



RODA PORT FACILITY DANGEROUS GOODS HANDLING GUIDE



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(Refer to the Revision Page)

DANGEROUS GOODS OPERATIONS RESPONSIBLE	DANGEROUS GOODS SECURITY CONSULTANT
NAME-SURNAME:	NAME-SURNAME:
SIGN:	SIGN:

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REVISION PAGE

No	Revision No	Revision Contents	Revision Date	Revision Author	
				Name Surname	Signature
1	1	PUBLICATION OF REGULATION	01.04.2016	FATİH VARDAR	
2	2	Revision of contents, communication info	25.04.2018	E. Serkan DAĞDELEN	
3	3	Revision of accident report notifications by directive	03.05.2019	E. Serkan DAĞDELEN	
4	4	Revision fo situation plan	03.05.2019	E. Serkan DAĞDELEN	
5	5	Revision on Port Info Form	04.12.2019	Serhat AYKUT	
6	6	Revision of storage procedures for dangerous cargoes in the port facility	04.12.2019	Serhat AYKUT	
7	7	Revision Of Emergency Contact Points and Contact Information	04.12.2019	Serhat AYKUT	
8	8	Emergency contact point and contact information, non-facility communications list, facility information form, directory name update as per regulation November 14, 2021	15.04.2022	Serhat AYKUT	
9	9	Revision within the scope of the Dangerous Goods Handling Guide Instruction and the "Regulation on the Transport of Dangerous Goods by Sea and Loading Safety" dated 14.11.2021	01.10.2022	Gizem EREN	



FACILITY DANGEROUS GOODS HANDLING GUIDE

Doküman No	SEÇ 64
İlk Yayın Tarihi	01.04.2016
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1. ENTRY

a) The entry and presence of dangerous cargoes 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.

b) 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 cargoes prior to loading or unloading, and during their handling.

c) These Recommendations are confined to dangerous cargoes 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.

d) An essential pre-requisite for the safe transport and handling of dangerous cargoes 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.

e) 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.

f) The safe transport and handling of dangerous cargoes 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.

g) 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.

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

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1.1 General information of the port facility

1	Port Name	RODA LİMAN DEPOLAMA ve LOJİSTİK İŞLETMELERİ A.Ş.
2	Port Comm.Details	Roda Liman Depolama ve Lojistik İşletmeleri A.Ş. Adres : Ata Mah. 146 nolu Sk. No:5 16600 Gemlik/BURSA Telefon : 0(224) 519 00 30 Faks : 0(224) 519 00 31 E-Mail : info@rodaport.com Web : www.rodaport.com
3	Port Name	RODA LİMAN DEPOLAMA ve LOJİSTİK İŞLETMELERİ A.Ş.
4	Location	BURSA
5	Port Comm.Details	Roda Liman Depolama ve Lojistik İşletmeleri A.Ş. Adres : Ata Mah. 146 nolu Sk. No:5 16600 Gemlik/BURSA Telefon : 0(224) 519 00 30 Faks : 0(224) 519 00 31 E-Mail : info@rodaport.com Web : www.rodaport.com
6	Location	South Marmara
7	Harbour Master	Gemlik Liman Başkanlığı Cumhuriyet Mahallesi Gül Adres : Caddesi No:154 16600 Gemlik/BURSA Telefon : 0(224) 513 11 33 Faks : 0(224) 513 98 82 E-Mail : gemlik.liman@udhb.gov.tr Web : www.gemlikliman.gov.tr
8	Municipality	Gemlik Belediyesi Adres : Hamidiye Mah. Kuvayımillie Bulvarı Sosyal Yaşam Merkezi Binası No.138 GEMLİK/BURSA Telefon : 0(224) 5134521-22-23-24 Faks : 0(224) 5121780 E-Mail : cagrimerkezi@gemlik.bel.tr Web : www.gemlik.bel.tr
9	Free Zone	Bursa Serbest Bölge A.Ş.
10	Port Permission	29.06.2025

11	Operating status of the facility (X)	Own load and 3rd parties (...)	Own load (...)	3 rd parties (X)
12	Port Authority	Y.Ahmet YAVUZ Telefon : 0(224) 519 00 30 Faks : 0(224) 519 00 31 E-Mail : aliacil@rodaport.net		
13	Port IMDG Authorized Person	Serhat AYKUT Telefon : 0 (224) 519 00 30 Mobil : 0 (533) 450 35 96 Faks : 0(224) 519 00 31 E-Mail : serhataykut@rodaport.net		
14	IMDG Consultant Company	Yeşil TMGDK – Gizem EREN GSM: 0536 785 72 42 TEL: 0850 441 18 80 email: gizem.eren@yesilgrup.com.tr		
15	Port positions	40°24'49.90"K 29° 4'32.80"D		
16	Types of dangerous goods handled at the facility (Loads within the scope of MARPOL Annex-I, IMDG Code, IBC Code, IGC Code, IMSBC Code, Grain Code, TDC Code, asphalt/bitumen and scrap loads)	IMDG CODE Class 2.1 - 2.2 – 2.3 – 3 - 4.1 – 4.2 – 4.3 - 5.1 – 5.2 - 6.1 – 6.2 – 8 – 9 IMSBC CODE A, B, C		
17	Dangerous goods handled at the facility (loads other than IMDG Code, among the cargo types in 16th article, will be written separately. Additional cargo request will be submitted to the Port Authority with Annex-1 form. It will be added to DGHG when appropriate)	IMSBC CODE A, B, C		
18	Classes for cargo handled, subject to IMDG Code	Class 2.1 - 2.2 – 2.3 – 3 - 4.1 – 4.2 – 4.3 - 5.1 – 5.2 - 6.1 – 6.2 – 8 - 9		
19	Groups in characteristic table for handled cargo subject to IMSBC Code	A, B, C		
20	Vessel type	Dry Bulk / General Cargo/ Container		
21	Distance to main road	5 km.		
22	Railway connection	N/A		
23	Nearest airport	Yenişehir Airport: 78 km.		
24	Annual Handling Capacity	Bulk & General cargo: 3.000.000 ton Container : 200.000 teu		
25	Scrap handling	Yes		
26	Border gate? (yes/no)	Yes		
27	Custom bonded area? (yes/no)	Yes		
28		1 MHC (80t), 4 MHC (100 t),		

	Machinery and equipment	4 Excavators (10-20 t), 2 RTG (40 t), 5 Stacker (4x45 1x10 t), 9 Forklift (33-3 t), 2 Elc.Forklift, 14 Truck, 18 tarilers, 3 mini loader, 2 bunker, 19 grabs				
29	Tank storage (m³)	N/A				
30	Open storage area (m²)	60.000 m²				
31	Semi-closed storage area (m²)	1.500 m²				
32	Fully-closed storage area (m²)	10.000 m²				
33	Fumigation area (m²)	750 m²				
34	Pilotage and tugs	Gemport Kılavuzluk ve Römorkör Hizmetleri Müdürlüğü Adres : Ata Mah. Liman Cad. No:12 16600 Gemlik/BURSA Telefon : 0(224) 524 88 31 Faks : 0(224) 524 88 30 E-Mail : pilotaj@gemport.com.tr Web : www.gemport.com.tr				
35	ISPS (yes/no)	Yes				
36	Waste Facility	Waste type		Capacity (m³)		
		<u>Liquid</u>				
		Bilge		160 m³		
		Sludge		95 m³		
		Waste oil		13 m³		
		<u>Solid</u>				
Hazardous. waste		6 m³				
Non-hazardous waste		250 m³				
37	Piers					
Pier No		Length (mtr)	Width (mtr)	Max. depth (mtr)	Min. depth (mtr)	Max. vessel (DWT or mtr)
No.1 Pier		233	35	14,50	14,00	80.000 - 250
No.2 Pier		213	35	14,50	14,00	65.000 - 225
No.3 Pier		160	40	14,50	14,00	40.000 - 160
No.4 Pier		148	40	14,50	14,00	15.000 - 150
No.5 Pier		240	25	8,20	4,00	4.500 - 140
No.6 Pier		235	25	6,10	4,00	4.500 - 150
Pipe line				Number (pcs)	Length (mtr)	Diameter (inch)
N/A						

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

a) General

IMDG Class 1(Explosive Substances) and Class 7(Radioactive Materials) shall not be taken inside the port facility. These cargoes are defined as dangerous cargoes which cannot be permitted absolutely. And be operated as transit cargo in case of the authorization of the competent authority.

- Dangerous goods which defined as Class 4.3 (Substances which, in contact with water, emit flammable gases) in the IMDG Code and ADR; are not stored in an open area where they are admitted to the shore facility.

- Dangerous goods which defined as Class 8 (Corrosive substances) in the IMDG Code and ADR; are not be stowed on the IMDG site (twice or more) without special permission from the administration.

Cargoes which are wrapped, packed or prepared in the form of bale/bunch/truss within the scope of MARPOL Annex-I and IMDG codes general cargoes and project cargoes are handled. 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. Liquid cargoes within the scope of IBC code are handled at container the port facility within the scope of IBC code.

b) Fulfillment of the conditions specified below will be ensured as regards handling the dangerous cargoes coming to the port facility, keeping them temporarily at the port facility, making their stowage and segregation and storage for safety of the port facility, employees and ships at the port facility.

c) A coordination meeting will be held at least 1 day prior to the acceptance of dangerous cargoes 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 cargoes handled routinely which are accepted to the port)

d) Following issues will be discussed during the coordination meeting with regard to the dangerous cargo (es) to be accepted to the port:

1. Risk arising from dangerous cargo
2. Interaction with dangerous cargoes 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.

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

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

1.2.1 Procedure for Safe Handling Operation of Packed Dangerous Cargoes

a) Container

- The container transporting dangerous materials subject to customs regime has been declared to the Customs Authorities; and the Customs Administration, as per the declaration, orients such container to RED line for physical examination and document control, to YELLOW line for control of correctness without need to physical examination, to BLUE line where the declarations and documents will be controlled later, to GREEN line where documents are not controlled and goods are not physically checked and determines the conduction of COMPLETE DETERMINATION, PARTIAL EXAMINATION or EXTERNAL EXAMINATION.
- Customer or the representative Agent thereof will make a request at the agency port (registry office, commercial tariff unit, CFS office) and a service order will be formed. Opening and closing minutes shall be signed by the customs examiner and a request will be made to CFS office with these minutes and the declaration.
- If the dangerous material inside the container does not have material safety data sheet (SDS), it will be requested from the customer or his representative. Proceedings shall not be started for dangerous cargoes which do not have SDS. SDS is reviewed by operation and HSE/TMGD departments and the required measures are taken and assignment of teams is carried out.
- The container, requested in line with the Service Order issued by CFS office, is brought to CFS site.
- The container is loaded on the Port Vehicle at the stowage area and brought to the CFS area and unloaded at the planned location. The examination of container is completed under the control of the customs examiner, customer/his representative and port CFS operation authority and the Opening and Closing minutes is prepared.
- During the Examination and Sampling process, teams wearing Protective Clothing will intervene the wastes (packaging paper, plastics, fixing materials etc) and leakage from the container in which there are Dangerous Materials and will perform the cleaning. The wastes will be taken to the waste collection center to be disposed.
- The container will be taken to the container stowage area following the field assignment performed subsequent to the completion of required proceedings.
- Containers containing Dangerous Materials are not placed in the “temporary storage place closed warehouse” but they are placed in IMDG area in line with features of these containers as per 77th article of Customs Regulation.

b) Dangerous cargoes in packaged form

- Except in container, Loading or unloading of packed dangerous cargoes will be made as direct delivery within the port facility.
- 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.

- 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.
- 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 equipment or not.
- The shift superintendent will be responsible from controlling the work security, control of equipment, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.
- Working order will be organized through the berth operator 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.

c) Requirements

- 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.
- Personnel working at the port facility in loading or unloading works as well as those working in processes of packaged dangerous cargoes 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.
- Works and processes related with damaged cargo carrying units and packagings containing dangerous materials shall be carried out by taking necessary measures at CFS's worksite. If there are any leakages in the said cargo carrying units or packagings, works related to them will be performed at the mobile leakage pools with capacity of 2 40-feet containers.
- IMO work area has been allocated which is in compliance with segregation and storage rules for packed dangerous cargoes and containers carrying dangerous materials and temporary storage of the said packaged dangerous cargoes will be carried out as per segregation and storage rules stated in section 4. Required fire, environmental and other safety measures will be taken at these worksites. If handling and storage of dangerous materials are done at the entire worksite, then the roads will be open for reaching the units carrying cargo containing dangerous materials and the equipments enabling emergency response for intervening within a short period shall be made available at the worksite.

- 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 cargoes
- 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.
- Cargo transport units transporting temperature-controlled dangerous materials can only be temporarily stored at IMO area where the necessary measures are taken. The temperature values of the cargo transport units will be followed up constantly and also be remotely monitored as much as applicable.
- 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. Warning signs specifying the risks will be placed at the areas of storage. Cargo Transport Units (CTUs) containing the said dangerous materials could be stored in open facility areas if they are not affected from factors like rain, sea water and etc. Packages dangerous substances shall be stored at The area specified in the General Load Storage Area on the side of the facility boundary and surrounded by barrier. The necessary warning signs will hang.

d) Documentation

- 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.
- 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.
- On board a ship carrying packaged dangerous cargoes 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.
- 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.

e) Supervision

- After the approach of the ship to interface, the master and port authority will supervise the transport of dangerous cargoes 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.

- 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.

f) Information for operational and emergency purposes

- The persons responsible from operation, within their respective areas of responsibility, should have the following information with respect to all dangerous cargoes transported or handled immediately available:
- The description of dangerous cargoes in accordance with Chapter 5.4 of the IMDG Code;
- Details of special equipment needed for the safe handling of a particular dangerous cargo; and
- 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.
- 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.
- 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 berth in a place which is easily accessible by the responsible people.
- 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 cargoes.
- 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 cargoes shall also be included.
- 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.

g) General handling precautions

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

- Every person engaged in the handling of dangerous cargoes exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.
- Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.
- If there is any loss of containment of dangerous cargo, every practical step is taken to minimize risks to persons and adverse effects to the environment.
- 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.

- Provisions of Code of Practice for Packing of Cargo Transport Units (CTU code) will be considered during internal loading process and/or loading process of other transport mode vehicles of the cargo transport units within the port facility. CFS personnel responsible of area shall issue a Container/Vehicle Packing Certificate if loading of a container or vehicle is performed at the areas of the facility where cargo transport units are unloaded and/or at the closed warehouses (CFS areas). Example for this is provided in Chapter 4. It will be checked whether each cargo transport unit coming to the port facility for transportation by the sea has got “Container/vehicle packing certificate” or not at the entry points to the port and it will not be permitted for cargo transport units to make loading to the ship if they don’t have the required certificate.
- The handling and temporary storage operations shall be conducted as per the rules specified on table 1 (Schedule for segregation of the dangerous cargoes at the port facility) within the annex of “Recommendations on the Safe Transport of Dangerous Cargoes 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.
- 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.
- Cargo transport units by which dangerous materials with temperature control are transported will be temporarily stored at the IMO area after the required precautions are taken. The temperature values of these cargo transport units will be constantly monitored and followed up through the camera system.
- There is no closed area for packages containing dangerous materials releasing flammable gases when contacted with water and for cargo transport units containing them. If containers including class 4.3 type cargo possess qualities which won’t be affected by wind, sea water or similar factors, they can be stowed at the IMO facility by considering the related rules. In other cases, it will not be allowed to handle and let them enter the port facility.

1.2.2 Operational procedure of safe handling of bulk solid dangerous cargoes

Loading or unloading of solid dangerous cargoes will be made at the 1,2,3,4 nu. berths within our port facility and could be storage in open and/or closed area.

a) Solid bulk dangerous cargoes

- 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.
- 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.
- 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.

- 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.
- Loading and unloading in accordance with the cargo plan is within the liability of berth operators.
- 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.
- Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

b) Requirements

- Whilst the areas, where handling is done in line with the risks of the dangerous cargo, 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.
- Issues as regards additional safety precautions to be taken at the port facility and these precautions will be provided by the operations department.
- The shift superintendent or the berth operator will be assigned to be responsible from handling of dangerous solid bulk cargoes and their duties are defined within integrated management system.
- 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 cargoes and these lamps should be gastight.
- Adequate number of personal protective clothing, equipment and outfit shall be provided in line with the specifications of solid bulk dangerous cargoes which are handled and the risks they can impose.
- At the areas where solid bulk dangerous cargoes 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.
- 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.
- Canvas to be used for avoiding the solid bulk dangerous cargoes 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.
- The master who will load/unload the solid bulk dangerous cargoes 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.

- 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 cargoes 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)”.

c) Documentation

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

d) Responsibility for compliance

When solid bulk dangerous cargoes 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.

e) Emission of harmful dusts

- Where the transport, handling or stowage of solid bulk dangerous cargoes 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.
- 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.

f) Emission of dangerous vapor/oxygen deficiency

- Where the transport or handling of solid bulk dangerous cargoes 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.
- Whenever solid bulk dangerous cargo which may emit a toxic or flammable vapor is stowed or carried, an appropriate instrument for measuring the concentration of the

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toxic or flammable vapor should be provided.

g) Emission of explosive dusts

- Where the transport or handling of solid bulk dangerous cargoes 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.
- 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 than sweeping.

h) Spontaneously combustible substances and substances that react with water

Solid bulk dangerous cargoes 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.

i) Incompatible materials

Solid bulk dangerous cargo 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.

j) Discordant materials

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

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

- 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.

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.

- 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.

- **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.

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.

1.2.4 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.

a) Requirements

- 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.
- 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.
- 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.

b) Handling operation

- 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).
- 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.
- 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.
- If level-3 radiation 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.
- 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.
- 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 the quarantine area.
- 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 engaged in the transport of dangerous goods; They have to take all necessary measures to make transportation safe, secure and harmless to the environment, to prevent accidents and to minimize the damage when an accident occurs. In this context, the responsibilities in ADR and related regulations are stated below.

2.1 General responsibilities

The general responsibilities of all parties involved in the transport of dangerous goods are as follows:

a) They are obliged to take all necessary measures to make the transportation safe, secure and harmless to the environment, to prevent accidents and to reduce the damage as much as possible when an accident occurs.

b) In emergencies such as fire, leakage, spillage that occur during the transportation of dangerous goods, they benefit from the EmS Guide, which includes Emergency Response Methods and Emergency Schedules for Ships Carrying Dangerous Goods.

c) They benefit from the Medical First Aid Guide (MFAG) in the IMDG Code annex in order to provide the necessary medical first aid for the people affected by the damages of the dangerous goods and the health problems caused by the accidents involving these cargoes.

2.2 Responsibilities of the cargo person

a) It prepares or has it prepared mandatory documents, information and documents related to dangerous goods. It ensures that these documents are present with the cargo during the transportation activity.

b) Provides classification, packaging, marking, labeling and placarding of dangerous goods in accordance with their type.

c) It ensures that dangerous goods are loaded, stacked and securely fastened to approved packaging and cargo transport units in accordance with the rules and safely.

2.3 Carrier's responsibilities

a) Requests the mandatory documents, information and documents related to dangerous goods from the cargo person and ensures that they are present with the cargo during the transportation activity.

b) Controls the compliance of the dangerous goods classified, packaged, marked, labeled and placarded by the cargo person with the legislation.

c) Controls that the dangerous goods are packed in accordance with the rules by using approved packaging and load transport units, they are safely loaded and securely fastened to the cargo transport unit.

2.4 Responsibilities of the coastal facility operator

a) Do not berth the ships carrying dangerous goods without the permission of the Port Authority.

b) Provides written information within the scope of facility rules, cargo handling rules and relevant legislation to the ship that will dock at its facility.

c) It does not handle dangerous goods for which it has not received a handling permit from the Administration, and it does not make the ships that will berth suffer by planning in this context.

d) Requests the mandatory documents, information and documents related to dangerous goods from the cargo person and ensures that they are found with the cargo. If the relevant documents, information and documents cannot be provided by the cargo person, it is not obliged to accept or handle the dangerous cargo at its facility.

e) It carries out the loading or unloading operation according to the agreement to be reached by sharing all the data that may be required according to the characteristics of the cargo with the ship's person. The ship does not make any changes in the operation without the knowledge of the person concerned.

f) It determines the working limits by taking into account the safe working capacity of the facility and the weather forecasts, and takes the necessary measures to ensure that the ship is safely moored at the pier and handling.

g) Controls the transport documents containing information that the dangerous goods coming to the facility are classified, packaged, marked, labeled, plated and loaded safely to the cargo transport unit.

h) Ensures that the personnel involved in the handling of dangerous goods and the planning of this handling are documented by receiving the necessary training, and does not assign personnel without documents to these operations.

i) It ensures that the dangerous goods handling equipment in its facility is in working condition and that the relevant personnel are trained and documented regarding the use of these equipment.

j) By taking occupational safety measures at the coastal facility, it ensures that the personnel use personal protective equipment suitable for the physical and chemical characteristics of the dangerous cargo.

k) Performs activities related to dangerous cargoes at piers, piers and warehouses established in accordance with these works.

l) Equips the piers and piers reserved for ships that will load or unload dangerous liquid bulk cargoes with appropriate installations and equipment for this work.

m) Keeps an up-to-date list of all dangerous cargoes on the ships berthed and in the closed and open areas of the facility and gives this information to the relevant persons upon request.

n) It notifies the Port Authority of the instant risk posed by the dangerous goods it handles or temporarily stores in its facility and the measures it takes for it.

o) Notifies the Port Authority of the accidents related to dangerous goods, including the accidents at the entrance to closed areas.

p) Provides the necessary support and cooperation in the controls and inspections carried out by the Administration and Port Authority.

r) It ensures that Class 1 (except Class 1 Compatibility Group 1.4 S), Class 6.2 and Class 7 dangerous goods that are not allowed to be stored temporarily, are transported out of the coastal facility as soon as possible, and applies to the Administration for permission in cases where it is necessary to wait.

s) Temporarily stores the cargo transport units in which dangerous goods are transported in accordance with the separation and stacking rules, and takes fire, environment and other safety measures in accordance with the class of the dangerous cargo in the storage area. It keeps fire extinguishing systems and first aid units ready for use at any time in the areas where dangerous goods are handled and makes the necessary controls periodically.

t) Gets permission from the Port Authority before the hot working works and operations to be carried out in the areas where dangerous goods are handled and temporarily stored.

u) Prepares an emergency evacuation plan for the evacuation of ships from coastal facilities in case of emergency and submits it to the Port Authority and informs the relevant people about the plan approved by the Port Authority.

v) It ensures the internal loading of the cargo transport units in accordance with the loading safety rules in its facility.

2.5 Responsibilities of the ship owner

a) It ensures that the cargo to be carried by the vessel is documented as suitable for transportation and that the cargo holds, cargo tanks and cargo handling equipment are suitable for cargo transportation.

b) Requests all mandatory documents, information and documents related to dangerous goods from the cargo person and ensures that they are present with the cargo during the transportation activity.

c) It ensures that the documents, information and documents required to be found on the ship regarding dangerous goods within the scope of legislation and international conventions are appropriate and up-to-date.

d) Controls the transport documents containing information that the cargo transport units loaded on the ship are appropriately marked, plated and loaded safely.

e) Informs the relevant ship personnel on the risks of dangerous cargoes, safety procedures, safety and emergency measures, response methods and similar issues.

f) Keeps the current lists of all dangerous goods on board and declares them to the relevant parties upon request.

g) Ensures that the loading program, if any, is approved and documented and kept in working condition.

h) It notifies the Port Authority and the coastal facility about the instant risk posed by the dangerous cargoes on the ship approaching the coastal facility and the measures it has taken for it.

i) In case of leakage in the dangerous cargo or if there is such a possibility, it will not accept the dangerous cargo to be transported.

j) Notifies the Port Authority of the dangerous cargo accidents that occur on his ship while navigating or at the coastal facility.

k) Provides the necessary support and cooperation in the controls and inspections carried out by the Administration and Port Authority.

l) It does not accept to carry dangerous goods that are not included in the ship certificates issued by the relevant institutions and organizations.

m) It ensures that the people of the ship involved in the handling of dangerous goods use personal protective equipment suitable for the physical and chemical characteristics of the cargo during handling.

n) It provides the requirements regarding the loading safety of the loads loaded on its ships.

2.6 Dangerous Goods Safety Adviser responsibilities

a) Under the responsibility of the head of the undertaking, to seek by all appropriate means and by all appropriate action, within the limits of the relevant activities of that undertaking, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way.

b) Monitoring compliance with the requirements governing the carriage of dangerous goods;

c) Advising his undertaking on the carriage of dangerous goods;

d) Preparing an annual report to the management of his undertaking or a local public authority, as appropriate, on the undertaking's activities in the carriage of dangerous goods. Such annual reports shall be preserved for five years and made available to the national authorities at their request.

e) DGSAs, which are authorized under the IMDG Code, prepare quarterly reports regarding the responsibilities of the coastal facilities they serve and notify this report to the Administration. In case of deficiencies or inaccuracies in the reports, the Administration or the Port Authority is authorized to conduct inspections at the coastal facility.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the undertaking;

a) the procedures for compliance with the requirements governing the identification of dangerous goods being transported;

b) the undertaking's practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;

c) the procedures for checking the equipment used in connection with the carriage, packaging, filling, loading or unloading of dangerous goods;

d) the proper training of the undertaking's employees, including on the changes to the regulations, and the maintenance of records of such training;

e) the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the carriage, packaging, filling, loading or unloading of dangerous goods;

f) Investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the carriage, packaging, filling, loading or unloading of dangerous goods;

g) the implementation of the appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;

h) the account taken of the legal prescriptions and special requirements associated with the carriage of dangerous goods in the choice and use of sub-contractors or third parties;

i) Verification that employees involved in the consigning, carriage, packaging, filling, loading or unloading of dangerous goods have detailed operational procedures and instructions;

j) the introduction of measures to increase awareness of the risks inherent in the carriage, packaging, filling, loading and unloading of dangerous goods;

k) The implementation of verification procedures to ensure the presence on board the means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;

l) Implementation of verification procedures to ensure compliance with the requirements governing packaging, filling, loading and unloading.

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

This section explains how the precautions regarding the issues specified in the third section of the "Regulation on the Transport of Dangerous Goods by Sea and Loading Safety" are carried out and how the requirements of the provisions in the fourth section will be met.

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

a) Loading safety

- BLU Code and BLU Manual, Safe Practice Code for Cargo Stacking and Safety (CSS Code), Code of Practice for Packing Cargo Transport Units (CTU Code) and Safe Practices Code for Ships Carrying Timber Cargo on Deck, in order to ensure safe loading of the cargo on the ship. (TDC Code) provisions are complied with.
- Stacking of loads is carried out in accordance with the relevant legislation and international agreements we are a party to.
- The ship cannot be loaded more than the loading limit considering the loading limit brand. In the event that such a situation is detected, the ship is not allowed to sail and administrative action is taken against the person in charge of the ship within the scope of Article 22.
- The loading-unloading plan before the handling operation and the results of the draft survey or weighbridge survey are presented to the Port Authority by the ship's related party to determine the amount of loaded cargo before the ship takes off. The Administration or Port Authority may request that the draft survey or scale survey

report be received from an authorized inspection firm.

- Precautions are taken to prevent the stability of the ship from being adversely affected by ensuring that the cargo in bulk carriers, especially single-hold bulk carriers, is loaded in such a way that it spreads over the floor of the hold (by trapping).
- It is ensured that the load and ballast water pattern are monitored throughout the loading or unloading operation so that the structure of the ship is not subjected to excessive stress.
- Care is taken to ensure that the ship is free of heel, but if an inclination is required during loading, it is ensured that this is as short as possible. In order to avoid structural damage to the ship, balanced loading and unloading is ensured in accordance with the approved stability boucle.
- Under adverse meteorological and oceanographic conditions that may affect the cargo handling operation, the handling operation is stopped by the captain until the conditions improve.
- In order to prevent situations such as placing heavy cargo on light cargo, placing liquid cargo on dry cargo, or spreading the smell of bad-smelling cargo to other cargoes, cargoes with properties that may damage other cargoes are loaded in accordance with the separation rules.
- All cargoes, cargo units and cargo transport units, except solid and liquid bulk cargoes, in accordance with SOLAS Chapter VI Part A Rule 5.6, in order to ensure that the safety measures related to loading, stacking, separation, handling, transportation and unloading of cargoes on the ship are fully implemented and maintained. It is loaded, stacked and secured in accordance with the Cargo Securing Manual approved by the authorized classification societies on behalf of the Administration.

b) Cargoes covered by the IMDG Code

- Substances and objects prohibited in the IMDG Code cannot be transported by sea.
- Parties involved in the transportation of packaged dangerous goods take measures in accordance with the Regulation and IMDG Code provisions, taking into account the nature and extent of the foreseeable risks, in order to prevent damage and injuries and to minimize their effects.
- It is obligatory to use the packages defined in IMDG Code Chapter 6 and tested by the institutions authorized by the Ministry or authorized administration of a country party to SOLAS and given UN certificate for the transportation of dangerous goods by sea.
- The Container/Vehicle Packing Certificate in IMDG Code Rule 5.4.2 is filled and signed by the persons who load the dangerous goods to the cargo transport unit (excluding the tank container). These persons receive the relevant training in IMDG Code Rule 1.3. The Container/Vehicle Packing Certificate is presented to the coastal facility before the cargo arrives at the shore facility or upon entry with the cargo. A copy of this certificate is placed on the inside wall of the right door of the container.
- Documents specified in IMDG Code Rules 5.4.3, 5.4.4 and 5.4.5 are kept on every ship carrying dangerous goods in packages.
- In accordance with SOLAS Chapter II-2 Part G Rule 19.4, a Certificate of Compliance issued by the authorized administration is kept on the ships to prove that the ships are in a suitable structure and equipment to carry dangerous goods. Except for dangerous solid bulk cargoes, there is no need for certification for IMDG Code Class 6.2, Class 7 and dangerous cargoes that can be transported in limited quantities.

c) Cargoes covered by the IMSBC Code

- In accordance with SOLAS Chapter VII Part A Rule 7.2.1, the use of the “bulk shipping name” is mandatory in all documents related to the transport of dangerous solid bulk cargoes, the trade name of the cargo alone is not sufficient.
- Ships carrying dangerous solid bulk cargoes must have a cargo manifest or special list showing the dangerous goods on board, together with their locations, in accordance with SOLAS Chapter VII Part A Rule 7.2.2. A detailed stowage plan showing the location and class of all dangerous goods on board can be used instead of the aforementioned cargo manifest or special list.
- Information on solid bulk cargoes within the scope of the IMSBC Code must be provided to the ship owners in accordance with SOLAS Chapter VI Part A Rule 2 by the cargo authorities.
- Appropriate emergency response instructions are kept on board to respond to accidents caused by dangerous solid bulk cargoes.
- The procedures regarding the transportation and notification of a solid bulk cargo not included in the IMSBC Code are determined by the Administration.

d) Berthing

Adequate and safe mooring facilities are provided; and adequate safe access is provided between the ship and the shore.

e) Supervision

- 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 leakage or damage. Any leaking package or cargo transport units should only be handled under the supervision of a responsible person.
- The port operator should ensure that no person, without reasonable cause, opens or otherwise interferes with any freight container, tank-container, portable tank or vehicle containing dangerous cargoes. When a freight container, tank-container, portable tank or 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 cargoes.
- 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.

f) Identification, packing, marking, labelling or placarding and certification

The port operator should ensure that dangerous cargoes 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.

g) Safe handling and segregation

A port operator transporting or handling dangerous cargoes should appoint at least one responsible person who has adequate knowledge of the national or international

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legal requirements concerning the transport and handling of dangerous cargoes, including the segregation of incompatible cargoes.

h) Emergency procedures

- The port operator should ensure that appropriate emergency arrangements are made and brought to the attention of all concerned. These arrangements should include:
 - the provision of appropriate emergency alarm operating points;
 - procedures for notification of an incident or emergency to the appropriate emergency services within and outside the port area;
 - procedures for notification of an incident or emergency to the port authority and port area users both on land and water;
 - the provision of emergency equipment appropriate to the hazards of the dangerous cargoes to be handled;
 - co-ordinated arrangements for the release of a ship in the case of an emergency; and
 - arrangements to ensure adequate access/egress at all times.
- The port operator should consider the necessity of arrangements for a safe and quick emergency escape, taking into account the nature of the dangerous cargoes and any special conditions.
- The "Medical First Aid Guidelines (MFAG)" annexed to IMDG Code shall be used to provide with those persons effected from damages caused by hazardous loads with medical first aid in case of any health issues occurring in consequence of accidents involving such loads.
- "Emergency Schedules (EmS)" annexed to IMDG Code shall be used for any emergencies involving hazardous loads.
- 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.

i) Emergency information

- The port operator should ensure that a list of all dangerous cargoes 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.
- The port operator should ensure that the responsible person for a warehouse, shed or area, where dangerous cargoes are handled, is as far as possible aware of the status of occupancy with the dangerous cargoes in his area and is available in case of emergencies.
- The port operator should ensure that the person responsible for cargo handling operations involving dangerous cargoes has the necessary information on measures to be taken to deal with incidents involving dangerous cargoes and that it is available for use in emergencies.
- Electronic or other automated information processing or transmission techniques shall be employed to provide access to information.
- Data sheets of hazardous 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.

- 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 cargoes are transported or handled.
- 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.
- The port operator should inform the master of any ship carrying or handling dangerous cargoes of the emergency procedures in force and the services available at the port.

j) Fire precautions

The port operator should ensure that:

- All parts of the port and any ship moored to it are at all times accessible to emergency services;
- Audible or visual alarms for emergency use are installed in the area or other means of rapid communication with emergency services are available;
- The handling of dangerous cargoes are kept clean and tidy;
- Before dangerous cargoes are handled, the master of a ship is informed of the location of the nearest means of summoning emergency services; and
- the lighting and other electrical equipment in areas where dangerous cargoes are present on the port is of a type safe for use in a flammable or explosive atmosphere.
- Places where smoking is prohibited are designated; and
- 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.
- 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.
- 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.
- 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.

k) Fire fighting

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

l) Environmental precautions

- The port operator should ensure that dangerous cargoes are only handled in areas which comply with the requirements of the regulatory authority.
- The port operator should ensure that any damaged package, unit load or cargo transport

unit containing dangerous cargoes is dealt with in accordance with the requirements of the regulatory authority and is not transported or handled unless the dangerous cargoes have been properly repacked and are in all respects fit and safe for further transport and handling.

- The port operator should ensure that, if necessary, any damaged package, unit load or cargo transport unit containing dangerous cargoes 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.
- 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.
- Necessary actions shall be taken so that soil, water or areas of water discharge is/are not contaminated with any hazardous materials handled at onshore facilities. Additionally, these actions shall be applied for the piping line used during the handling of hazardous materials and for areas with conveyor system.
- The capability to remove any contaminated bilge water, dirty ballast, sludge, slope and load waste from the vessel shall be provided.

m) Pollution combating

- The port operator should ensure that adequate equipment is available to minimize the damage in case of a spillage of dangerous cargoes.
- The equipment includes petroleum dispersion preventive fences, condensate lids, absorbing and neutralizing agents as well as cleaning agents and portable collection basins.
- The port operator should ensure that personnel involved in the transport and handling of dangerous cargoes are trained and practised in the use of pollution combating equipment and facilities in accordance with the requirements of the regulatory authority.

n) Reporting of incidents

- The port operator, within his area of responsibility, should ensure that, if an incident occurs during the handling of dangerous cargoes 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 cargoes.
- 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.
- The port operator should ensure that any incident involving dangerous cargoes 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.
- The port operator should ensure that any damaged or leaking package, unit load or cargo transport unit containing dangerous cargoes is reported immediately to the port authority and that suitable remedial action is taken.

o) Inspections

The port operator, where appropriate, should:

- Check documents and certificates concerning the safe transport, handling, packing and stowage of dangerous cargoes in the port area at the time of receipt;
- Check, where practicable, packages, unit loads and cargo transport units containing dangerous cargoes 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);
- Check freight containers, tank-containers, portable tanks and vehicles containing dangerous cargoes to ensure that they have a current safety approval plate in accordance with the International Convention for Safe Containers (CSC), 1972, as amended, when applicable, or have been approved in accordance with the relevant provisions of the IMDG Code or by a certification or approval system of an appropriate authority; and
- Check, by external examination, the physical condition of each freight container, tank-container, portable tank or vehicle containing dangerous cargoes for obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.
- The port operator should make such checks regularly to ensure implementation of the safety precautions in the port area and the safety of transport.
- If any of the checks mentioned above reveal deficiencies which may affect the safe transport or handling of dangerous cargoes 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 cargoes.
- 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 cargoes.

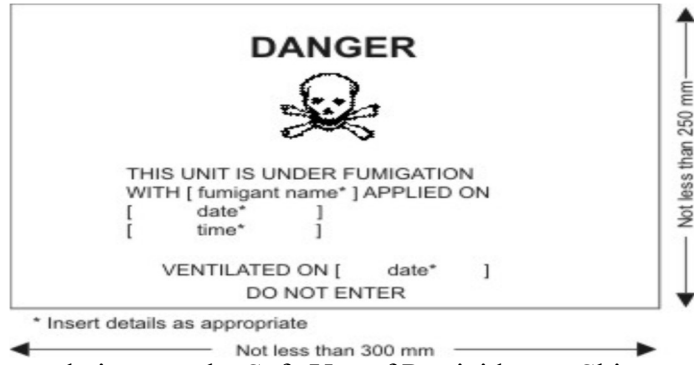
p) Hot work and other repair or maintenance work

- 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.
- 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 cargoes, is carried out.
- 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.

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q) Fumigation of warehouses, sheds or cargo transport units

- The port operator should ensure that fumigation of warehouses, sheds or cargo transport units is carried out in accordance with the requirements of the regulatory authority. Reference should be made to the Recommendations on the Safe Use of Pesticides in Ships in the Supplement to the IMDG Code.
- The port operator should ensure that fumigation of cargo transport units is carried out only in areas designated by the port authority for this purpose.
- The port operator should ensure that fumigated warehouses, sheds or cargo transport units are conspicuously marked, informing anyone approaching them of the hazard involved.



- Recommendations on the Safe Use of Pesticides on Ships contain a warning sign to be used for fumigated ships, ship compartments, cargo containers, fuel ships. There are IMO/ILO/UN ECE Guidelines for Packaging of Cargo Transport Units (CTUs).
- The port operator should ensure that no person enters a warehouse, shed or cargo transport unit unless it has been properly ventilated, determined gas-free, fumigation warning signs have been removed and a responsible person has determined that it is safe to enter and issued a clearance certificate.

r) Contaminated wastes

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

s) Alcohol and drug abuse

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

t) Weather conditions

- The port operator, within his area of responsibility, should not permit dangerous cargoes to be handled in weather conditions which may seriously increase the risk.
- Any explosive and hazardous liquid bulk loads or any unprotected load, which reacts dangerously when in contact with water, shall not be carried in rainy weather involving thunderstorms.

u) Lighting

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

v) Handling equipment

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

w) Protective equipment

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

y) Signals

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

The specified dangerous cargoes should include:

- bulk liquids with a flashpoint below 60°C closed cup;
- bulk flammable and/or toxic gases; and
- 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.

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 cargoes. Vessels exhibiting such signals may be subject to the special requirements and special instructions of the port authority.

The following four scenarios should be considered:

- the ship is moored or at anchor by day;
- the ship is moored or at anchor at night;
- the ship is under way by day; or
- the ship is under way at night.

When practicable, a dedicated anchorage or port should be provided for vessels carrying dangerous cargoes requiring the exhibition of such signals.

Special restrictions may be applied to:

- access to the vessels;

- radio and radar transmissions;
- transiting the anchorage; and
- passing of ships moored or anchored.

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:

- by day flag “B” of the International Code of Signals; and
- by night an all-round fixed red light.

z) Communications

The port authority should ensure that every ship engaged in the transport of dangerous cargoes 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.

aa) Areas

- Dangerous cargo areas

- 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.
- The spaces should enable an adequate segregation of dangerous cargoes in accordance with the legal requirements of the regulatory authority.
- Dangerous cargo areas should have separate areas with all necessary facilities appropriate to the hazards emanating from the cargoes to be kept. Where appropriate these facilities should include separate ventilation, drainage, fire resisting walls, ceilings, etc.
- Those areas where hazardous materials are handled shall be furnished with necessary equipment and devices to prevent potential harmful effects of such hazardous materials.
- The areas where hazardous materials 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 hazardous materials shall be kept open, if any hazardous materials 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.

- Container stacking areas/lorry parking areas

- Separate areas may be designated for specific dangerous cargoes.
- Segregation requirements of the regulatory authority should be met when designating areas.
- Care should be taken that, in case of an emergency, adequate access is provided for handling equipment, emergency services, etc.
- Adequate emergency facilities should be provided. These should be appropriate to

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the hazards of the dangerous cargoes to be handled.

- Fumigation areas

- Separate areas should be provided or designated for ships and/or cargo transport units to be fumigated.
- Whenever practicable, these 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.

- Special areas for damaged dangerous cargoes and wastes contaminated with dangerous cargoes

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

- Repairing/cleaning facilities

- Where repair or cleaning facilities for ships or cargo transport units are provided, they should be situated well away from any area where dangerous cargoes are transported or handled. This should not preclude the carrying out of minor voyage repairs on ships at cargo handling ports or cleaning of cargo tanks at tanker terminals.
- Cleaning facilities should be designated and constructed to protect the environment when environmentally hazardous substances are used or are otherwise involved, in the cleaning process.

ab) Reception facilities

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

ac) Training

The personnel who are in charge of actions and operations for the loading/unloading of hazardous materials 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 OF DANGEROUS GOODS, HANDLING, LOADING / UNLOADING, HANDLING, SEPARATION, STACKING AND STORING

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 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 are 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 stowage, segregation, marking, labeling and storing dangerous goods safely, those handling dangerous goods must know exactly what hazards these 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 the code and are assigned to one of the classes 1 – 9 according to the hazard or the most predominant hazards they present.

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

Class 2: Gases

Class 3: Flammable liquids

Class 4: Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

Class 5: Oxidizing substances; Organic peroxides








Class 6: Toxic substances; Infectious substances










Class 7: Radioactive material






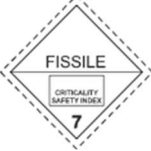


Class 8: Corrosive substances

Class 9: Miscellaneous dangerous substances and articles

The numerical order of the classes and divisions does not indicate the degree of danger.

Class 1		
	1	Explosives
Sub-Class		
	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 liquid
Class 4		
	4.1	Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives
	4.2	Spontaneously combustible solids
	4.3	Combustible solids when in contact with water
Class 5		
	5.1	Oxidizing substance
	5.2	Organic peroxide

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

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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.



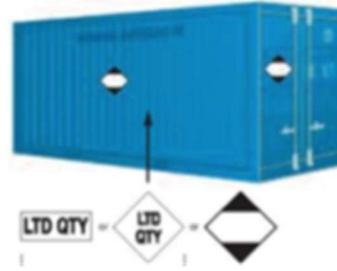
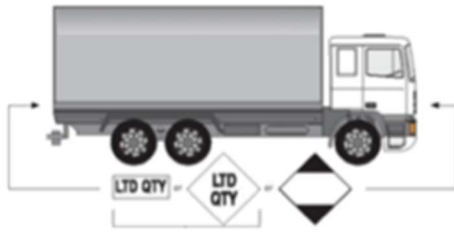
Packages



Transport units with a single tank division



Packaged Dangerous Goods

**Dangerous Cargo Container****Limited Quantity****Limited Quantity**

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


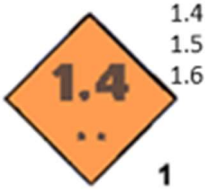
The IMDG Code determines that all “cargo transport units” containing dangerous goods must be placarded. In this context, cargo transport units are containers, containers for liquids, tank vehicles, vehicles transporting goods by land, railway wagons with water tanks, good tanks destined for intermodal 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

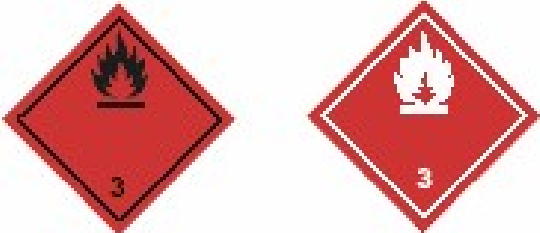
	<p>Divisions 1.1 / 1.2 / 1.3 Symbol – exploding bomb: black Background – orange * *Place for division – to be left blank if explosive is the subsidiary hazard * Place for compatibility group – to be left blank if explosive is the subsidiary hazard Number 1 – bottom corner</p>
	<p>Divisions 1.4 / 1.5 / 1.6 Background – orange Division numbers – black (numerals shall be about 30 mm in height and be about 5 mm thick for a label measuring 100 mm x 100 mm) * Place for compatibility group Number 1 – bottom corner</p>

Class 2 – Gases



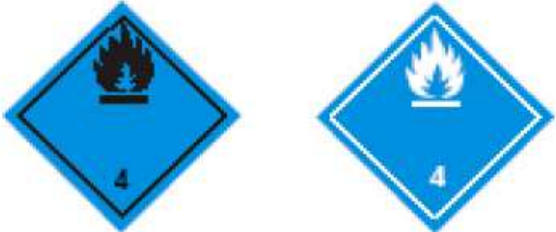
 <p style="text-align: center;">(No.2.1)</p>	<p>Label no 2.1: Flammable gases Symbol – Flame: black or white Background – Red Number 2 – bottom corner</p>
 <p style="text-align: center;">(No.2.2)</p>	<p>Label no 2.2: Non-flammable, non-toxic gases Symbol – Gas cylinder: black or white Background – green Number 2 – bottom corner</p>

	<p>Label no 2.3: Toxic gases Symbol – Skull and crossbones: black Background – white Number 2 – bottom corner</p>
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Class 3 – Flammable liquids

	<p>Label no 3 Symbol – Flame: black or white Background – red Number 3 – bottom corner</p>
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Class 4 – Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

	<p>Label no 4.1 Symbol – Flame: black Background – white with 7 vertical red stripes Number 4 – bottom corner</p>
	<p>Label no 4.2 Symbol – Flame: black Background – upper half white, lower half red Number 4 – bottom corner</p>
	<p>Label no 4.3 Symbol – Flame: black or white Background – blue Number 4 – bottom corner</p>


Class 5 – Oxidizing substances and organic peroxides



	<p>Label no 5.1 Symbol – Flame over circle: black Background – yellow Number 5 – bottom corner</p>
	<p>Label no 5.2 Symbol – flame: black or white Background – upper half red, lower half yellow Number 5 – bottom corner</p>

Class 6 – Toxic and Infectious substances


	<p>Label no 6.1 Symbol – skull and crossbones: black Background – white Number 6 – bottom corner</p>
	<p>Label no 6.2 Symbol – Three crescents superimposed on a circle: black Background – white Number 6 – bottom corner</p>

Class 7 – Radioactive materials


	<p>Category I – WHITE Symbol – trefoil: black Background – white Text (mandatory): black in lower half of label: ‘‘RADIOACTIVE, CONTENTS...’’ "ACTIVITY ..." One red vertical bar shall follow the word: "RADIOACTIVE" Number 7 – bottom corner</p>
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	<p>Category II – YELLOW Symbol – trefoil: black Background – upper half yellow with white border, lower half white Text (mandatory): black in lower half of label: ‘‘RADIOACTIVE, CONTENTS...’’ "ACTIVITY ..." Two red vertical bars shall follow the word: "RADIOACTIVE" Number 7 – bottom corner</p>
	<p>Category III – YELLOW Symbol – trefoil: black Background – upper half yellow with white border, lower half white Text (mandatory): black in lower half of label: ‘‘RADIOACTIVE, CONTENTS...’’ "ACTIVITY ..." Three red vertical bars shall follow the word: "RADIOACTIVE" Number 7 – bottom corner</p>


Class 8 – Corrosive substances

	<p>Label no 8 Symbol – Liquids spilling from two glass vessels and attacking a hand and a metal: black Background – upper half white, lower half black with white border Number 8 – bottom corner</p>
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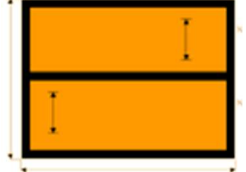
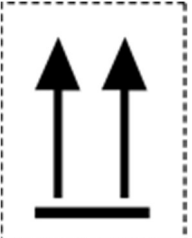
Class 9 – Miscellaneous dangerous substances and articles, including environmentally hazardous substances

	<p>Label no 9 Symbol – 7 vertical stripes in upper half: black Background – white Number 9 – bottom corner</p>
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	<p>Label no 9A</p> <p>Symbol – 7 vertical stripes in upper half: black; battery group, one broken and emitting flame in lower half: black</p> <p>Background – white</p> <p>Number 9 – bottom corner</p>
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Other labels

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

Placards for Marine Pollutants

	<p>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.</p>
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4.4 Signs and packing groups 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, substances other than those of Classes, 1, 2, 5.2, 6.2 and 7, and other than self-reactive substances of Class 4.1 are assigned to packing groups in accordance with the degree of danger they represent:

Packing group I: Substances presenting high danger

Packing group II: Substances presenting medium danger

Packing group III: Substances presenting low 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

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

Incompatible hazardous substances 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 cargo 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. Alkalies

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.”

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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

Regarding Class 1 (Explosives) the code establishes the following 5 categories for stowage onboard:

Category	Cargo Ships	Passenger Ships
01	On deck or below deck	On deck or below deck
02	On deck or below deck	On deck in closed transport units or under deck in closed
03	On deck or below deck	On deck only in closed cargo transport
04	On deck or below deck	PROHIBITED
05	On deck in closed cargo transport units or under deck	On deck in close cargo transport units or in closed

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 hazardous materials applicable storage at storage area

4.6.1 Segregation Categories

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 and articles	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 Goods List	-

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 cargo 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 deposits. 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, polymerizing substances and solid desensitized explosives	4.1	A	0	0	0	0	A	0	A	S	0	A	0
Substances liable to spontaneous combustion	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	6.1	0	0	0	0	0	A	0	A	A	0	0	0
Corrosives substances	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, requires so)
- “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 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.

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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 separation table according to the class of dangerous goods,
- Warehouse / port separation distance of dangerous goods storage,
- Separation terms,
- Dangerous cargo documentation,
- Loads containing dangerous emergency action flowchart issues,

Prepared as Hazardous Material Handbook in the size of a pocketbook and given as annexed hereto. The Dangerous Goods Handbook was distributed to the shore facility personnel.

6. PROCEDURES FOR THE OPERATION

6.1 Procedure carrying dangerous goods safely berthing, loading/unloading, shelter or anchorage during the day and at night

- a) Direct when and where a ship, having any dangerous cargoes 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 cargoes involved, the environment, the population, the weather conditions;
- b) Direct, in an emergency, a ship having any dangerous cargoes 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
- c) Attach such requirements to any such directions as are appropriate to local circumstances and the quantity and nature of the dangerous cargoes involved.
- d) The port operator should ensure that:
 - adequate and safe mooring facilities are provided; and
 - 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 facilities

- a) Explosives or liquid bulk dangerous cargoes should be handled during thunderstorms nor should unprotected cargoes, which react dangerously when in contact with water, be handled during rain.
- b) Solid bulk dangerous cargoes 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.
- c) Because of the nature of explosives the handling of dangerous cargoes 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 hazardous materials are handled, stowed and stored

a) 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.

b) In addition to the safety precautions required by 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 port, should add any additional safety precautions required by the ship and/or port.

c) These should include:

- 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;
- the removal of dangerous cargoes and other flammable substances and objects away from the working and adjacent areas. This includes scale, sludge, sediment and other possible flammable material;
- efficient protection of flammable structural members, e.g. beams, wooden walls, floors, doors, wall and ceiling coverings against accidental ignition; and
- 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.

d) 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.

e) While carrying out hot work it is essential that:

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

f) 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.

g) 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.

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

6.4 Temperature Controlled Materials

6.4.1 Self-Reactive Substances (SR)

Self-reactive substances are thermally unstable substances liable to undergo a strongly exothermic decomposition even without participation of oxygen (air).

The decomposition of self-reactive substances can be initiated by heat, contact with catalytic impurities (e.g. acids, heavy metal compounds, bases), friction or impact. The rate of

decomposition increases with temperature and varies with the substance. Decomposition, particularly if no ignition occurs, may result in the evolution of toxic gases or vapours. For certain self-reactive substances, the temperature shall be controlled. Some self-reactive substances may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Certain self-reactive substances burn vigorously.

Class 4.1 Self-reactive Substances (SR2)

UN 3231 – UN 3232 – UN 3233 - UN 3234 – UN 3235 – UN 3236 – UN 3237 – UN 3238 – UN 3239 - UN 3240

6.4.2 Polymerizing Substances (PM)

Polymerizing substances are substances which, without stabilization, are liable to undergo a strongly exothermic reaction resulting in the formation of larger molecules or resulting in the formation of polymers under conditions normally encountered in carriage.

Class 4.1 Polymerizing Substances (PM2)

UN 3533 - UN 3534

6.4.3 Organic peroxides (P)

Organic peroxides are organic substances which contain the bivalent -O-O- structure and may be considered derivatives of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals.

Organic peroxides are liable to exothermic decomposition at normal or elevated temperatures. The composition can be initiated by heat, contact with impurities (e.g.acids, heavy metal compounds, amines), friction or impact. The rate of decomposition increases with temperature and varies with the organic peroxide formulation. Decomposition may result in the evolution harmful, or flammable, gases or vapours. For certain organic peroxides the temperature shall be controlled during carriage. Some organic peroxides may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Many organic peroxides burn vigorously. Contact of organic peroxides with the eyes is to be avoided. Some organic peroxides will cause serious injury to the cornea, even after brief contact, or will be corrosive to the skin.

Class 5.2 Organic Peroxides (P2)

UN 3111 – UN 3112 – UN 3113 - UN 3114 – UN 3115 – UN 3116 – UN 3117 – UN 3118 – UN 3119 - UN 3120

6.4.4 Carriage of temperature controlled materials**Cargo Transport Units Under Temperature Control**

If the temperature of certain substances (such as organic peroxides and self-reactive substances) exceeds a value which is typical of the substance as packaged for transport, a self-accelerating decomposition, possibly of explosive violence, may result. To prevent such decomposition, it is necessary to control the temperature of such substances during transport. Other substances not requiring temperature control for safety reasons may be transported under controlled temperature conditions for commercial reasons.

The provisions for the temperature control of certain specified substances are based on the assumption that the temperature in the immediate surroundings of the cargo does not exceed 55°C during transport and attains this value for a relatively short time only during each period of 24 h.

If a substance which is not normally temperature controlled is transported under conditions where the temperature may exceed 55°C, it may require temperature control; in such cases, adequate measures shall be taken.

A self-accelerating decomposition temperature (SADT)* shall be determined in order to decide if a substance shall be subjected to temperature control during transport. The relationship between SADT, the control temperature and the emergency temperature is as follows:

Type of receptacle	SADT [†]	Control temperature	Emergency temperature
Single packagings and IBC	20°C or less over 20°C to 35°C over 35°C	20°C below SADT 15°C below SADT 10°C below SADT	10°C below SADT 10°C below SADT 5°C below SADT
Portable tanks	< 50°C	10°C below SADT	5°C below SADT

The actual transport temperature may be lower than the control temperature but shall be selected so as to avoid dangerous separation of phases.

Prior to the use of cargo transport unit, the refrigeration system shall be subjected to a thorough inspection and a test to ensure that all parts are functioning properly.

Refrigerant gas shall only be replaced in accordance with the manufacturer's operating instructions for the refrigeration system. Prior to filling replacement refrigerant gas, a certificate of analysis from the supplier shall be obtained and checked to confirm that the gas meets refrigeration system specifications. In addition, if concerns about the integrity of the supplier and/or the refrigerant gas supply chain give rise to suspicion of contamination of the gas, the replacement refrigerant gas shall be checked for possible contamination prior to use. If the refrigerant gas is found to be contaminated, it shall not be used, the cylinder shall be plainly marked "CONTAMINATED", the cylinder shall be sealed and sent for recycling or disposal, and notification shall be given to the refrigerant gas supplier and authorized distributor and competent authority(ies) of the countries to which the supplier and distributor reside, as appropriate. The date of last refrigerant replacement shall be included in the maintenance record of the refrigeration system.

Note: Contamination can be checked by using flame halide lamp tests, gas sniffer tube tests or gas chromatography. Replacement refrigerant gas cylinders may be marked with the test result and the date of testing.

When a cargo transport unit is to be filled with packages containing substances having different control temperatures, all packages shall be pre-cooled to avoid exceeding the lowest control temperature.

In the event that non-temperature-controlled substances are transported in the same cargo transport unit as temperature controlled substances, the package(s) containing substances that

require refrigeration shall be stowed in such a way as to be readily accessible from the door(s) of the cargo transport unit.

If substances with different control temperatures are loaded in the cargo transport unit, the substances with the lowest control temperature shall be stowed in the most readily accessible position from the doors of the cargo transport unit.

The door(s) shall be capable of being opened readily in case of emergency so that the package(s) can be removed. The carrier shall be informed about the location of the different substances within the unit. The cargo shall be secured to prevent packages from falling when the door(s) is (are) opened. The packages shall be securely stowed so as to allow for adequate air circulation throughout the cargo.

The master shall be provided with operating instructions for the refrigeration system, procedures to be followed in the event of loss of control and instructions for regular monitoring of operating temperatures.

Documentation – Transport Document

For self-reactive substances and polymerizing substances of class 4.1 and for organic peroxides which require temperature control during transport, the control and emergency temperatures shall be indicated on the dangerous goods transport document, as follows:

“Control temperature: ... °C Emergency temperature: ... °C”

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

a) The following documents related to hazardous substances are kept up to date.

- CSC: 1972 dated International Convention for Safe Containers as amended
- 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
- SOLAS 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
- IBC Code: International Code for the Construction and Equipment of Vessels Carrying Hazardous Chemicals in Bulk
- IGC Code: International Code for the Construction and Equipment of Vessels Carrying Liquefied Gases in Bulk



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b) The Operational Division for Hazardous Materials handled by our Port shall develop all records fully and keep the same for submission upon request regarding any hazardous materials which arriving at the port, shipped from the port, stored at the port, and stored at the port on a temporary basis. The records of hazardous materials are limited to the personnel who need to know the same.

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

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

- UN 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

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

c) Procedures regarding to appropriate identification of hazardous substances delivered to the facility, correct use of shipping names of dangerous cargo, 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.

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

- UN 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

e) 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.

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f) 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 hazardous substances delivered to the facility, correct use of shipping names of dangerous cargo, 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.

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

- UN 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

b) 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.

c) 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 Hazardous materials safety information sheets (SDS).

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).

- UN 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).

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.

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.

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

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

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

7.6 Information about the quality management system.

Roda Port Storage and Logistics Operations Inc. implements and manages the ISO 9001:2015 quality management system.

8. EMERGENCY SITUATION, EMERGENCY PREPAREDNESS AND RESPONSE**8.1 Response procedures for hazardous substances that are dangerous for life, property and/or environment and hazardous situations involving hazardous materials**

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; in others, sheltering in-place may be the best course. Sometimes, the set of actions may be used in combination. In any emergency, officials need to quickly give the public instructions. The public will need continuing information and instructions 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 as well. This list indicates what kind of information may be needed to make the initial decision.

- **Dangerous Goods**
 - Degree of health hazard
 - Chemical and physical properties
 - Amount involved
 - Containment/control of release
 - Rate of vapor movement
- **The Population Threatened**
 - Location
 - Number of people
 - Time available to evacuate or shelter in-place

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- Ability to control evacuation or shelter in-place
- Building types and availability
- Special institutions or populations, e.g., nursing homes, hospitals, prisons

- **Weather Conditions**

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

8.1.3 Protective Actions

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.

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.

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 Evacuate

- Evacuate means** to move all people from a 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.
- Begin evacuating people nearby 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.
- They should not be permitted to congregate at such distances. Send evacuees to a definite place, by a specific route, far enough away so they will not have to be moved again if the wind shifts.

8.1.5 Shelter In-Place

- Shelter In-Place means people should seek shelter inside a building and remain inside until the danger passes. Sheltering in-place is used 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.

- b) In-place protection (shelter in-place) may not be the best option if
- the vapors are flammable;
 - if it will take a long time for the gas to clear the area; or
 - if buildings cannot be closed tightly.
 - Vehicles can offer some protection for a short period if the windows are closed and the ventilating systems are shut off. Vehicles are not as effective as buildings for in-place protection.
- c) It is vital to maintain communications with competent persons inside 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.
- d) 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 hazardous materials in line with this guideline and pursuant to IMDG Code.

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

8.3.1 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.

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8.3.2 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.

8.3.3 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,
- d) 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),
- e) Meteorological conditions,
- f) UN number of hazardous material and description of proper handling (the legislation provided in the description of hazardous materials shall apply) and quantity,
- g) Hazard class and sub-hazard class, if any, of hazardous materials,
- h) Packaging group of hazardous materials,
- i) Additional risks posed by hazardous materials, if any, such as marine pollutant,
- j) Marking and labelling details of hazardous materials,

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- k) Properties and number of packing, cargo handling unit and container by which hazardous materials are carried, if any,
- l) Manufacturer, shipper, transporter and recipient of hazardous materials,
- m) Extent of resulting damage/pollution,
- n) 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.

Communication

- 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
- 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 VHF marine band radio provided by the Port.
- 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.

Reports

- 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.
- The dangerous goods accidents and incidents must be reported to the Main Search and Rescue Coordination Center of the Ministry and to Gemlik Port Authority as soon as possible, first by telephone and then by fax or by e-mail and also to the Administration via deniz.tmkt@uab.gov.tr. The report format shall be free-form and include 8.4 details in full.

8.6 Coordination, support and cooperation method with authorities.

- All accidents related to hazardous materials 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.
- 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 and teams shall be caused to get prepared for providing with the adjacent facility with assistance.
- 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.
- 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

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consideration of class, quantity and hazard risk of loads available at hazardous cargo 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 Separation System

- All emergencies should be reported to the Port Authority.
- 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..
- 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.
- The ship's machinery, steering gear and Marine Systems equipment shall be ready for use immediately.
- All cargo discharge, ballast discharge process must be stopped and shall be prepared for the separation process.
- Salt water system of the ship must be watered and water mist must be used for strategic departments..
- 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 a warning notice must be published.
- If the necessary responds are over the terminal resources for all emergencies, local police or fire department must be reported immediately.
- The decision to depart the ship under control is set out on the safety principle and it should cover the following requirements:
 - The adequacy of the Trailers
 - The ship's ability to depart with its own power
 - The availability of a safe place that a ship can or will be taken in an emergency case.
 - Fire-fighting competence
 - The proximity of other vessels
 - Fire Ropes
- 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

- If all the preparations above examined and deemed appropriate, the ship will be immediately departed.
- Emergency separation will be provided by the fulfillment of the following processes in

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order.

- A close coordination and cooperation between Port Facility, Ship and Port Authorities is required for each phase.
- Emergency Separation Process is as below.
 - Activating an alarm
 - Inform about the emergency by VHF phone
 - Suspension of operation
 - Making the first official assessment of the situation between the ship's captain and officer of Port Facility.
 - 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 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.

8.7.3 Post Emergency Separation

- Declaration of the decision on vessel back up and navigation route after the separation process of vessel.
- Transition / mooring of the vessel to designated area in company with towboats or its own machine
- Port Facility: Determining possible damages or deficiencies through examining the port facility
- Consideration of the time when the vessel and port facility become available for freight handling
- 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

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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 hazardous goods and wastes contaminated with hazardous goods.

8.8.1 Waste Collecting and Handling

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

8.8.2 Waste disposal

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

8.8.3 Contaminated packages

- 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.
- 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 Hazardous cargos 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

- Have to be indicated within annual training plans.
- May be planned as local or general responses,
- Safety, Spillage, etc. may be combined in practice scenarios,
- Practices can be performed with or without notices.
- Practices are based upon different emergency scenarios.
- A practice may be actually performed as it can be negotiated as a desk work or a seminary,
- Each practice is prepared with scenarios of different hours, days, seasons and incidents.

8.10 Information on fire protection systems

Emergency and fire equipment is given as follows:

1. Fire hydrants,
2. Fire extinguishers,
3. Fire cabinets and Fire hoses,
4. On-site fire alarm detectors,
5. 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.

a) Fire-Protection Water Tanks and Fire-Protection Water

- 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.
- In case of sudden drawdown on water level, it must be checked for a seep or leakage and repaired if necessary.
- Following the annual check, if necessary, internal and external cleaning and maintenance should be performed in sealed stores.

b) Fire-Protection Water Pumps

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

- Fire-protection water pumps must be operated and recorded at least 1 hour a week.
- 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 be filled up with water until they overflow and when the water stops at the plug level, the plug must be tightened properly.
- 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.
- 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.
- Monometers must be checked regularly and one or more pumps must be stopped in case of excess pressure increases.
- Delivery pipes of pumps must be equipped with valves initially and check valves thereon.
- 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.
- 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.
- 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.
- For pumps driven by diesel engine, starting the engine must be carried out in line with the instructions.
- In condition that a deficiency or malfunction is detected as a result of control, it is fixed by the responsible.

c) Sprinkler System

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.

d) Fire Protection Hydrant Installation

- 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.
- 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.
- 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.
- 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.
- 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.

e) Portable Extinguishers

- 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.
- 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.
- 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.

f) Protection against freezing**- Protection of generators**

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.

- Protection fire-protection water pumps

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

- **Protecting of fire-protection distribution pipes**

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.

- The facility is a system with established alternative competency which backs up firefighting equipment.
- The support of adjacent facilities, Fire departments and AFAD (Disaster and Emergency Management Directorate) shall be sought in cases where the facility's own firefighting equipment is inadequate or out of service.
- Other hazardous and combustible materials / vehicles, which are likely to be affected from fire, shall be removed away from the area, if possible.
- A necessity may arise to determine under which conditions assistance and support are provided and their scope.
- 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.

In addition to those mentioned above, there is no risk control equipment.

9. HEALTH AND SAFETY AT WORK PLACES

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

a) 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.

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

- Danger and harms of chemical substance in terms of health and safety.
- Turkish material safety verse form (SDS)to be provided from sellers, manufacturers or importers.
- Duration, type and level of contagion.
- Quantity, conditions of usage and frequency of usage of chemical substance.
- Vocational exposition limit values and biological limit values given at annexes of this regulation

- . Effect of preventive measures to be taken or taken.
- If available, results of last health surveillance.
- Each of these substances and their interactions with each other at works that was worked in with more than one chemical substances.

c) 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.

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

e) Measures to be taken at studying when dangerous chemical substances.

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

- Proper regulation and organization of work are done at Harbor Structure.
- Studies with dangerous chemical substances are made with minimum number of employees.
- Substance quantity and exposition period employees will be exposed is allowed to be at minimum level.
- Chemical substance quantity to be used at Harbor Structure is kept at minimum level.
- Work place building and extensions are always kept clean and neat.
- Proper and sufficient conditions are provided for employees' personnel cleaning.
- Necessary regulations are made to store, transport, use and process dangerous chemical substances, waste and residuals properly at Harbor Structure.
- Safe or less dangerous chemical substance is used instead of dangerous substance in terms of employees' health by using substitution method. If 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:
- 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.
- Block protection measures like installing sufficient ventilation system and proper work organization are taken to prevent risk at its source.
- 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.

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

g) 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.

h) 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.

i) 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:

- 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,
- 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,
- 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.

j) 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.

k) Arrangements to reduce effect of explosion pressure are made.

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

m) 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

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:

- 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
- 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.
- 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

a) 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;

- Information gained as a result of the risk evaluation.
- 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.
- Necessary precautions and things to do so that the worker's do not danger themselves or the other workers.
- Information on the Turkish material safety data sheets supplied from the manufacturer for the dangerous chemical substances.
- Information on labelling/locking the parts, covers, pumping system and suchlike instalment where the dangerous chemical substances are according to the regulations.

b) 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 Entry permit measures and procedures for enclosed spaces.

Dangerous goods are not handled in the closed area.

10. OTHER POINTS

10.1 Validity of the Dangerous Goods Conformity Certificate

Dangerous Goods Conformity Certificate is valid until 29.06.2025.

10.2 Responsibilities of the Dangerous Goods Safety Consultant

a) Under the responsibility of the head of the undertaking, to seek by all appropriate means and by all appropriate action, within the limits of the relevant activities of that undertaking, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way.

b) Monitoring compliance with the requirements governing the carriage of dangerous goods;

c) Advising his undertaking on the carriage of dangerous goods;

d) Preparing an annual report to the management of his undertaking or a local public authority, as appropriate, on the undertaking's activities in the carriage of dangerous goods. Such annual reports shall be preserved for five years and made available to the national authorities at their request.

e) DGSAs, which are authorized under the IMDG Code, prepare quarterly reports regarding the responsibilities of the coastal facilities they serve and notify this report to the Administration. In case of deficiencies or inaccuracies in the reports, the Administration or the Port Authority is authorized to conduct inspections at the coastal facility.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the undertaking;

a) the procedures for compliance with the requirements governing the identification of dangerous goods being transported;

b) the undertaking's practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;

c) the procedures for checking the equipment used in connection with the carriage, packaging, filling, loading or unloading of dangerous goods;

d) the proper training of the undertaking's employees, including on the changes to the regulations, and the maintenance of records of such training;

e) the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the carriage, packaging, filling, loading or unloading of dangerous goods;

f) Investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the carriage, packaging, filling, loading or unloading of dangerous goods;

g) the implementation of the appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;

h) the account taken of the legal prescriptions and special requirements associated with the carriage of dangerous goods in the choice and use of sub-contractors or third parties;

i) Verification that employees involved in the consigning, carriage, packaging, filling, loading or unloading of dangerous goods have detailed operational procedures and instructions;

j) the introduction of measures to increase awareness of the risks inherent in the carriage, packaging, filling, loading and unloading of dangerous goods;

k) The implementation of verification procedures to ensure the presence on board the means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;

l) Implementation of verification procedures to ensure compliance with the requirements governing packaging, filling, loading and unloading.

10.3 Matters for carriers of the hazardous substances 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.).

a) Packed dangerous cargoes and bulk dangerous cargoes (liquid or solid)

- Name of the consignor (shipper) and date of delivery to the port area, normally not less than 24 hours before arrival;
- For packaged dangerous cargoes: 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;
- for bulk dangerous cargoes: the product name and any other information required by the relevant IMO code; and
- the name of the ship into which the dangerous cargoes are to be loaded (if applicable), the ship's agent and the port.

b) Necessary certificates

- Hazardous Cargo Declaration,
- Hazardous Cargo Transport Dispatch,
- Multimodal Dangerous Goods Form,
- Hazardous Cargo 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 evaluation or transport conformity certificate if gas measurement is done,

Without lack of compulsory documents regarding the transport listed above, hazardous cargo 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 hazardous cargo too.

d) Speed Limit in Port Facility

Speed limit in our port facility is 20 km/sa.

10.4 Matters for carriers of the hazardous substances arriving/leaving coastal facility by sea (matters on day/night signals to be shown by ships carrying hazardous goods and vessels, cold and hot work procedures in ships and so on).**a) Arrival by sea****1) Packaged hazardous cargos:**

- Name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;
- Suitable Dispatch name of hazardous cargos, 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;
- each cargo, dispatch or item in list should be numbered successively for easy reference.
- stacking of hazardous cargo in a way to mark the ones to be unloaded and left in ship;
- the hazardous cargo to be left in ship should be indicated in a manner to refer the numbers in list (see above)
- condition of hazardous cargos in case of possibility of occurrence an inappropriate hazard and
- any known defect that will able to affect security of ship or port area.

2) Hazardous bulk cargo (liquid or solid):

- name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;
- a list showing product name of hazardous cargos and other information necessitated with related IMO Code
- 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;
- Hazardous cargos to be left in ship should be indicated in a way to refer the numbers in list;
- 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 hazardous

cargos and taking under protection of cargo and transport system, the equipment related to the cargo shipped bulk and a defect known in instrumentation and

- 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 hazardous cargos 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 voids concerning packaged hazardous cargos are:
 - Container number
 - shipping license no or reference (if IMDG Code is class 1 or 7)
 - name and communication details of receiver or local carrier (if available)

b) Departure by sea**1) Packed hazardous cargoes:**

- name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;
- Suitable Dispatch name of hazardous cargos, 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;
- stacking place on board of hazardous cargos.

2) Hazardous bulk cargoes (liquid or solid):

- name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;
- a list showing product name of hazardous bulk cargos and other information necessitated by related IMO Code
- 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;
- Stacking on board or place of hazardous cargos.

10.5 Additional points will be added by the port facility**a) Training****1) Management**

- Management should ensure that all shipboard and shore personnel involved in the transport or handling of dangerous cargoes or in the supervision thereof are adequately trained, commensurate with their responsibilities within their organization.
- 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 cargoes, management should carry out an

assessment of the risks involved. In certain cases a quantified risk assessment may be necessary.

2) Personnel (cargo companies, port operators and ships)

- Every person engaged in the transport or handling of dangerous cargoes should receive training on the safe transport and handling of dangerous cargoes, commensurate with his responsibilities.
- Should receive general awareness/familiarization training, function-specific training and safety training.

b) Training content**1) General awareness training**

Every person should receive training on the safe transport and handling of dangerous cargoes, commensurate with his duties. The training should be designed to provide familiarity with the general hazards of relevant dangerous cargoes and the legal requirements. Such training should include a description of the types and classes of dangerous cargoes; 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.

2) Function-specific training

Every person should receive detailed training concerning specific requirements for the transport and handling of dangerous cargoes which are applicable to the function that he performs.

3) Safety training

Each person should receive training commensurate with the risks in the event of a release of dangerous cargoes and the functions he performs, on:

Such training should be provided or verified upon employment in a position involving the transport or handling of dangerous cargoes and should be periodically supplemented with retraining, as deemed appropriate by the regulatory authority.

Records of all safety training undertaken should be kept by the employer and made available to the employee if requested.

10.6 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. For hot works, when handling dangerous cargo at our port facility and before starting any operations on the dangerous cargo area, written permit regarding applicability of hot works in question will be taken from port authority. 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.

a) with the aim of being sure about that the areas on which work is to be done is no burning and/or explosive environment and 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 hazardous cargos 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)

d) sealing and ensuring impermeability of open pipes, pipe transitions, valves, joints, gapes and open parts with the purpose of preventing spreading of flame, spark and hot particles from working areas to adjacent areas or other areas

4. warrant of the hot work to be done and a plate on which the safety measures to be taken are written will be hanged in working area and entrances of all working area. Warrant and safety measures should be visible easily and will be understadable clearly 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 no current condition have changed in working environment.

b) While hot works are performed, at least one fire tube or other fire entinguisng equipment shall be made ready , so as to be used instantly with their all apparatus in a venue to be reached easily.

6. In the course of hot work and procedures, when the works in question are completed and during enough time following completion , efficient fire control shall be made in the area on which hot work is conducted and the adjacent areas where hazard will emerge owing to heat transfer.

7. Necessity of applying for the document titled “International Safety Guide for Oil Tankers and Terminals (ISGOTT)” particularly for additional more detailed information and procedures pertaining to hot works and procedures will be taken into consideration every time.



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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): <input type="checkbox"/> Flame (welding, soldering, brazing, etc) <input type="checkbox"/> Spark or slag (grinding, cutting, friction tools, welding, etc) <input type="checkbox"/> Hot Object (metal surface, plate, etc) <input type="checkbox"/> Other: _____																																			
Hazard identification, risk analysis and control measure selection: <small>Add an additional page if the space below is insufficient.</small>																																			
Specific Hot Work Issues: (tick appropriate)	<input type="checkbox"/>	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.																															
	<input type="checkbox"/>	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.		Step 2 – Consider Likelihood What is the likelihood (below) of the hazard consequence in Step 1 occurring.																																	
<table><tr><td>Extreme</td><td>Multiple fatalities or permanent injuries</td></tr><tr><td>Critical</td><td>Single fatality or permanent injury</td></tr><tr><td>Major</td><td>Medical treatment or lost time injury</td></tr><tr><td>Minor</td><td>First aid treatment</td></tr><tr><td>Insignificant</td><td>Incident or near miss – no treatment</td></tr></table>		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	<table><tr><td>Almost Certain</td><td>Is expected to occur in most circumstances</td></tr><tr><td>Likely</td><td>Will probably occur at least once</td></tr><tr><td>Possible</td><td>Event might occur at some time</td></tr><tr><td>Unlikely / Rare</td><td>Event not expected to occur or only in exceptional circumstances</td></tr></table>			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													
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	Unlikely / Rare	Ins	Min	Maj	Crit	Ext																													
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: _____																															
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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	Yes	NA	Control
general hot work and	<input type="checkbox"/>	<input type="checkbox"/>	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)
ignition controls	<input type="checkbox"/>	<input type="checkbox"/>	Catch mats or boards are to be positioned over grid-mesh, flooring, grates to catch sparks or slag
required to be	<input type="checkbox"/>	<input type="checkbox"/>	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)
undertaken	<input type="checkbox"/>	<input type="checkbox"/>	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)
as part of the hot work:	<input type="checkbox"/>	<input type="checkbox"/>	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)
(identify as yes or not applicable)	<input type="checkbox"/>	<input type="checkbox"/>	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): <input type="checkbox"/> During Work, and/or <input type="checkbox"/> 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)	<input type="checkbox"/>	<input type="checkbox"/>	
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:	<input type="checkbox"/>	<input type="checkbox"/>	
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)	<input type="checkbox"/>	<input type="checkbox"/>	
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)	<input type="checkbox"/>	<input type="checkbox"/>	
The nature of the work requires specific respiratory protection to be worn	<input type="checkbox"/>	<input type="checkbox"/>	
The nature of the work requires specific controls to be implemented to protect gas leads or other sensitive plant items involved in the work	<input type="checkbox"/>	<input type="checkbox"/>	
The hot work involves arc-welding whereby specific controls relating to ensuring electrical safety will be required	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Hot Work Controls within Confined Spaces <input type="checkbox"/> NA (Not Applicable)			
Controls:	Yes	NA	
Locate equipment outside the space where practicable (such as gas cylinders, hoses, etc unless involved with respiratory devices)	<input type="checkbox"/>	<input type="checkbox"/>	
Extraction fan inlet is to be located as close as practicable to the contamination source	<input type="checkbox"/>	<input type="checkbox"/>	
Contaminants are to be expelled from the space (so that they cannot be recirculated and will not harm other workers)	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input type="checkbox"/>	<input type="checkbox"/>	
Completion Hot Work <input type="checkbox"/> NA (Not Applicable)			
Controls:	Yes	N/A	
After the end of the job is controlled area for at least half an hour.	<input type="checkbox"/>	<input type="checkbox"/>	
Field is checked for at least eight hours and one hour intervals.	<input type="checkbox"/>	<input type="checkbox"/>	
There is no need to do control after hot working.	<input type="checkbox"/>	<input type="checkbox"/>	
Permit Request:			
Name:	Signature:	Date:	Time:
Approved			
Name:	Signature:	Date:	Time:

10.7 Responsibilities of Personnel in Operation

a) Operation Responsible

- Acts according to the checklists in 10.9.
- A coordination meeting will be held at least 1 day prior to the acceptance of dangerous cargoes to the port facility and the representatives of operation, Field planning, HSE unit, TMGD and other related persons shall participate to the meeting.
- If a decision is taken at the meeting in favor of accepting the dangerous cargo, management, operation, storage, safety and emergency response departments shall be notified and the necessary preparations and acceptance process will be commenced.
- If it is required to notify the Port authority, the situation shall be notified to the Port authority in writing by specifying the reasons.
- Number of equipments and cranes, teams and shifts as well as the port to be used shall be specified at this meeting.
- Organize the work order with the 2nd Cap.
- Ensure that the cargo handling is made according to the approved cargo plan With the Planning Specialist
- Every person engaged in the handling of dangerous cargoes exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.
- Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.
- If there is any loss of containment of dangerous cargo, every practical step is taken to minimize risks to persons and adverse effects to the environment.
- 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
- Handling and temporary storage operations to be performed is in accordance with the rules of separation.
- 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.
- Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.
- 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.
- 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.
- At the areas where solid bulk dangerous cargoes 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.

b) Shift Supervisor

- Acts according to the checklists in 10.9.
- The personnel equipped with the necessary protective equipment check before the operation.

- 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.
- 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.
- 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.
- Organize the work order with the 2nd Cap.
- Ensure that the cargo handling is made according to the approved cargo plan.
- Performs the necessary separation according to the classes of dangerous loads.
- Every person engaged in the handling of dangerous cargoes exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.
- Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.
- If there is any loss of containment of dangerous cargo, every practical step is taken to minimize risks to persons and adverse effects to the environment.
- 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
- 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.
- Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.
- 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.
- 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.
- At the areas where solid bulk dangerous cargoes 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.
- 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.

c) HSE Responsibility

- Acts according to the checklists in 10.9.
- The worker at the operation informs about the danger of load and equips it with the necessary protective equipment.
- Environmental safety is ensured.
- Ensure that personnel are not dutied in the ship's warehouse or on the ground before gas measurements are made.

- Take necessary fire precautions and control system operation.
- Controls the presence of the required warning and warning signs.
- Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.
- 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.
- 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.
- At the areas where solid bulk dangerous cargoes 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.
- 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 Safe Handling of Dangerous Goods Operation Procedure Checklist

GENERAL

NO	Action	HSE	OP. RESP	SHF. SUP.
ACCEPTANCE OF THE CARGO				
1.	A coordination meeting will be held at least 1 day prior to the acceptance of dangerous cargoes 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		X	
4.	The Certificate of Conformity for the ship carrying the dangerous cargoes will be checked.		X	
5.	Approved cargo handling / evacuation plan requested		X	
6.	<p>The dangerous cargo (es) to be accepted to the port:</p> <p>Risk arising from dangerous cargo Interaction with dangerous cargoes existing at the port facility, Interaction with cargoes planned to be accepted to the port facility in the near future, Conditions for stowage Conditions for segregation Requirement of materials and equipment with respect to emergency response Sufficiency of emergency response equipments Interaction with the neighboring area (s)</p> <p>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.</p>		X	
7.	If a decision is taken at the meeting in favor of accepting the dangerous cargo, 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.				

10.9 Safe Handling of Packaged Dangerous Goods Operation Procedure Checklist

NO	Action	HSE	OP. RESP	SHF. SUP.
HANDLING				
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 expof.	X	X	X
6.	The master and port authority will supervise the transport of dangerous cargoes 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 cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.	X	X	X
11.	The operation shall be performed in accordance with the rules of separation specified in the separation scale for dangerous goods		X	X
12.	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		X	X

10.10 Safe Handling of Solid Dangerous Goods in Operation Procedure Checklist

NO	Action	HSE	OP. RESP	SHF. SUP.
HANDLING				
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
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 cargo, 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 cargoes 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 cargoes 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 cargoes 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

10.11 EmS (Emergency Procedures for Vessels 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.

a) 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.

Examples of the information found in the specific "emergency schedules" are necessary protective equipment and the types of extinguishing agents that can be used to put out fires involving dangerous goods.

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.

b) 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.

The person can also get in touch with a doctor to get assistance treating an injured person.