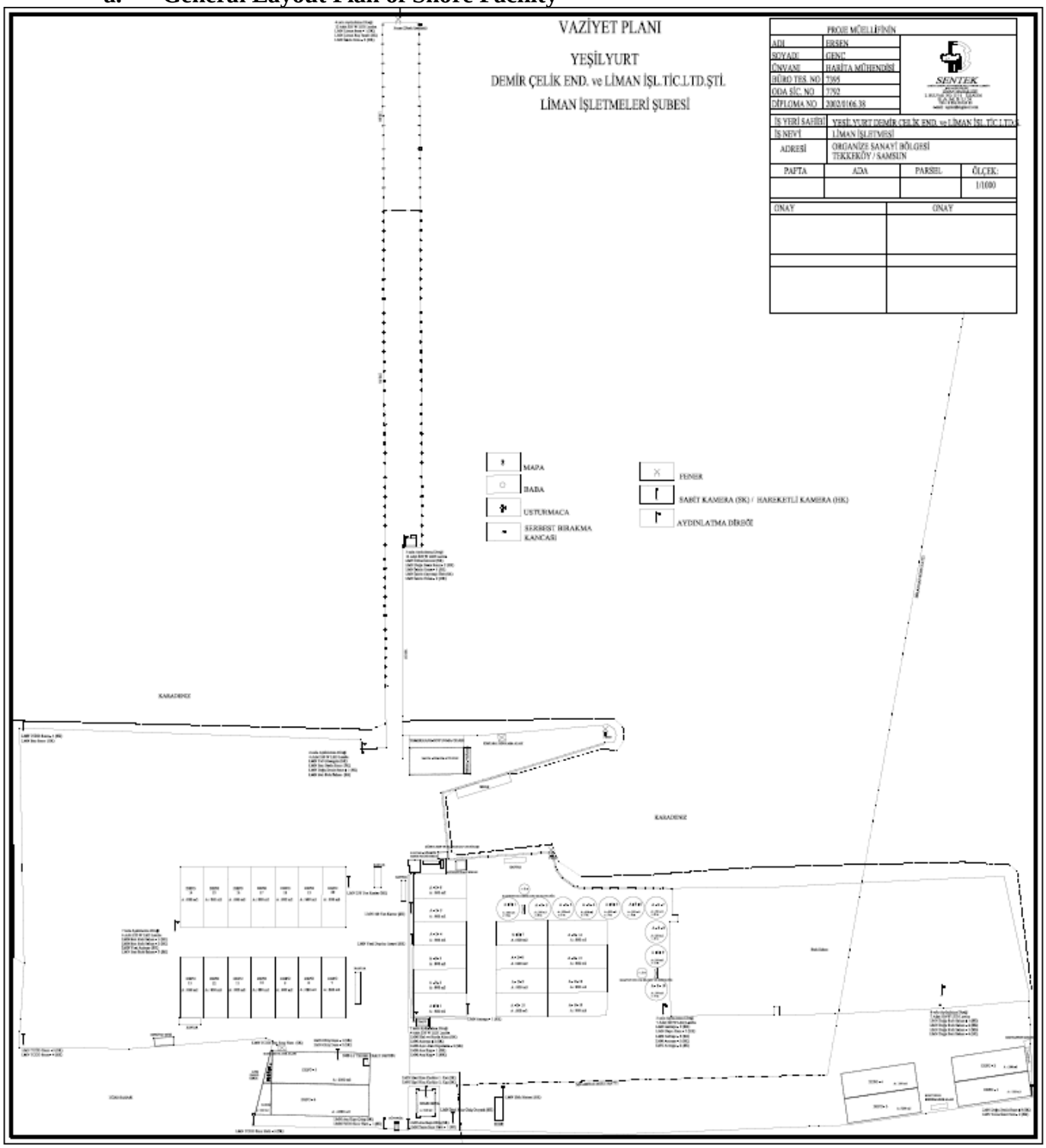
MFAG consists of a flow chart which shows what actions should be taken, based on the situation and symptoms, when a person has been exposed to dangerous goods of some kind. However, it is important that the person has been trained to use MFAG in advance so that it will work in an emergency.

Workers should also get in touch with a doctor to get assistance for treating an injured person.

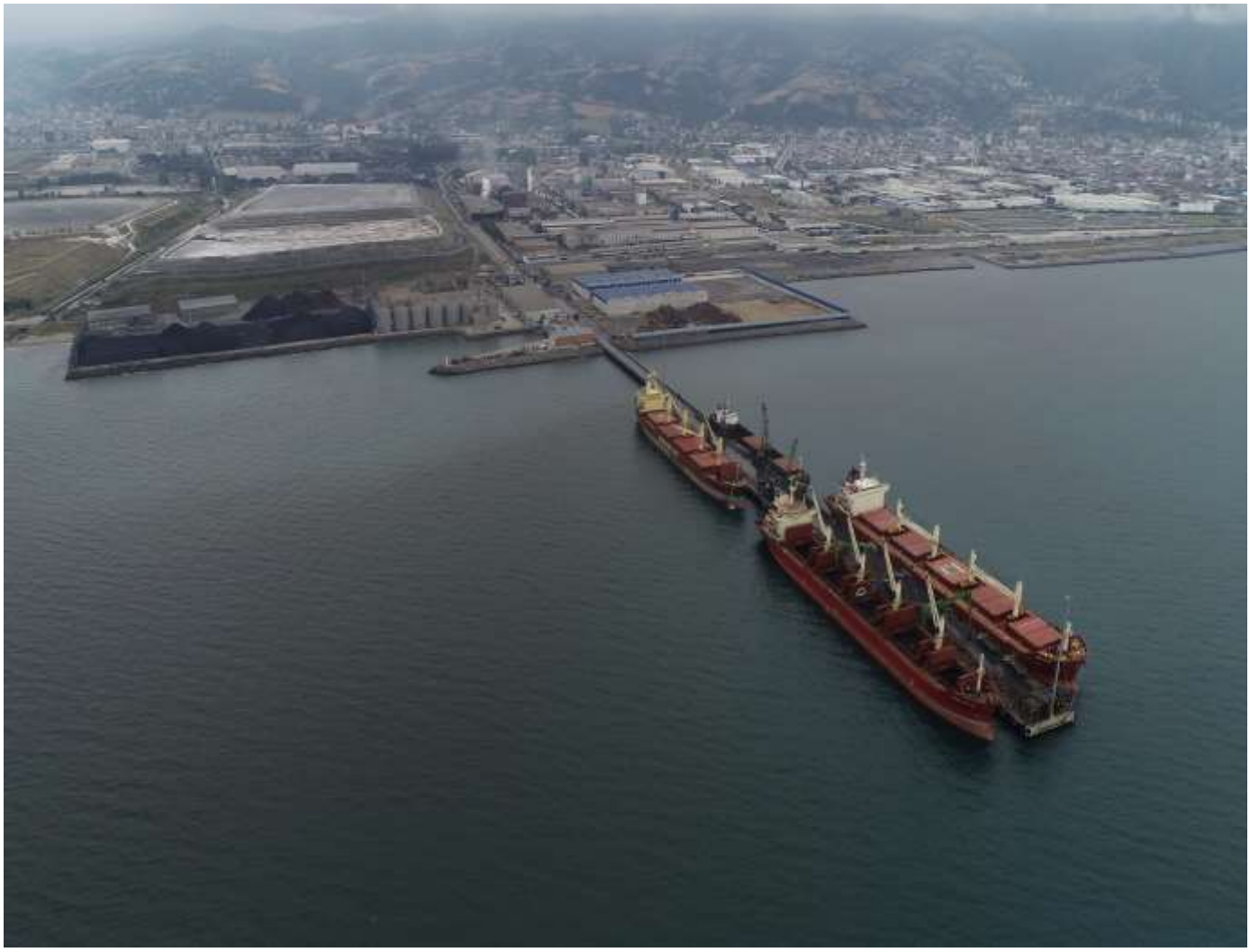
Additionally, Medical First Aid Guide (MFAG) to be referred to in accidents including those caused by dangerous goods is annexed.

11 ANNEXES

a. General Layout Plan of Shore Facility



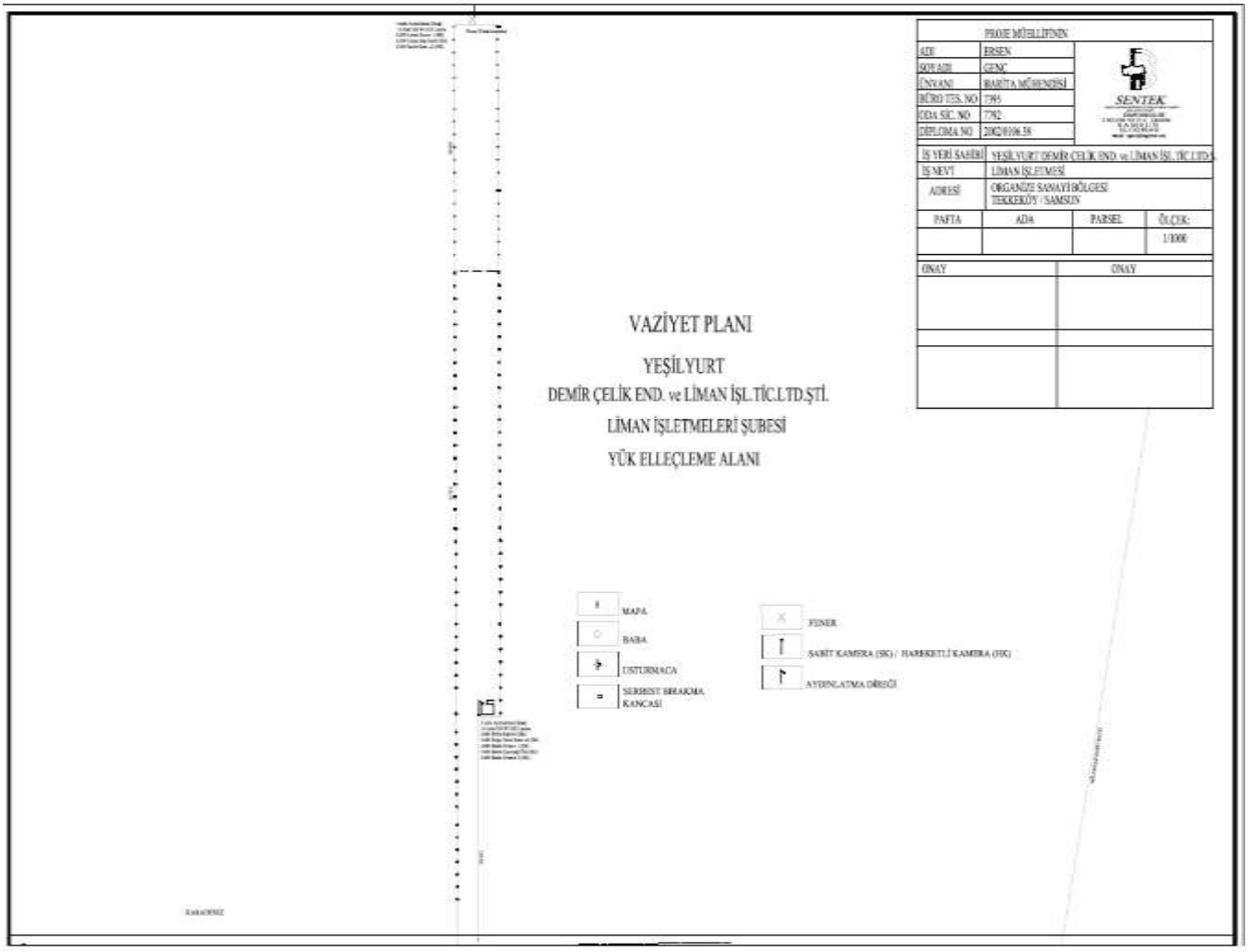
b. Photograph of General View of Shore Facility



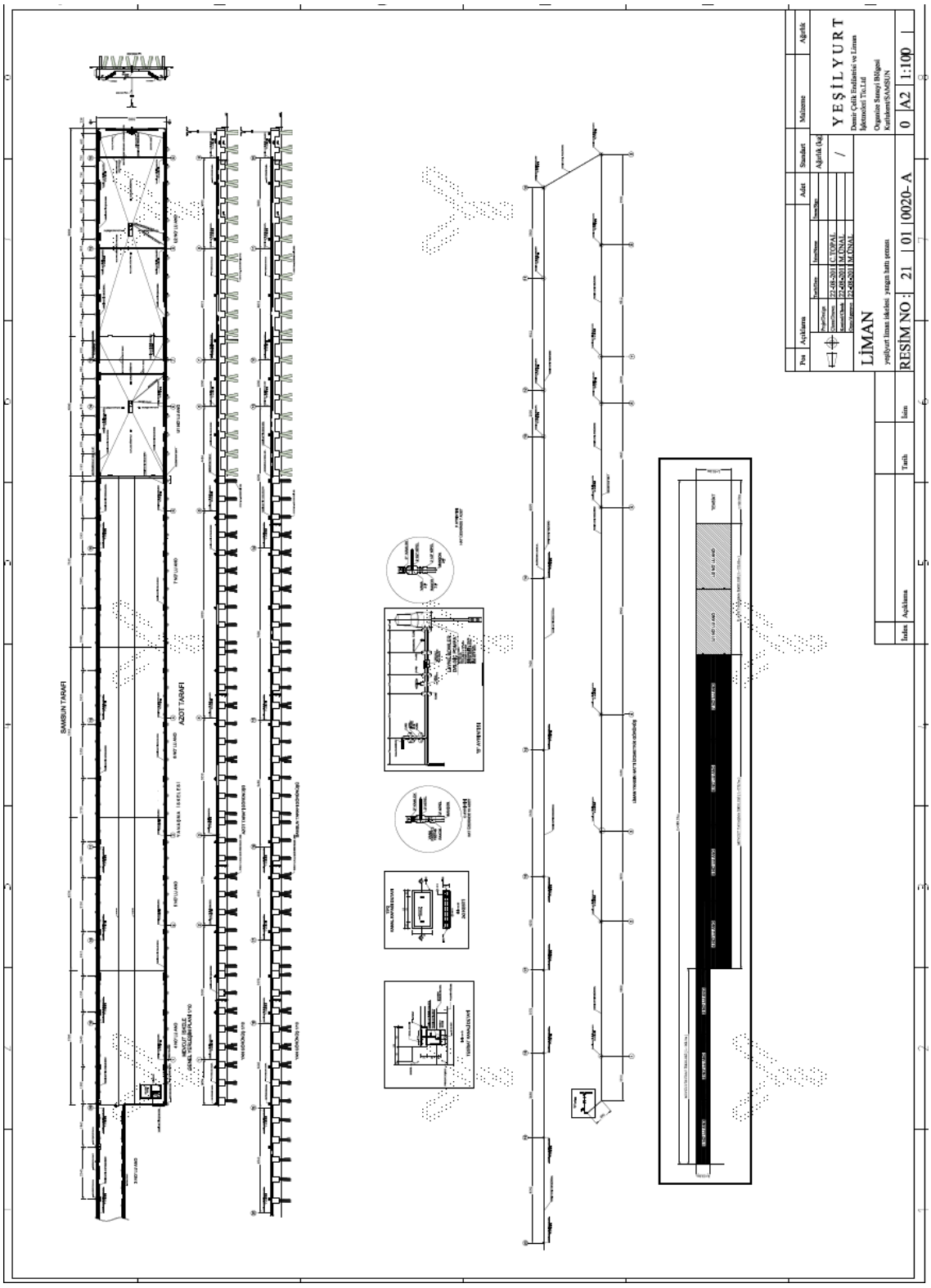
c. Emergency Contact Points and Information

FIRE CALL – FIRE DEPARTMENT	**110**
EMERGENCY MEDICAL SERVICES	**112**
POLICE	**155**
GENDARMERIE	**156**
COAST GUARD	**158**
ENVIRONMENT CALL CENTRE	**181**
GOVERNOR'S OFFICE	**179**

d. General Layout Plan of Areas Where Dangerous Goods are Handled



e. Fire Plan of Areas Where Dangerous Goods are Handled



f. General Fire Plan of the Facility

According to Article 11.5.

g. Emergency Plan

This plan is maintained as a separate document in the shore facility, and it is renewed every 3 years. Emergency Plan details are as follows:

1. Emergency procedures,
2. Emergency response organizational chart,
3. Name, title and contact information of person/organization that prepared the emergency procedures,
4. Name, title and contact information of the person appointed to coordinate the response activities in possible emergencies in the shore facility, as well as his/her duties and responsibilities,
5. Name, title and contact information of the responsible facility officer who will contact the Port Authority and other relevant institutions and organization in emergencies, as well as his/her duties and responsibilities,
6. Names and duties of teams established for emergency response, as well as names and responsibilities of the personnel assigned to these teams,
7. Qualifications and capacities of the sources, equipment and devices that the shore facility will employ for emergency response,
8. Precautions and actions to be taken to keep under control any foreseeable serious conditions that may result in emergencies and to keep their possible adverse effects to minimum, and the existing resources, abilities and capacity of the facility for such purpose,
9. Characteristics and the announcement method of precautions that must be taken and the warnings that must be given to prevent or to minimize any risks towards persons present at the shore facility during an emergency, and regulations setting forth what persons should do in case of warning,
10. Procedures for first notification to the Port Authority in emergencies, and the informative content of such notification, as well as procedures related to the submission of any newly acquired information to the Port Authority,
11. Trainings that should be received by any personnel who will serve during emergencies,
12. Methods of coordinating with emergency teams outside the shore facility in emergencies,
13. Characteristics and frequency of drills against emergencies,
14. Regulations to support precautions taken in emergencies outside the facility,
15. Emergency plans cover each emergency listed below:

    a) Facility, equipment and field fires,

    b) Cargo fires related to each dangerous goods class and sub hazard class permitted to be handled at the port,

    c) Ship fires,

    ç) Explosion,

    d) Accidental death and serious injury,

    e) Natural disasters such as earthquakes, landslides, tsunami waves,

    f) Adverse weather conditions such as very strong winds, storms, excessive snow or icing,

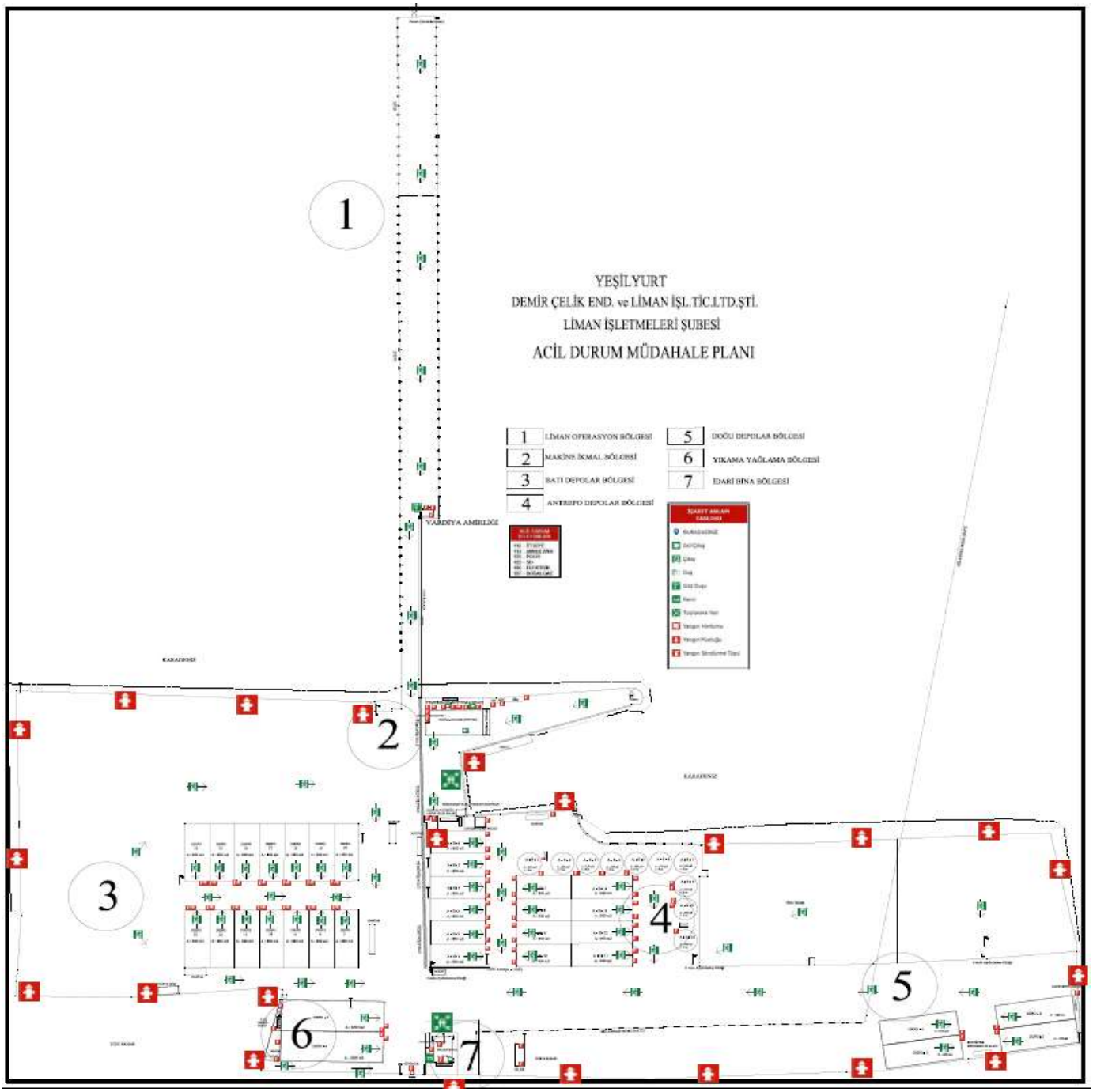
    g) Leakage, flow or spillage of dangerous goods of each dangerous goods class and sub hazard class permitted to be handled at the port,

    ğ) Marine pollution (e.g. oil/fuel leakage or spillage/falling to the sea of dangerous goods or environmentally hazardous substances),

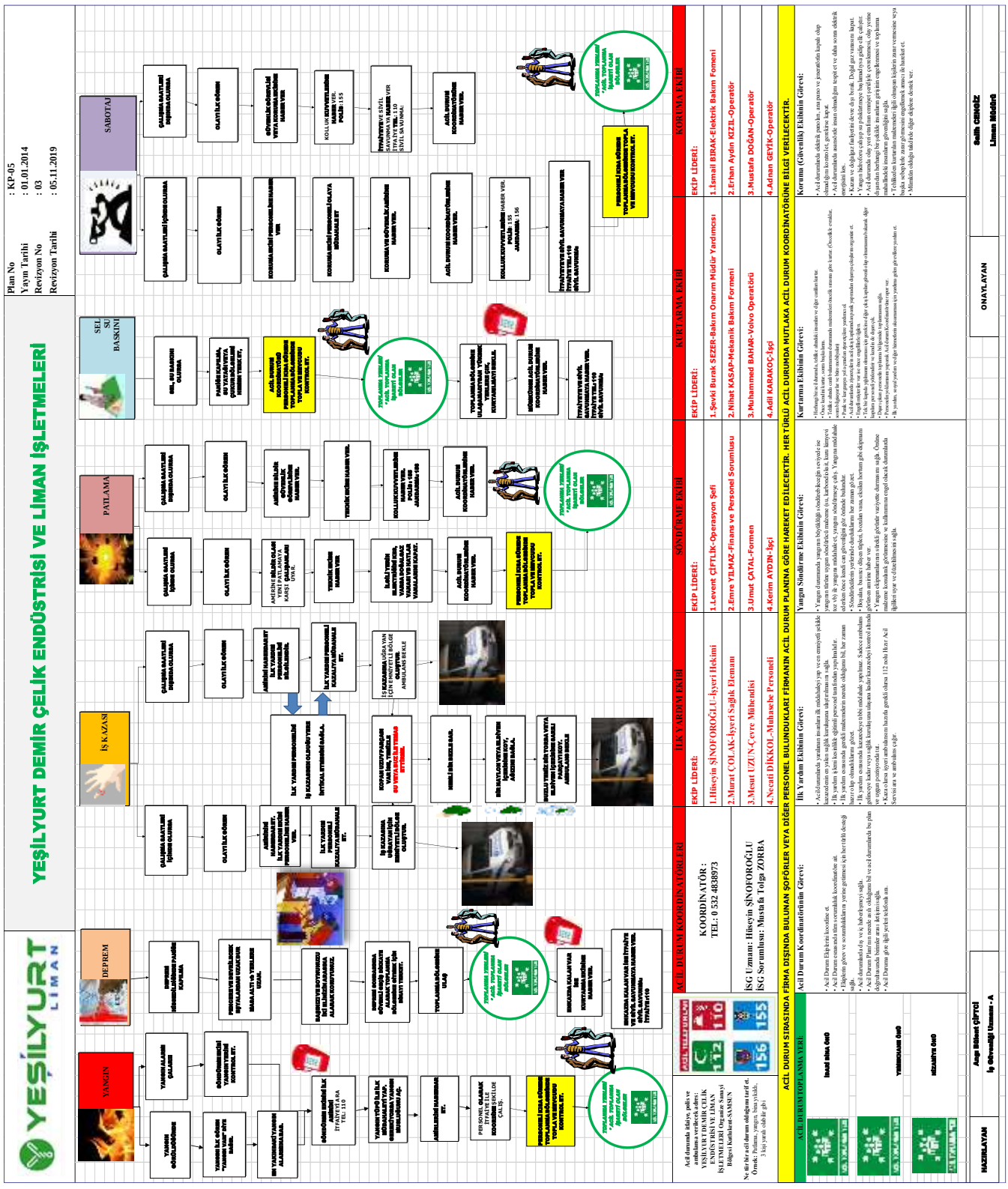
    h) Gas leakages,

    ı) Power outage.

h. Plan of Emergency Assembly Areas



i. Emergency Management Chart



j. Dangerous Goods Handbook

Relevant handbook has been distributed to the relevant Port Authority and relevant personnel.

k. Leakage Areas and Equipment for CTU and Packages, Entry/Exit Drawings

Entry to /exit from leakage areas for CTU and packages are shown on the layout plan.

l. Inventory of Port Service Ships

Pilotage is provided by Sanmar.
Towage is provided by Med Marine.

m. Sea Coordinates of the Port Authority's Administrative Boundaries, Anchorage Areas, Pilot Embarking/Disembarking Spots

A) Port Administrative Area Boundaries

Port administrative area of Samsun Port Authority is the sea and land area in between the line drawn from the coordinates below to true north, which is bordered by adjacent Turkish Territorial Waters.

a) 41º 15' 45" N – 037º 01' 30" E (Çaltı Cape)

b) 41º 44' 24" N – 035º 57' 36" E

B) Anchorage Areas

a) Anchorage area no. 1: Anchorage area for ships smaller than 1000 GT is the sea area established by the coordinates below.

1) 41º 17' 54" N – 036º 20' 24" E
2) 41º 17' 54" N – 036º 20' 36" E
3) 41º 17' 36" N – 036º 20' 33" E
4) 41º 17' 36" N – 036º 20' 42" E

b) Anchorage area no. 2: Anchorage area for ships smaller than 5000 GT that do not carry dangerous goods and for military ships is the sea area established by the coordinates below.

1) 41° 18' 09" N - 036° 21' 06" E
2) 41° 18' 09" N - 036° 21' 45" E
3) 41° 17' 00" N - 036° 21' 39" E
4) 41° 17' 00" N - 036° 23' 00" E

c) Anchorage area no. 3: Anchorage area for ships larger than 5000 GT that do not carry dangerous goods and for military ships is the sea area established by the coordinates below.

1) 41° 21' 00" N - 036° 21' 00" E
2) 41° 21' 00" N - 036° 22' 00" E
3) 41° 19' 36" N - 036° 21' 00" E
4) 41° 19' 18" N - 036° 22' 00" E

ç) Anchorage area no. 4: Anchorage area for ships carrying dangerous goods, for nuclear-powered military ships, for ships to be quarantined, and for ships to be subjected to degasification is the sea area established by the coordinates below.

1) 41° 17' 36" N - 036° 23' 48" E
2) 41° 17' 36" N - 036° 28' 00" E
3) 41° 19' 36" N - 036° 23' 48" E
4) 41° 19' 36" N - 036° 28' 00" E

C) Pilot Embarking/Disembarking Spots

1) 41º 18' 22" N – 036º 21' 42" E

2) 41º 16' 12" N – 036º 26' 30" E

n. Emergency Response Equipment in the Port Facility Against Marine Pollution

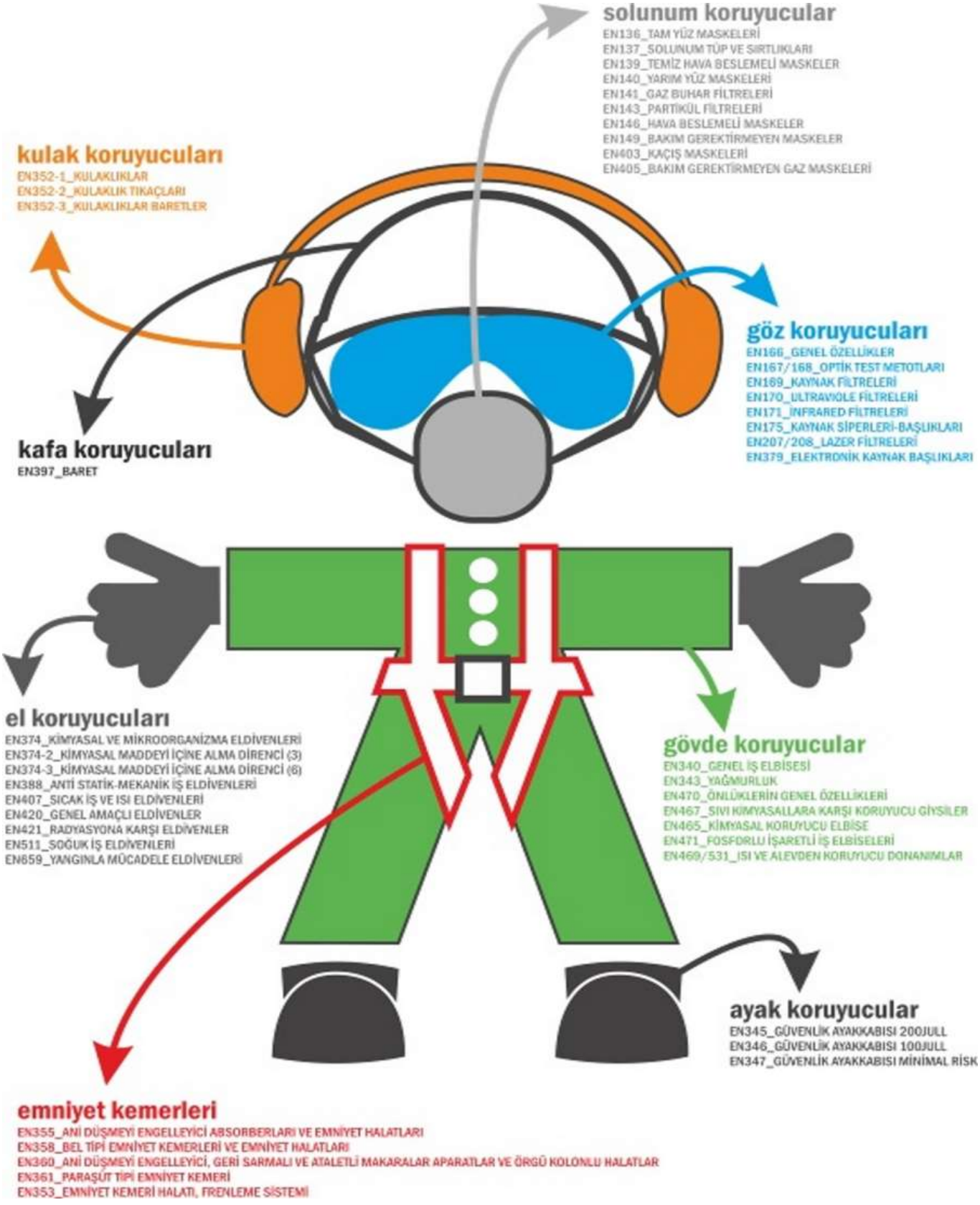
This is as per the Approved Emergency Response Plan Against Marine Pollution, and it is provided by Most Denizcilik.

MOST DENİZCİLİK EİPMAN LİSTESİ			
Sıra No	Ekipman	Adet	Durumu
1	Bariyer(m) Dolgu Tipi	600	Faal
2	Skimmer	1	Faal
3	Yüzer Tank 15 m3	3	Faal
4	Sorbent Bariyer(m)	1900	Faal
5	Sorbent Pad	4500	Faal
6	Geçici Depolama Tankı	1	Faal
7	Konteyner	6	Faal
8	Baret İthal CE' li	20	Faal
9	Yağmurluk	40	Faal
10	Kimyasal Çizme, Çelik Burunlu	40	Faal
11	Kimyasal Eldiven, Kısa CE'li	45	Faal
12	Kimyasal Eldiven, Uzun CE'li	45	Faal
13	Yarım Yüz Maske	35	Faal
14	Yarım Yüz Maske Filtresi	80	Faal
15	Koruyucu Gözlük	80	Faal
16	Fener Ex-Proof	15	Faal
17	Plastik Kutu	7	Faal
18	Naylon Poşet	150	Faal
19	Etiket	100	Faal
20	Naylon Muşamba(m)	380	Faal
21	Güvenlik Şeridi	4	Faal
22	El Arabası	15	Faal
23	Kazma	10	Faal
24	Kürek	20	Faal
25	Tırmık	20	Faal
26	Plastik Kova 10 lt	15	Faal
27	Plastik Varil 120 lt	9	Faal
28	Ecza Dolabı	5	Faal
29	Can Yeleği Spor Tip CE' li	15	Faal
30	Can Yeleği Otomatik Şişme Yelek Tip	10	Faal
31	Gaz Ölçüm Cihazı O2-LEL-H2S-CO Sensörlü	3	Faal
32	Saplı Ağ Kepçe	1	Faal
33	Metal Korumalı Benzin Bidonu	2	Faal
34	Soğuk Sıcak Yıkama Jeti	1	Faal
35	Bariyer Koruma Brandası	2	Faal
36	Oksijen hava Tüplü, Taşıma Sırtlığı	1	Faal
37	Kimyasal Yanmaz Elbise	1	Faal
38	Bariyer Tamir Kiti	1	Faal
39	Yangın Söndürme Tüpü 9 kg'lık	2	Faal
40	Nebai Halat	150	Faal
41	Sahil Bariyeri(12,5 m)	5	Faal
42	Şamandıra	10	Faal
43	Transfer Hortumu	2	Faal
44	Bariyer Çekme Başlığı	6	Faal
45	Çapa Büyük Boy-Küçük Boy	4+2	Faal
46	Dış Aydınlatma Lambası	2	Faal
47	Güç Ünitesi	1	Faal
48	Tek Kullanımlık Beyaz Elbise	30	Faal

o. Personal Protective Equipment (PPE) Usage Chart

KKD CİNSİ	KULLANIM MECBURİYET ALANI	ÖZELLİK	İŞARET
BARET	TÜM İŞLETME SAHALARINDA ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSKE VE BÖLGEYE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	
BURUN KORUMALI İŞ AYAKKABISI	TÜM İŞLETME SAHALARINDA ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSKE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	
İŞ ELBİSESİ	TÜM İŞLETME SAHALARINDA ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSKE UYGUN ÖZELLİKLERE VE KORUYUCU ÖZELLİKLERE GÖRE BELİRLENMİŞ	
İŞ GÖZLÜĞÜ	HADDEHANE TÜM KAPALI ÜRETİM SAHASINDA, DİĞER BİRİMLERDDE; KİMYASAL SIÇRAMA, UÇUŞAN PARÇALAR, ISI, GÜÇLÜ IŞIK VEYA UV TAYFININ BULUNDUĞU YERLERDE ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSK VE BÖLGEYE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	
PARAŞÜTCÜ TİPİ EMNİYET KEMERİ	1,5 METRE ÜZERİNDE YAPILAN TÜM ÇALIŞMALARDA ZORUNLUDUR		
İŞ ELDİVENİ	ÇALIŞMA ESNASINDA VE ÇALIŞMA ORTAMINDA BULUNULDUĞU ESNADA KULLANIMI ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSKE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	
TOZ MASKESİ	TÜM TOZLU ORTAMLARDA KULLANIMI ZORUNLUDUR	PERSONEL ÇALIŞTIĞI İŞE RİSK VE BÖLGEYE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	
KULAKLIK	TÜM GÜRÜLTÜLÜ ORTAMLARDA KULLANIMI ZORUNLUDUR		
TAM/YARIM YÜZ VİZÖRÜ	SICAK PARÇA SIÇRAMA, YOĞUN UÇUŞAN PARÇALARIN BULUNDUĞU YERLERDE ZORUNLUDUR	BARETE TAKILABİLİR, PERSONELİN ÇALIŞTIĞI İŞE VE RİSKE UYGUN ÖZELLİKLERE GÖRE BELİRLENMİŞ	

*ÖZEL OLARAK BELİRTİLMEYEN DONANIMLARIN KULLANIM YERLERİ; UYARI İKAZ LEVHALARI RİSK BÖLGELERİNDE VE/VEYA TALİMATLARDA BULUNMAKTADIR.


solunum koruyucular
EN136_TAM YÜZ MASKELERİ
EN137_SOLUNUM TÜP VE SIRTLIKLARI
EN139_TEMİZ HAVA BESLEMELİ MASKELER
EN140_YARIM YÜZ MASKELERİ
EN141_GAZ BUHAR FİLTRELERİ
EN143_PARTİKÜL FİLTRELERİ
EN146_HAVA BESLEMELİ MASKELER
EN149_BAKIM GEREKTİRMEYEN MASKELER
EN403_KAÇIŞ MASKELERİ
EN405_BAKIM GEREKTİRMEYEN GAZ MASKELERİ
kulak koruyucuları
EN352-1_KULAKLIKLAR
EN352-2_KULAKLIK TIKAÇLARI
EN352-3_KULAKLIKLAR BARETLER
göz koruyucuları
EN166_GENEL ÖZELLİKLER
EN167/168_OPTİK TEST METOTLARI
EN169_KAYNAK FİLTRELERİ
EN170_ULTRAVİOLE FİLTRELERİ
EN171_İNFRARED FİLTRELERİ
EN175_KAYNAK SİPERLERİ-BAŞLIKLARI
EN207/208_LAZER FİLTRELERİ
EN379_ELEKTRONİK KAYNAK BAŞLIKLARI
kafa koruyucuları
EN397_BARET
el koruyucuları
EN374_KİMYASAL VE MİKROORGANİZMA ELDİVENLERİ
EN374-2_KİMYASAL MADDEYİ İÇİNE ALMA DİRENCİ (3)
EN374-3_KİMYASAL MADDEYİ İÇİNE ALMA DİRENCİ (6)
EN388_ANTİ STATİK-MEKANİK İŞ ELDİVENLERİ
EN407_SICAK İŞ VE ISI ELDİVENLERİ
EN420_GENEL AMAÇLI ELDİVENLER
EN421_RADYASYONA KARŞI ELDİVENLER
EN511_SOĞUK İŞ ELDİVENLERİ
EN659_YANGINLA MÜCADELE ELDİVENLERİ
gövde koruyucular
EN340_GENEL İŞ ELBİSESİ
EN343_YAĞMURLUK
EN470_ÖNLÜKLERİN GENEL ÖZELLİKLERİ
EN467_SIVI KİMYASALLARA KARŞI KORUYUCU GİYSİLER
EN465_KİMYASAL KORUYUCU ELBİSE
EN471_FOSFORLU İŞARETLİ İŞ ELBİSELERİ
EN469/531_ISI VE ALEVDEN KORUYUCU DONANIMLAR
ayak koruyucular
EN345_GÜVENLİK AYAKKABISI 200JULL
EN346_GÜVENLİK AYAKKABISI 100JULL
EN347_GÜVENLİK AYAKKABISI MİNİMAL RİSK
emniyet kemerleri
EN355_ANİ DÜŞMEYİ ENGELLEYİCİ ABSORBERLARI VE EMNİYET HALATLARI
EN358_BEL TİPİ EMNİYET KEMERLERİ VE EMNİYET HALATLARI
EN360_ANİ DÜŞMEYİ ENGELLEYİCİ, GERİ SARMALI VE ATALETLİ MAKARALAR APARATLAR VE ÖRGÜ KOLONLU HALATLAR
EN361_PARAŞÜT TİPİ EMNİYET KEMERİ
EN353_EMNİYET KEMERİ HALATI, FRENLEME SİSTEMİ

p. Dangerous Goods Incidents Notification Form

Item no. – Date		
Company / Institution		
Submitted by		**CONTACT INFO**
Reference		

PORT FACILITY
"DANGEROUS GOODS INCIDENT NOTIFICATION"

DATE:

1. Time of accident,
2. How the accident happened, and its reason,
3. Place of accident (shore facility and/or ship); position and impact zone of accident; if involved in the accident, ship information (name, ensign, IMO no., shipowner, operator, its cargo with amounts, master's name and similar information)
4. Meteorological conditions,
5. UN number and proper shipping name of the dangerous good (based on the legislation stipulated in the definition of the dangerous good) and its amount, **Hazard class and division (if any) of the dangerous good,** **Packaging group of the dangerous good (if any),** **Additional risks (if any) of the dangerous good, such as marine pollutant,** **Sign and label details of the dangerous good,** **Characteristics and the number of packaging, cargo transport unit and container by which the dangerous good is transported (if any),** **Producer, sender, carrier and buyer of the dangerous good.**
6. Extent of harm/pollution,
7. Number of deaths and injuries in the accident (if any),
8. Description of the response to the accident,
9. Help requested from which organization,
10. Other ships or neighbouring facilities that may be affected by the accident,
FROM PREPARED BY : **Name & Surname :** **Duty :** **Signature :**

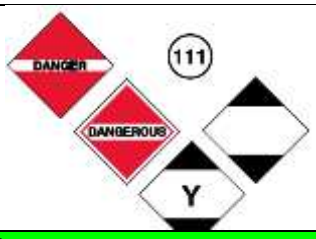
q. Control Results Notification Form for Dangerous Goods Cargo Transport Units (CTU's)

The form including the CTU control results, which is requested to be submitted to the Port Authorities in three-month periods by the administration is below:

Yıl / Dönem .... /	Sayı	Yüzdelik
Kontrol edilen paketler:		
Kusurlu paketler: . toplam . yurt içinde doldurulmuş . yurt dışında doldurulmuş		
Kusurlar:		
Dokümantasyon: . Tehlikeli Yük Deklarasyonu . Konteyner/Araç Paketleme Sertifikası		
Plakalama ve markalama		
Konteyner Güvenlik Sözleşmesi onay levhası		
Ciddi yapısal kusurlar		
Kara tankerleri bağlama eklentileri		
Taşınabilir tank veya kara tankerleri *(uygunsuz veya hasarlı)*		
Etiketleme (paketler için)		
Paketleme *(uygunsuz veya hasarlı)*		
Yükün segregasyonu		
Paketin içinin istiflenmesi / bağlanması		

r. Emergency Response Guide

This is addressed in the annexed Occupational Health and Safety Emergency Action Procedure no. ISG-PLN-01, and Dangerous Goods Emergency Plan.

GUIDE 111	
Mixed Load/Unidentified Cargo	

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- May explode from heat, shock, friction or contamination.
- May react violently or explosively on contact with air, water or foam.
- May be ignited by heat, sparks or flames.
- Vapors may travel to source of ignition and flash back.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Inhalation, ingestion or contact with substance may cause severe injury, infection, disease or death.
- High concentration of gas may cause asphyxiation without warning.
- Contact may cause burns to skin and eyes.
- Fire or contact with water may produce irritating, toxic and/or corrosive gases.
- Runoff from fire control may cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Stay away from low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations.

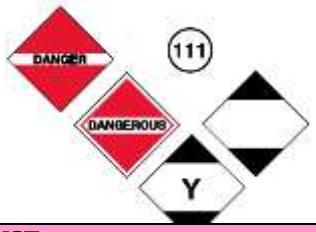
EVACUATION

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions.

GUIDE 111

Mixed Load/Unidentified Cargo



EMERGENCY RESPONSE

FIRE

CAUTION: Material may react with extinguishing agent.

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire

SPILL OR LEAK

- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (smoking, flares, sparks).
- All equipment used when handling the product must be grounded.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.

Small Spill

- Pick up with sand or other non-combustible absorbent material and place into containers for later disposal.

Large Spill

- Dike far ahead of liquid spill for later disposal.

FIRST AID

- Move victim to fresh air.
- Call emergency medical service.
- Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Shower and wash with soap and water.
- Keep victim calm and warm.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Flammable Solids – Toxic and/or Corrosive

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Flammable/combustible material.
- May be ignited by heat, sparks or flames.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated

HEALTH

- TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Stay away from low areas.
- Ventilate enclosed areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

Large spill

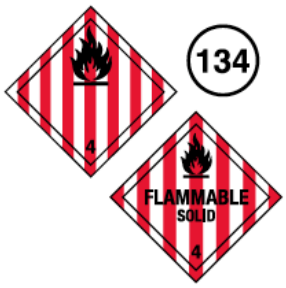
- Consider initial downwind evacuation for at least 100 meters.

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions.

GUIDE 134

Flammable Solids – Toxic and/or Corrosive



EMERGENCY RESPONSE

FIRE

Small Fire

- Dry chemical, CO2, water spray or alcohol-resistant foam.

Large Fire

- Water spray, fog or alcohol-resistant foam.
- Move containers from fire area if you can do it without risk.
- Use water spray or fog; do not use straight streams.
- Do not get water inside containers.
- Dike fire-control water for later disposal; do not scatter the material.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire

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SPILL OR LEAK

- Fully encapsulating, vapor-protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Stop leak if you can do it without risk.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Prevent entry into waterways, sewers, basements or confined areas.
- Use clean, non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

FIRST AID

- Move victim to fresh air.
- Call emergency medical service.
- Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim calm and warm.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 136

Substances - Spontaneously Combustible - Toxic and/or Corrosive (Air-Reactive)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Extremely flammable; will ignite itself if exposed to air.
- Burns rapidly, releasing dense, white, irritating fumes.
- Substance may be transported in a molten form.
- May re-ignite after fire is extinguished.
- Contact with metals may produce flammable hydrogen gas.
- Containers may explode when heated.

HEALTH

- Fire will produce irritating, corrosive and/or toxic gases.
- TOXIC; ingestion of substance or inhalation of decomposition products will cause severe injury or death.
- Contact with substance may cause severe burns to skin and eyes.
- Some effects may be experienced due to skin absorption.
- Runoff from fire control may be corrosive and/or toxic and cause pollution.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters for liquids and at least 25 meters for solids.
- Stay upwind, uphill and/or upstream
- Keep unauthorized personnel away.
- Stay away from low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- For Phosphorus (UN1381): Special aluminized protective clothing should be worn when direct contact with the substance is possible.

EVACUATION

Spill

- Consider initial downwind evacuation for at least 300 meters.

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions.

GUIDE 136

Substances - Spontaneously Combustible - Toxic and/or Corrosive (Air-Reactive)

EMERGENCY RESPONSE

FIRE

Small Fire

- Water spray, wet sand or wet earth.

Large Fire

- Water spray or fog.
- Do not scatter spilled material with high-pressure water streams.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK

- Fully encapsulating, vapor-protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.

Small Spill

- Cover with water, sand or earth. Shovel into metal container and keep material under water.

Large Spill

- Dike for later disposal and cover with wet sand or earth.
- Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID

- Move victim to fresh air.
- Call emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, keep exposed skin areas immersed in water or covered with wet bandages until medical attention is received.
- Removal of solidified molten material from skin requires medical assistance.
- Remove and isolate contaminated clothing and shoes at the site and place in metal container filled with water. Fire hazard if allowed to dry.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Keep victim calm and warm.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 139

Substances - Water-Reactive (Emitting Flammable And Toxic Gases)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- May ignite on contact with water or moist air.
- Some react vigorously or explosively on contact with water.
- May be ignited by heat, sparks or flames.
- May re-ignite after fire is extinguished.
- Some are transported in highly flammable liquids.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

HEALTH

- Highly toxic: contact with water produces toxic gas, may be fatal if inhaled.
- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce corrosive solutions on contact with water.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters for liquids and at least 25 meters for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Stay away from low areas.
- Ventilate the area before entry.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

Spill

- For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions.

GUIDE 139

Substances - Water-Reactive (Emitting Flammable And Toxic Gases)

EMERGENCY RESPONSE

FIRE

- DO NOT USE WATER OR FOAM. (FOAM MAY BE USED FOR CHLOROSILANES, SEE BELOW)

Small Fire

- Dry chemical, soda ash, lime or sand.

Large Fire

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- FOR CHLOROSILANES, DO NOT USE WATER; use AFFF alcohol-resistant medium-expansion foam; DO NOT USE dry chemicals, soda ash or lime on chlorosilane fires (large or small) as they may release large quantities of hydrogen gas that may explode.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire

SPILL OR LEAK

- Fully encapsulating, vapor-protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- DO NOT GET WATER on spilled substance or inside containers.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- FOR CHLOROSILANES, use AFFF alcohol-resistant medium-expansion foam to reduce vapors.

Small Spill

- Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
- Dike for later disposal; do not apply water unless directed to do so.

Powder Spill

- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- Keep victim calm and warm.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 143

Oxidizers (Unstable)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- These substances will accelerate burning when involved in a fire.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react explosively with hydrocarbons (fuels).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

HEALTH

- TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- Fire may produce irritating and/or toxic gases.
- Toxic fumes or dust may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.).
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters for liquids and at least 25 meters for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Stay away from low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

- For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

GUIDE 143

Oxidizers (Unstable)

EMERGENCY RESPONSE

FIRE

Small Fire

- Use water. Do not use dry chemicals or foams. CO2 or Halon® may provide limited control.

Large Fire

- Flood fire area with water from a distance.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Move containers from fire area if you can do it without risk.
- Do not get water inside containers: a violent reaction may occur.

Fire involving Tanks or Car/Trailer Loads

- Cool containers with flooding quantities of water until well after fire is out.
- Dike fire-control water for later disposal.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Use water spray to reduce vapors or divert vapor cloud drift.
- Prevent entry into waterways, sewers, basements or confined areas.

Small Spill

- Flush area with flooding quantities of water.

Large Spill

- DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim calm and warm.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 153	
Substances - Toxic and/or Corrosive (Combustible)	

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Combustible material: may burn but does not ignite readily.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.
- Runoff may pollute waterways.
- Substance may be transported in a molten form.

HEALTH

- TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters for liquids and at least 25 meters for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Stay away from low areas.
- Ventilate enclosed areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

- For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions.

GUIDE 153

Substances - Toxic and/or Corrosive (Combustible)

EMERGENCY RESPONSE

FIRE

Small Fire

- Dry chemical, CO2 or water spray.

Large Fire

- Dry chemical, CO2, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire-control water for later disposal; do not scatter the material.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, keep away from flames and fire)
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

FIRST AID

- Move victim to fresh air.
- Call emergency medical service.
- Give artificial respiration if victim is not breathing.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim calm and warm.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 163

Radioactive Materials
(Low To High Level Radiation)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Radioactivity does not change flammability or other properties of materials.
- Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C for a period of 30 minutes.

HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Undamaged packages are safe. Contents of damaged packages may cause higher external radiation exposure, or both external and internal radiation exposure if contents are released.
- Type A packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life-endangering amounts. Partial releases might be expected if "Type A" packages are damaged in moderately severe accidents.
- Type B packages, and the rarely occurring Type C packages (large and small, usually metal), contain the most hazardous amounts. They can be identified by package markings or by shipping papers. Life-threatening conditions may exist only if contents are released or package shielding fails. Because of design, evaluation and testing of packages, these conditions would be expected only for accidents of utmost severity.
- The rarely occurring "Special Arrangement" shipments may be of Type A, Type B or Type C packages. Package type will be marked on packages, and shipment details will be on shipping papers.
- Radioactive White-I labels indicate very low radiation levels (less than 0.005 mSv/h (0.5 mrem/h))
- Radioactive Yellow-II and Yellow-III labeled packages have higher radiation levels. The transport index (TI) on the label identifies the maximum radiation level in mrem/h one meter from a single, isolated, undamaged package.
- Some radioactive materials cannot be detected by commonly available instruments.
- Water from cargo fire control may cause pollution.

PUBLIC SAFETY

- Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters.

Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters in all directions.

GUIDE 163

Radioactive Materials
(Low To High Level Radiation)

EMERGENCY RESPONSE

FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog (flooding amounts).
- Dike fire-control water for later disposal.

SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Damp surfaces on undamaged or slightly damaged packages are seldom an indication of packaging failure. Most packaging for liquid content have inner containers and/or inner absorbent materials.
- Cover liquid spill with sand, earth or other non-combustible absorbent material.

FIRST AID

- Call emergency medical service.
- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 171

Chemical Substances

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Some may burn but none ignite readily.
- Containers may explode when heated.
- Some may be transported hot.

HEALTH

- Inhalation of material may be harmful.
- Contact may cause burns to skin and eyes.
- Inhalation of Asbestos dust may have a damaging effect on the lungs.
- Fire may produce irritating, corrosive and/or toxic gases.
- Some liquids produce vapors that may cause dizziness or suffocation.
- Runoff from fire control may cause pollution.

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters for liquids and at least 25 meters for solids.
- Keep unauthorized personnel away.
- Stay upwind.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will provide limited protection.

EVACUATION

Spill

- For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters in all directions; also, consider initial evacuation for 800 meters in all directions

GUIDE 171

Chemical Substances

EMERGENCY RESPONSE

FIRE

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog or regular foam.
- Do not scatter spilled material with high-pressure water streams.
- Move containers from fire area if you can do it without risk.
- Dike fire-control water for later disposal.

Fire involving Tanks

- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent dust cloud.
- Avoid inhalation of asbestos dust.

Small Dry Spill

- With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area.

Small Spill

- Pick up with sand or other non-combustible absorbent material and place into containers for later disposal.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Cover powder spill with plastic sheet or tarp to minimize spreading.
- Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID

- Move victim to fresh air.
- Call emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

s. Dangerous Goods Handling Guide Additional Cargo Notification

Proper Shipping Name		
UN Number and groups in the Class ID/Characteristic table		
Type and Code of the load	**Dangerous Liquid Bulk Cargoes (Petroleum and Petroleum Derivatives-Marpol Annex-1)**	
	Dangerous Liquid Bulk Cargoes (Chemical and Similar-IBC Code)	
	Dangerous Liquid Bulk Cargoes (Liquefied Gas-IGC Code)	
	Packaged Dangerous Goods (IMDG Code)	
	Dangerous Solid Bulk Cargoes (IMSBC Code)	

Appex: Safety Data Sheet (SDS)

Dangerous Goods Safety Advisior

Name/Sorname/Signature

Responsible Person for the Terminal

Name/Sorname/Signature

12 ABBREVIATIONS

VHF, Marine Radio
CTU, Cargo Transport Unit
IMDG, International Maritime Dangerous Goods Code
IMO, International Maritime Organization
ILO, International Labour Organization
UN, United Nations
PEAR, Harmful to People, Environment, Assets and Reputation
UATF, National Waste Transport Form
AFAD, Disaster and Emergency Management Presidency
SDS, Safety Data Sheet

13 SUBMISSION

This guide applies for the entry and presence of dangerous goods in port areas both on ships and on shore. The purpose is to make this guide applicable to all ships visiting a port regardless of their ensign. This shall not be applied to ship provisions and equipment, or to military ships or war ships.

The purpose of this chapter is to help persons and institutions preparing national legal requirements to ensure that such requirements are as effective as possible by way of notifying all possible conditions of dangerous goods in cargo areas, but by not constituting validity for exceptional cases.

It is of importance that the definitions are reviewed and used carefully to prevent misunderstandings.

14 DEFINITIONS

Interface means any dock, jetty, pier, quay, sea terminal or similar structure (whether floating or not) to which a ship can be moored. This includes any facility or asset, apart from the ship, which is used directly or indirectly for the loading and unloading of dangerous goods.

Port Facility means any person and institution that controls the port operations daily.

Bulk means any cargo to be carried in a tank fixed permanently on or inside a ship, or in a cargo area that is a structural part of the ship without any partition.

Cargo Interests mean the sender (shipper), carrier, forwarder, groupage agent, packaging centre or any person, company or institution involved in any one of the activities below: receiving of goods at the port, their seaborne transportation and always having control over the goods with regard to the identification, storage, packing, packaging, making safe, labelling, plating or documentation of dangerous goods.

Conformity Certificate means a document issued by or in the name of the Administration as per relevant laws certifying that the structure and equipment of a ship are suitable to the dangerous goods to be carried on such ship.

Dangerous Goods means any of the goods below, whether packed, bulk packaged, or carried in bulk or not, under the scope of the documents below:

- Oils as covered in MARPOL 73/78 Annex I;
- Gases as covered in laws pertaining to the structure and equipment of ships carrying liquefied gases in bulk;
- Noxious liquids/chemicals as covered in MARPOL 73/78 Annex II and in laws pertaining to the structure and equipment of ships carrying dangerous chemicals in bulk;
- Materials hazardous only in bulk (MHB) including wastes covered in Group B of code of safety applications for solid bulk cargoes (BC Code), and solid bulk materials containing solid dangerous materials;
- Harmful substances in packaged form (as covered in MARPOL 73/78 Annex III); and
- Dangerous goods, materials and substances (as covered in IMDG Code).

The term **“Dangerous Goods”** also includes any uncleaned packaging (tank–container housing, intermediate bulk containers (IBC’s), bulk packaging, portable tanks or tank vehicles) which was filled with a substance that is classified as a dangerous good or which was degasified to neutralize any hazard, and (in case the residues/remnants of the dangerous goods were not sufficiently cleaned) with which dangerous goods were previously carried.

Document of Compliance means a document issued by or on behalf of the Administration for a ship carrying solid dangerous goods in bulk or in packaged form as per SOLAS Regulation II-2/19.4, providing proof that the ship and equipment are in compliance with the requirements of said regulation.

Flexible Pipe means flexible hoses and end connections, including transport units with sealed ends, used for the transfer of dangerous goods.

Handling constitutes a part of the transport supply chains for cargoes, and includes loading to/unloading from a ship; intermediate transport between ships and other means of transport, railway wagon, vehicle, freight container or another transport vehicle; or transfers within a ship or in a hold or in a terminal area, including intermediate storage operations (such as temporary storage of dangerous goods in the port area) with the purpose of changing transporting and moving vehicles and methods within the port, during their transport between place of origin and destination. This terms has been extended to include completely many operations related to dangerous goods in the port area.

Hot Work means open flame or fire, which may pose an hazard due to the presence of dangerous goods or due to being in their proximity, electrical tools or hot riveting, grinding, welding, burning, cutting, and any other repairs involving welds or heat or sparks.

Master means a person in command of a ship. This does not include the pilot.

Packaging means packing, loading and filling of dangerous goods to receivers, intermediate bulk containers (IBC's), freight containers, tank containers, portable tanks, railway wagons, bulk containers, vehicles, barges carried by ships and other cargo transport units.

Pipeline means all pipes, connections, valves and other auxiliary facilities, apparatuses and equipment in a port used for or in relation to the loading of dangerous goods, however it shall not include any pipe, apparatus or equipment part, flexible pipe, loading arm of a ship, except for the ends of pipes, apparatuses or equipment parts of the ship to which the flexible pipe is connected.

Port Area means the land and sea area as established by the legislation.

Note: Some port areas may overlap, and legal requirements must be taken into account for such cases. When making the definition of the port area in legal legislation, attention should be paid to ensure that the law is applicable to all facilities that may be included.

Port Authority means any person or institution authorized to exercise effective control over the port area.

Administration/Administrations mean national, regional or local administration authorized to exercise legal requirements and to implement legal requirements with regard to a port area.

Responsible Person for the Ship means a ship's master or any person assigned by an employer on the shore side, certificated by a Regulating Authority when necessary or recognized in another way, who has sufficient knowledge and experience for this purpose, and has the authority to make all decisions for a specific duty.

Responsible Person for the Terminal means any person who has up-to-date knowledge, experience and competence to fulfil a duty.

Ship means any marine vessel, seagoing or not (including those used in inland waters), used for the transportation of dangerous goods.

Ship Provisions means materials on deck of a ship for the maintenance, protection, safety, use and navigation of a ship (excluding fuel and compressed air used for the ship's primary propulsion machinery or fixed auxiliary equipment) or for the safety and comfort of the ship's passengers or crew.

It is stipulated that the ship provisions include such materials as may be necessary for the normal operation of a ship (including those for the comfort of the passengers and crew), but materials that may be carried in order to execute the special functions of a ship are not included to this scope (e.g. explosives carried by a deep-sea rescue ship, or dangerous goods used by drilling ships).

Stowage means the placement of packages, intermediate bulk containers (IBC's), freight containers, tank containers, portable tanks, bulk containers, vehicles, barges carried by ships, other cargo transport units and bulk cargoes on the deck, holds or other areas of a ship.

To transport means moving with one or more transport vehicle in port areas.

Unstable Substance means a substance which, by nature of its chemical make-up, tends to polymerize or otherwise react in a dangerous manner under certain conditions of temperature or in contact with a catalyst. This tendency can be mitigated by special transport conditions or using sufficient amount of chemical inhibitors or stabilizers in the product.