



# **SAMSUNPORT PORT FACILITY DANGEROUS GOODS SAFETY GUIDE**



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**(Refer to the Revised Revised Page)**

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## **1 ENTRY**

**1.1.** 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.

**1.2.** 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.

**1.3.** 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.

**1.4.** 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.

**1.5.** 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.

**1.6.** 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.


**1.7.** 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.

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



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**1.1 General information of the port facility (Restricted)**

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

### **1.2.1 General**

**1.2.1.1** Some of the cargoes defined as Class 1 explosives (save Class 1.4), Class 7 radioactive materials and Class 6.2 infectious substances in IMDG code shall not be taken inside the port facility. These cargoes are defined as dangerous cargoes which cannot be permitted absolutely and if the regulatory authority permits, they are processed as transit cargo. They are loaded and unloaded at a private area within the port facility and taken away by dispatching without keeping them at the port facility. The safety rules specified in this guideline will be applied if these cargoes are handled. 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 not handled at the port facility within the scope of IBC code. Cargoes within the scope of IGC code are not handled.


**1.2.1.2** 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.

1.2.1.2.1 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)

1.2.1.2.2 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.

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1.2.1.2.3 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.

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

### **1.3 Procedure for Safe Handling Operation of Packed Dangerous Cargoes**

#### **1.3.1 Container**

**1.3.1.1** 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.

**1.3.1.2** 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.


**1.3.1.3** 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.

**1.3.1.4** The container, requested in line with the Service Order issued by CFS office, is brought to CFS site.

**1.3.1.5** 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.

**1.3.1.6** 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.

**1.3.1.7** The container will be taken to the container stowage area following the field assignment performed subsequent to the completion of required proceedings.

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**1.3.1.8** Containers containing Dangerous Materials are not placed in the “temporary storage place closed warehouse” but they are placed in general or specific warehouses in line with features of these containers as per 77th article of Customs Regulation.

### **1.3.2 Dangerous cargoes in packaged form**

**1.3.2.1** Loading or unloading of packed dangerous cargoes will be made as direct delivery within the port facility.

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

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

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


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

**1.3.2.6** Working order will be organized through the berth operator, steersman and chief officer of the ship. Berth operator ensures the realization of loading or unloading as per the cargo plan. The responsibility of loading and unloading as per the cargo plan belongs to the Berth Operator.

### **1.3.3 Ro-ro**

**1.3.3.1** A parking area has been determined for the cargo transport units which transport the dangerous cargoes from the port facility. Required segregation of dangerous cargoes according to their classes will be carried out at this area.

**1.3.3.2** The loading operation will be carried out in line with the approved loading plan of the chief officer of the ship. The cargo carrying units containing dangerous cargoes should be specified in the plan and actions will be taken as per the required segregation rules. Loading will be done under the supervision of chief officer of the ship and the ship personnel and the responsibility will be borne through the responsible staff of the ship.

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**1.3.3.3** The approved ship evacuation plan will be given to the berth operator by the chief officer for the evacuation operation. Cargo carrying units are unloaded to the port from the ramp of the ship in line with evacuation plan under the supervision of the ship personnel. Cargo carrying units having dangerous cargoes will either be taken directly outside the port facility or to the specified dangerous cargo place within the port.

### **1.3.4 Requirements**

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


**1.3.4.2** 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.

**1.3.4.3** 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.

**1.3.4.4** 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.

**1.3.4.5** 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

**1.3.4.6** 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.

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**1.3.4.7** 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.

**1.3.4.8** 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.

### **1.3.5 Documentation**

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

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


**1.3.5.3** 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.

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

### **1.3.6 Supervision**

**1.3.6.1** 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.

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

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### **1.3.7 Information for operational and emergency purposes**

**1.3.7.1** 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:

**1.3.7.2** The description of dangerous cargoes in accordance with Chapter 5.4 of the IMDG Code;

**1.3.7.3** Details of special equipment needed for the safe handling of a particular dangerous cargo; and

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

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

**1.3.7.6** 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.

1. This information at the berth should include the emergency procedures on the berth, fire and emergency arrangements on the berth and the telephone numbers of the fire service, ambulance, police and the authorities to be informed in case of an incident concerning dangerous cargoes.
2. The telephone number of the responsible person of the berth and the emergency telephone number to be dialed in case of an incident concerning dangerous cargoes shall also be included.


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

### **1.3.8 General handling precautions**

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

1. Every person engaged in the handling of dangerous cargoes exercises reasonable care to avoid damage to packages, unit loads and cargo transport units.
2. Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.
3. 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.



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

5. 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.


6. 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.

7. 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.

8. 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.

9. 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.



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#### **1.4 Operational procedure of safe handling of bulk solid dangerous cargoes:**

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

##### **1.4.1 Solid bulk dangerous cargoes**

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

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

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

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

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

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


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

##### **1.4.2 Requirements**

**1.4.2.1** 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.

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

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

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**1.4.2.4** 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.

**1.4.2.5** 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.


**1.4.2.6** 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.

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

**1.4.2.8** 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.

**1.4.2.9** 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.

**1.4.2.10** 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)”.

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### **1.4.3 Documentation**

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

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

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

### **1.4.4 Responsibility for compliance**

**1.4.4.1** When solid bulk dangerous 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.

### **1.4.5 Emission of harmful dusts**


**1.4.5.1** 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.

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

### **1.4.6 Emission of dangerous vapor/oxygen deficiency**

**1.4.6.1** Where the transport or handling of solid bulk dangerous 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.

**1.4.6.2** 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 toxic or flammable vapor should be provided.

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#### **1.4.7 Emission of explosive dusts**

**1.4.7.1** 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.

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

#### **1.4.8 Spontaneously combustible substances and substances that react with water**

**1.4.8.1** 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.

#### **1.4.9 Oxidizing substances**

**1.4.9.1** 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.

#### **1.4.10 Incompatible materials**

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

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

##### **1.4.11.1 Group A cargo (liquefiable cargo)**

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

#### **Group A cargoes**

##### **Mineral concentrations**


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

##### **Nickel ore**

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

##### **Coal**

Coal (bituminous and anthracite) is a flammable material containing natural, hard, amorphous carbon and hydrocarbons. It best fits to Group B in terms of its being flammable and the spontaneous heating feature thereof however it can also be

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classified as part of A group since it can get liquefied if refined (e.g. if %75 is composed of tiny particles smaller than 5 mm). In these cases, it is classified both as within A and B group.

#### **1.4.11.2 Group B cargoes (which possess a chemical hazard)**

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

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

#### **Dangerous goods in solid form in bulk**

In the Code these cargoes are classed as follows:

Class 4.1: Flammable solids

Class 4.2: Substances liable to spontaneous combustion

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

Class 5.1: Oxidizing substances

Class 6.1: Toxic substances Class

7: Radioactive materials

Class 8: Corrosive substances Class

9: Miscellaneous dangerous substances and articles.

#### **Materials hazardous only in bulk (MHB)**

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

**Combustible solids:** materials which are readily combustible or easily ignitable

**Self-heating solids:** materials that self-heat

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

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

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

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

#### **The risks Group B cargoes present**


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

#### **Coal**

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

#### **Petroleum coke**

Petroleum coke which is not calcined is sensitive to heat. It can get burned under high temperatures. There is no specific requirement for ventilation at the storage areas. There are no special requirements during transport, unloading and cleaning. It is

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required to wear gloves, work uniform, shoes and helmets as protective clothing. Spray nozzles should be kept available.

**Direct reduced iron (DRI)**

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

**Metal sulphide concentrates**

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

**Organic materials**

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

**Wood products transported in bulk**

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

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

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

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

**Examples of Group C cargoes**


**Iron ore and high density cargoes**

**Sand and fine particle materials**

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

**Cement**

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

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## **1.5 Safe handling operation of explosives**

### **1.5.1 General**

**1.5.1.1** It will be ensured that related instructions are given to control the vehicles used in transport of explosives within port facility.

**1.5.1.2** Presence of a person responsible of the explosive cargo at the port facility always will be ensured.

### **1.5.2 Explosives in compatibility group L**

**1.5.2.1** Explosives included in compatibility group L will not be taken to the port facility without obtaining the required permissions from the port regulatory authority.

### **1.5.3 Transport of explosives in bad condition**

**1.5.3.1** Damaged cargo transport units containing explosive materials will not be taken to the ship and/or to the port facility. Should any damages occur during handling of cargo transport unit or the explosive materials inside, the operation will be ceased immediately and the relevant parties will be notified. Replacement of damaged cargo transport units or packaging containing explosive materials will be conducted under the supervision of explosive experts by taking the related safety and security measures and by obtaining permissions from related institutions at the area specified for temporary storage.

### **1.5.4 Loading and unloading explosives**


**1.5.4.1** Handling of explosive materials at the port facility is prohibited if the required permission for handling of explosive materials is not given through the regulatory authority. Accordingly, ships carrying explosive materials as transit cargo to port facility not having permission for handling explosive materials will be allowed only by receiving approval of the relevant regulatory authority on condition that the materials are not unloaded at the port facility.

**1.5.4.2** Class 1 type explosive materials other than those within class 1.4 compatibility group S will be handled at the port facility on the condition that they are loaded to the ship without waiting or are taken out of the port facility without waiting unless special permission is obtained from the regulatory authority,.

**1.5.4.3** The ship or the vehicle loading of which is completed will leave the port facility as soon as possible after the loading of explosive materials is completed at the port facility.

**1.5.4.4** If storage of explosive materials is needed temporarily at the port facility due to force majeure although the organizations required for handling these materials have been made before, these materials can be temporarily stored for a maximum period of 12 (twelve) hours at a specified area determined at the port facility by getting permits from the related institution (s) by taking the required safety measures.



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**1.5.4.5** The port facility where explosive materials are handled will be marked by specifying them as “protected area” and the boundaries of this area will be at least 10 (ten) meters wider than the normal handling area.

**1.5.4.6** Smoking and other sources of ignition, carrying and using matches or lighters, presence of any device, equipment or outfit which can create flames or sparks are prohibited at the areas where explosive materials are handled and the responsible personnel shall wear appropriate work uniforms and have protective outfit.

**1.5.4.7** Equipment to be used in the handling of explosive materials should be of an approved type according to international standards and their testing and maintenance work should be duly carried out

**1.5.4.8** As long as a permission is not obtained from the relevant port authority, the ship which is loaded with explosive materials or loading/unloading of which will be made will be approached to the berth/pier in a way that its port is in direction of going out from the berth to the sea. Steel wire rope will not be used to moor the ship to the berth/pier.

**1.5.4.9** There will be a steel wire rope with housing at the end at the prow and stern of the ship near to water level during the time a ship loaded with explosive materials or of which loading or unloading of explosive materials will be made is moored at the port as to enable intervention by towing boats when required.

**1.5.4.10** No repair and maintenance work will be done in the machines of a ship loaded with explosive materials without the permission of port authority even though it may be needed for the departure of the ship from the port.

### **1.5.5 Weather conditions**

**1.5.5.1** Because of the nature of explosives, the provisions of Chapter 3 with respect to the handling of dangerous cargoes in adverse weather conditions need careful attention, particularly in respect of wet conditions.

**1.5.5.2** Measures will be taken to prevent wetting of explosive materials.


### **1.5.6 Additional measures**

**1.5.6.1** No source of ignition should be brought into or near to a place where explosives are being handled. The wearing of shoes or boots with unprotected metal nails, heels or tips of any kind should be prohibited, except where the consignment consists only of articles of class 1, and care taken to ensure that any portable lights and other electrical equipment are of a type safe for use in a flammable atmosphere.

### **1.5.7 Radio or radar transmitting**

**1.5.7.1** During the handling of explosives no radar or radio transmitter should be used within 50 metres of the cargo handling area



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**1.5.7.2** No radar or radio transmitter except for VHF transmitters with power output less than 25 Watts should be used on the ships, cranes or at any place near them during the loading and unloading of explosive materials. Power units of these devices will be closed during the handling of explosive materials and they are marked visually to avoid their being opened during the handling process. Furthermore, VHF transmitters will not be placed closer than 2 meters to the explosive materials during usage thereof.

### **1.5.8 Bunkering**

**1.5.8.1** No bunkering should be permitted during the handling of explosives or while the hatches of cargo spaces containing explosives are open, unless the permission of the port authority has been obtained

### **1.5.9 Damaged packages**

**1.5.9.1** If in the course of handling explosives in the port area any package of explosives, or the seal of any such package, appears to be damaged, that package should be set aside for examination and repair or other safe disposal

**1.5.9.2** If any explosives are spilled or escape from a package, the responsible person supervising the handling should ensure that such spillage is immediately collected and safe arrangements are made for its repacking or disposal.

### **1.5.10 Completion of loading**


**1.5.10.1** When loading is completed the loaded ship or vehicle should depart from the port area as soon as is reasonably practicable.

### **1.5.11 Security**

**1.5.11.1** As the safety of the handling of explosives is affected by the degree of safety attained, consideration should be given to all safety measures necessary to prevent unauthorized access to explosives, including appropriate checks that all packages are received in good order and condition at all stages of the handling operation. Explosives should neither be moved nor handled unless the relevant permits have been issued and such tasks should be undertaken in accordance with the conditions specified in the relevant permits.

### **1.5.12 Explosives in class 1, division 1.4, compatibility group S**

**1.5.12.1** Handling of Class 1, Chapter 1.5, compatibility group The regulatory authority should grant any exemption necessary from their requirements in the case of explosives in class 1, division 1.4, compatibility group S

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## **1.6 Procedure for safe handling operation of radioactive materials**

### **1.6.1 Requirements**

**1.6.1.1** Any material containing radionuclide activity concentration and total activity in the dispatch of which exceeding the values stated in rule 2.7.2.2 of IMDG code should be declared as radioactive material.

**1.6.1.2** A special area will be determined for temporary storage of radioactive materials at the port facility due to force majeure reasons where all necessary safety measures are taken.

**1.6.1.3** The area where radioactive materials will be temporarily stored will be isolated and bordered to avoid unauthorized access. This area will be constantly monitored during the time these radioactive materials are stored temporarily and recorded by cameras and these records will be kept at least for 6 months.

**1.6.1.4** When an area is specified for temporary storage of radioactive materials at the port facility, administrative buildings, other facility nearby, types of cargo handled at the facility, areas of living and settlement, and fastest access opportunities in instances of emergency shall be considered.

**1.6.1.5** Berth operators at the port facility where radioactive materials are handled will define additional safety measures to be taken and the people who will take such additional safety measures.

**1.6.1.6** Two person who have received the necessary training have been assigned at our port facility as the responsible people from handling of radioactive materials and their duties are defined in this procedure and the quality management system.


**1.6.1.7** Measures will be taken entry/exit of radioactive materials in the fastest and safest way as well as for their stay at the port facility for a minimum amount of time. In this respect, the most suitable port will be determined where necessary safety measures are taken and where the ship can approach in the safest way.

**1.6.1.8** Radiation protection requirements determined by Turkish Atomic Energy Authority (TAEK).will be met for protection of personnel employed in handling and control of radioactive materials.

### **1.6.2 Segregation from persons**

**1.6.2.1** Limitation of the radiation exposure of persons should be based on keeping doses as low as reasonably practicable within the current maximum annual dose – equivalent limit recommended by the International Commission on Radiological Protection (ICRP) for members of the public and workers

**1.6.2.2** The ICRP recommended dose limits are revised from time to time. The 1990 recommendations are for a maximum annual dose – equivalent limit of 20 mSv averaged over 5 years with 50 mSv in any one year for occupationally exposed workers and 1 mSv for members of the general public.

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**1.6.2.3** Members of the general public should normally not have access to or near areas of ports where radioactive materials are kept

**1.6.2.4** Category II or III (yellow label) packages, overpacks, freight containers or tanks containing radioactive materials which are not taken directly to or from a ship should be kept in areas or stores separated from any place regularly frequented by workers by at least the distances given in the table below, unless measurements taken by using an appropriate instrument show clearly that the radiation level at all points inside that place is less than 7.5 mSv/h. Where members of the general public necessarily require access to the vicinity of such areas or stores it should be for short periods only.

TABLE

Segregation of category II or III packages, overpacks, freight containers or tanks from workers.


Sum of transport indices	Minimum segregation distances
Up to 5	4
Over 5 to 10	6
Over 10 to 20	8
Over 20 to 30	10
Over 30 to 40	12
Over 40 to 50	13
Over 50 to 100 <sup>*</sup>	18
Over 100 to 150 <sup>*</sup>	22
Over 150 to 200 <sup>*</sup>	26

\* For 2 or more stacks of packages, etc., see 4.1.2 below.

The segregation distance should be adhered to regardless of whether walls or ceilings intervene between the storage area and the occupied place.

These distances should be kept no matter whether the walls or ceilings are within the area of storage or the area which is used.

**1.6.2.5** Where the package, overpack, freight container or tank is not in a special store, the area covered by applying the table above should be barriered or marked off. Entry into the special store or barriered off area should be for the purpose of essential duties only and the time spent in handling packages, overpacks, freight containers or tanks containing radioactive materials should be kept to the minimum necessary. If the frequency of keeping packages, overpacks, freight containers or tanks of radioactive materials on the premises is such that persons on average over the year spend more than 10 hours per week in the vicinity of the special store or barriered off area where such materials are present, more stringent measures should be adopted, possibly including monitoring of radiation doses received. Guidance on this should be sought from the regulatory authority.

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**1.6.2.6** These criteria should be regarded as minimum standards. In some countries the regulatory authority has made national legal requirements requiring higher standards. In such cases it will be necessary to comply with the provisions of such legislation.

**1.6.2.7** No person under 18 years of age should be employed in the handling of Category II or III packages, overpacks, freight containers or tanks, or remain in their vicinity for significant periods. The regulatory authority should consider the need for any restriction on the employment of pregnant women.

### **1.6.3 Segregation from undeveloped film**

**1.6.3.1** Radioactive material should be segregated from undeveloped film and mailbags which should be assumed to contain undeveloped film by at least the distances given in above table

### **1.6.4 Stowage, loading and unloading of radioactive materials**

**1.6.4.1** Radioactive material should not be handled or stored at the port area unless it is in conformity with the International Atomic Energy Agency's (IAEA) Regulations for the Safe Transport of Radioactive Materials, and the requirements of the IMDG Code or similar national legal requirements

**1.6.4.2** Radioactive materials can be handled at the port facility on the condition that they are loaded on the ship without waiting or they are unloaded from the ship and leave the port facility immediately apart from conditions permitted by the regulatory authority or the cases of force majeure,.


**1.6.4.3** In the event of any accident involving radioactive material or packages of radioactive materials or any theft or loss of any such materials or packages, the port authority and relevant national authorities should be notified immediately. If there is any possibility of loss of containment of radioactive material, the area should be isolated and the appropriate contingency plans put into operation.

**1.6.4.4** Following points should be performed unless authorized by the special arrangements of the regulatory authority:

1.6.4.4.1 The radiation dosage on the outer surfaces of packages, overpacks, freight containers or tanks at the port facility should not exceed 2 mSv/h and in routine transport it shouldn't exceed the 0.1 mSv/h from a distance of 2 meters of the surface of transport vehicle,

1.6.4.4.2 Total number of packages, overpacks, freight containers or tanks stowed in one transport or in one pile at the port facility should be limited in a way not to exceed 50.

**1.6.4.5** Total Transport index of singular packages, barrels, freight containers or tank groups stowed at the port facility should not exceed 100 and a distance of minimum 6 meters should be left between groups. There can be more than one pile in the same group.

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**1.6.4.6** It should be controlled if the stowage of packages, barrels, containers and tanks in the ship is done in accordance with the requirements of Class 7 specified in Chapter 7.1 of IMDG Code.

**1.6.4.7** Isolation of packages, barrels, containers or tanks in the ships should be done as per the requirements of Class 7 specified in Chapter 7.1. of IMDG Code.

**1.6.4.8** Personnel which has not received training as to protection against radiation should not be employed in handling and processing of radioactive materials

**1.6.4.9** The rules specified below should be applied in temporary storage of radioactive materials at the port facility due to force majeure reasons:

1.6.4.9.1 It will be ensured that the maximum yearly dosage to which employees are exposed does not exceed the limits recommended by Turkish Atomic Energy Authority (TAEK).

1.6.4.9.2 Cargo transport units carrying radioactive materials should be stowed and segregated in line with the rules set in section 4.

**1.6.4.10** If packages, overpacks, freight containers or tanks are not placed at a specified warehouse, they will be confined in line with the segregation distance specified on table 1.7.2.4. Entry to warehouse or such confined area will only be allowed for the execution of required works. The time spent for handling of packages, overpacks, freight containers or tanks containing radioactive materials should be kept as short as possible.

**1.6.4.11** If storage of radioactive materials is needed temporarily at the port facility due to force majeure although the organizations required for handling radioactive materials have been made before, these materials can be temporarily stored for a maximum period of 12 (twelve) hours at a specified area determined at the port facility by getting permits from the related institution (s) by taking the required safety measures.

**1.6.4.12** The conditions specified below should be met in accordance with legislation for safe transport of radioactive materials in line with the regulations of International Atomic Energy Agency (IAEA) , requirements of IMDG Code, and the related national legislation:

1.6.4.12.1 The radiation dosage on the outer surfaces of packages, overpacks, freight containers or tanks at the port facility should not exceed 2 mSv/h and in routine transport it shouldn't exceed the 0.1 mSv/h from a distance of 2 meters of the surface of transport vehicle.


1.6.4.12.2 Transport index total of packages in one pile or one dispatch, overpacks, freight containers or tanks stowed at the port facility should be limited not to exceed 50.

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**1.6.4.13** Transport index total of one group packages, overpacks, freight containers or tanks stowed at the port facility should not exceed 100 and a distance of minimum 6 meters should be left between groups. There can be more than one pile in the same group.

**1.6.5 Customs:**

Consideration should be given to the need for the provision of appropriately separated areas for any customs examination of packages, overpacks, freight containers or tanks containing radioactive materials that may be necessary in the port area. Any customs officer likely to examine packages, etc., should receive appropriate training in basic radiation protection.

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## **1.7 Procedure of safe handling of infectious materials**

### **1.7.1 Requirements**

**1.7.1.1** A special area will be determined for temporary storage of radioactive materials at the port facility due to specially permitted conditions and force majeure reasons where all necessary safety measures are taken.

**1.7.1.2** Area where infectious materials will be temporarily stored will be isolated and bordered to avoid unauthorized access. This area will be constantly monitored during the time these infectious materials are stored temporarily. Required equipment, device and outfit should be made available for monitoring handling operations and the storage area from a distance.

**1.7.1.3** Two people will be assigned for handling of infectious materials and their job descriptions shall be written in this procedure and the quality management system.

**1.7.1.4** There will be adequate number of personal protective clothing, equipments and outfits for the personnel who will be involved with the handling of infectious materials.

**1.7.1.5** Devices, equipments and outfit will be made available to prevent leakage and wastes contaminated by infectious materials spreading arising from them.


### **1.7.2 Stowage, loading and unloading of infectious materials**

**1.7.2.1** Infectious materials can be handled at the port facility on the condition that they are loaded on the ship without waiting or they are unloaded from the ship and leave the port facility immediately apart from conditions permitted by the regulatory authority or the cases of force majeure. In this respect measures should be taken enabling entry/exit of infectious materials in and out of the port facility at the fastest and safest way and enabling their stay at the port facility within the shortest possible time.

**1.7.2.2** Personnel who don't have protective clothing and adequate equipment in line with their job will not be employed in handling of infectious materials

**1.7.2.3** If storage of infectious materials is needed temporarily at the port facility due to force majeure although the organizations required for handling these materials have been made before, these materials can be temporarily stored for a maximum period of 12 (twelve) hours at a specified area determined at the port facility by getting permits from the related institution (s) by taking the required safety measures.



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## **2 RESPONSIBILITIES**

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

### **2.1 Responsibilities of the relevant person of the goods**

**2.1.1** To prepare all necessary documents, information and certificates relating to dangerous goods and provide availability of these documents with the cargo during the transport activities.

**2.1.2** Ensure the proper classification, identification, packing, marking and plating of the dangerous goods in accordance with the legislation.

**2.1.3** Ensure safe loading, stowage, transport and unloading of dangerous goods in approved and proper package, container and cargo units.

**2.1.4** Ensure the training of all relevant personnel on marine risks of dangerous cargo, safety precautions, safe operation, emergency measures, safety and so on and keep training records.

**2.1.5** Provide necessary safety measures for improper, unsafe or risk-posing hazardous substances.

**2.1.6** Provide the necessary support and information to the relevant persons in case of emergency or accident.

**2.1.7** Inform the administration on dangerous goods accidents occurred in the area of responsibility.

**2.1.8** Present the requested information and document in the inspections carried out by the Authorities and provide the necessary cooperation.

### **2.2 Responsibilities of the port facility operator**

**2.2.1** Ensure appropriate, secured, safely land and connection.

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

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

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

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


**2.2.6** Keep an updated list of all dangerous goods in the business field.

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

**2.2.8** Check the documents 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.

**2.2.9** Provide necessary safety measures for improper, unsafe or risk-posing hazardous substances and notify the port authority.



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

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

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

**2.2.13** Execute the activities related to hazardous substances in the docks, wharves, warehouses which are established for this purpose.

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

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

**2.2.16** Not allow the ships and vessels carrying hazardous goods to edge in with the dock and pier without permission from the port authority.

**2.2.17** Provide a storage area proper to separation and stowage requirements and take necessary fire, environmental and other safety measures. Load and unload the dangerous good to ships and vessels, to take necessary actions against heat and other hazard especially in warmer seasons by relevant person. Keep combustible materials away from sparks and avoid usage of sparkling tools and equipment in the dangerous goods handling area.

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

### **2.3 Responsibilities of the ship's master**

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

**2.3.2** Demand all necessary documents, information and certification relating to dangerous goods and ensure their availability with the goods..

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

**2.3.4** Check the compliance of identification, classification, certification, packaging, marking, declaration, loading and transport of the approved and proper package, container and cargo unit in a safety means.

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


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

**2.3.7** Not crossing the boards assigned to himself, not anchoring, not edging with the pier and docking without the consent of the ort authority.

**2.3.8** Apply all rules and measures during sailing, maneuvering, mooring, berthing and leaving for the safe transport of dangerous goods..

**2.3.9** Ensure safe entry and exit between the ship and the dock..

**2.3.10** Inform the crew on the applications, security procedures, emergency measures and intervention methods related to dangerous goods in the ship..

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**2.3.11** Possess the updated list of the dangerous goods in the ship and declare them to the authorities.

**2.3.12** Take the necessary safety measures for illegitimate, improper, unsafe, risk-posing for ship, persons or environment and report the case to the port authority..

**2.3.13** Report the dangerous goods accident in the ship to the port authority.

**2.3.14** Provide the necessary support and cooperation for controls made by the authorities.

## **2.4 Responsibilities of the Dangerous Goods Safety Consultant**

**2.4.1** Follow the compliance with the requirement to the transport of the dangerous goods..

**2.4.2** Provide recommendations with regard to the transportation of hazardous materials to the port facility.

**2.4.3** Prepare an annual report on the dangerous goods transportation activities of the facility operator to the port facility.(Annual reports are kept for years and submitted to the authorities upon request.)

**2.4.4** Check the applications and methods described below;

**2.4.4.1** 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..

**2.4.4.2** Loading / unloading evacuation procedure related to handled and temporary dangerous goods,

**2.4.4.3** Check that if the port facility considers the special requirements relating to dangerous goods while purchasing means of conveyance regarding to the handled dangerous goods.,

**2.4.4.4** Control methods of transport equipment used in loading and unloading of hazardous substances,,

**2.4.4.5** Including the amendments to the legislation, to check that whether the port facility personnel has necessary training and whether the records of this training is available,

**2.4.4.6** Convenience of the emergency methods to be applied in case of occurrence of an accident or incident that may effect the safety during the transport, loading or unloading of the dangerous goods.,

**2.4.4.7** Convenience of the reports prepared on the serious accidents, incidents or serious infringements occurring during the transport, loading and unloading of the dangerous substances,


**2.4.4.8** Determine the necessary precautions for the possibility of the re-occurrence of the accidents, incidents or serious violations and evaluation of the practices,

**2.4.4.9** Check what extent the requirements of the transport of the dangerous good are considered among the selection of the sub-contractor,

**2.4.4.10** Determine whether the personnel has detailed knowledge on operational procedures and instructions for the transportation, handling, storage and shipment / discharge of hazardous substances,

**2.4.4.11** Convenience of the measures taken for the transportation, handling, storage and shipment / discharge of hazardous substances

**2.4.4.12** Procedures on the identification of all necessary documents, information and certifications relating to hazardous materials.

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

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

**2.4.4.15** Procedures on fumigation, gas metering and degasification operations. Procedures on keeping records and statistics of hazardous materials,

**2.4.4.16** Accuracy of the matters related to the ability and capacity of the port facility for respond to emergencies,

**2.4.4.17** Convenience of the regulations for early intervention for accidents involving hazardous substances,

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

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

## **2.5 Responsibilities of 3rd party, cargo / ship broker etc. operating in the port facility**


**2.5.1** Ensure that their personnel participating in the port facility has necessary training specified in the 27.03.2013 dated No. 79462207/315 Circular of the Authority,

**2.5.2** Comply with the requirements set out in the IMDG Code,

**2.5.3** Comply with the procedures for Hazardous Goods Guide and Hazardous substances formed by the port facility,

**2.5.4** Handling, transport and storage of hazardous substances in the port facility and report any violation to the relevant authority,

**2.5.5** Submit the (SDS) Form, which constitutes an integral part of the operations for the elimination of the Occupational Health and Safety risks that may occur during the use and storage of dangerous substances and prepared to inform the users accurately and adequately, to the port facility and Port Authority.

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

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

#### **3.1 Berthing**

3.1.1 Adequate and safe mooring facilities are provided; and

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

#### **3.2 Supervision**

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

3.2.2 The port operator should ensure that no person, without reasonable cause, opens or otherwise interferes with any 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.

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

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

3.3.1 The port operator should ensure that dangerous 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.

#### **3.4 Safe handling and segregation**


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

#### **3.5 Emergency procedures**

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

3.5.1.1 the provision of appropriate emergency alarm operating points;

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

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

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

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

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

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

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

**3.5.4** "Emergency Schedules (EmS)" annexed to IMDG Code shall be used for any emergencies involving hazardous loads.

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

### **3.6 Emergency information**

**3.6.1** The port operator should ensure that a list of all dangerous 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.

**3.6.2** 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.

**3.6.3** 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.


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

**3.6.5** Data sheets of 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.

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

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

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

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### **3.7 Fire precautions**

**3.7.1** The port operator should ensure that:

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

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

**3.7.1.3** The handling of dangerous cargoes are kept clean and tidy;

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

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

**3.7.1.6** Places where smoking is prohibited are designated; and

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

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

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

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

### **3.8 Fire fighting**

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

**3.8.2** 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.

### **3.9 Environmental precautions**


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

**3.9.2** The port operator should ensure that any damaged package, unit load or cargo transport unit containing dangerous 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.

**3.9.3** 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.



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

**3.9.6** Necessary actions shall be taken so that soil, water or areas of water discharge is/are not contaminated with any 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.

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

### **3.10 Pollution combating**

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

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

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

### **3.11 Reporting of incidents**

**3.11.1** The port operator, within his area of responsibility, should ensure that, if an incident occurs during the handling of dangerous 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.

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

**3.11.3** The port operator should ensure that any incident involving dangerous 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.


**3.11.4** 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

### **3.12 Inspections**

**3.12.1** The port operator, where appropriate, should:

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

**3.13.1.2** Check, where practicable, packages, unit loads and cargo transport units containing dangerous cargoes to verify that they are marked, labelled or

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

**3.13.1.3** 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

**3.13.1.4** 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.

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

**3.13.3** 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.

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

### **3.13 Hot work and other repair or maintenance work**

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

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

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

### **3.14 Entry into confined or enclosed spaces**

**3.14.1** The port operator should ensure that no person enters any enclosed space such as, for example, a cargo space, cargo tank, void space around such tank, cargo handling space, or other confined or enclosed space which has contained or may contain dangerous vapour or oxygen depleting cargoes, unless the space is free of dangerous vapour and not deficient in oxygen, and is certified to that effect by a



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responsible person trained in the use of the relevant equipment and sufficiently knowledgeable to interpret correctly the results obtained. The responsible person should record the measurements taken.

**3.14.2** Where it is necessary for operational purposes to enter a space which cannot be freed of dangerous vapour within a reasonable time and which, therefore, can not be certified, or it is unlikely that the space will remain free of dangerous vapour, then entry should only be made by persons wearing a self-contained breathing apparatus and any other necessary protective equipment and clothing. The entire operation should be carried out under the direct supervision of a responsible person who should be provided with self-contained breathing apparatus, protective equipment and rescue harness. The breathing apparatus, protective and rescue equipment should not be of a type that could introduce a source of ignition into the space.

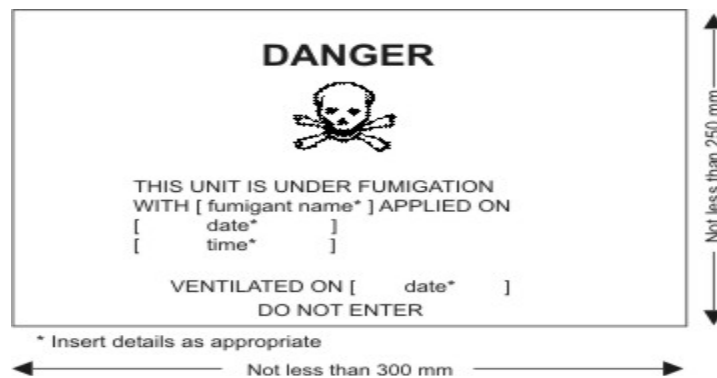
**3.14.3** The port operator should ensure that entry into a space follows carefully established procedures which are contained in international codes and guides.

### **3.15 Fumigation of warehouses, sheds or cargo transport units**

**3.15.1** 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.

**3.15.2** 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.

**3.15.3** The port operator should ensure that fumigated warehouses, sheds or cargo transport units are conspicuously marked, informing anyone approaching them of the hazard involved.




**3.15.4.** Pestisitlerin Gemilerde Güvenli Kullanımı hakkındaki Öneriler fumigasyon altındaki gemiler, gemi kompartımanları, yük konteynırları, yakıt gemileri için kullanılacak bir uyarı işareti içermektedir. Yük Taşıma Birimlerinin (CTUlar) Ambalajlanmasına ilişkin IMO/ILO/UN ECE Ana Esasları yer almaktadır.

**3.15.5** 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.

### **3.16 Contaminated wastes**

**3.16.1** 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.

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### **3.17 Alcohol and drug abuse**

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

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

### **3.18 Weather conditions**

**3.18.1** 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.

**3.18.2** 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.

### **3.19 Lighting**

**3.19.1** 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.

### **3.20 Handling equipment**

**3.20.1** 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.

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

### **3.21 Protective equipment**

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


**3.21.2** 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.

### **3.22 Explosives**

**3.22.1** Dangerous cargoes of class 1 other than division 1.4S should only be permitted to enter the port area for direct shipment to or from ships, unless permitted by the regulatory authority.

**3.22.2** The regulatory authority should establish specific requirements for the transport and handling of explosives, having regard to the hazards involved and the population density in the vicinity of the port area and any other relevant circumstances.

**3.22.3** The regulatory authority establishing these specific requirements should highlight the fact that the classification of explosive substances and articles, together with the compatibility group assignment and the Proper Shipping Name, under which the substance or article is to be transported, shall have approval by the competent

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authority of the country of manufacture prior to transport in compliance with the provisions of chapter 2.1 of the IMDG Code.

**3.22.4** The following precautions during loading and unloading of explosives should be taken into account:

**3.22.5 .Artificial lighting**

**3.22.5.1** Electric lights, except arc lights, are the only form of artificial lighting permitted during cargo operations involving dangerous goods of class 1 (requirements for electrical equipment and cables are set out in chapter 7.1 of the IMDG Code);

**3.22.6 Radio and radar**

**3.22.6.1** During loading or unloading of cargoes of class 1 (except those in division 1.4), no radio or radar transmitters should be used on the ship, in cranes or elsewhere in the vicinity, except for VHF transmitters with a power output that does not exceed 25 W and no part of their aerial systems passes within the minimum safe distance of 2 metres from the explosives.

**3.22.6.2** Some Class I appliances feature start-up systems which are sensitive to electromagnetic radiation from external sources such as radio and radar. Therefore, the said equipment shall be powered/turned off under control by activating equipment main control buttons to ensure that such devices are not powered until the completion of loading or unloading of the same.

**3.22.7 Mechanical aids to stowage**

**3.22.7.1** All mechanical aids to stowage, whether power-driven or not, should be properly maintained and inspected before use to ensure that they are in a good working condition, comply with an appropriate recognized standard and are serviced in accordance with the manufacturer's maintenance recommendations.

**3.22.8 Defective packages**

**3.22.8.1** Any damaged, leaking, affected by moisture or otherwise defective package should not be accepted for shipment. No repair of defective or damaged packages should be permitted on board the ship.

**3.22.9 Protections against weather**

**3.22.9.1** Packages containing dangerous goods of class 1 should be prevented from becoming wetted since, the danger may, in some cases, be aggravated by wetting.

**3.22.10 Security**


**3.22.10.1** To ensure the security of dangerous goods of class 1, a responsible person should be present at all times whilst the hatches are open. Unauthorized persons should never be allowed access to compartments where goods of class 1 are stowed.

**3.23 Radioactive material**

**3.23.1** Radioactive material, assigned to class 7 of the IMDG Code and described in chapter 2.7 of the Code, should only be permitted to enter the port area for direct shipment or delivery if permitted by the regulatory authority.

**3.23.2** When radioactive material cannot directly go to or from a ship for unforeseen reasons it should only be kept in port areas with the permission of the regulatory authority.

**3.23.3** Packaged radioactive material should not be brought into the port area unless it is in conformity with the International Atomic Energy Agency's (IAEA) Regulations for the Safe Transport of Radioactive Materials, and the requirements of the IMDG Code or similar national legal requirements.

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**3.23.4** Packages containing radioactive material should be stowed and segregated in compliance with the detailed requirements of sections 7.1.14 and 7.2.9 of the IMDG Code. Guidance on segregation distances required on shore is set out in annex 3.

**3.23.5** In the event of any accident involving radioactive material or packages of radioactive materials or any theft or loss of any such materials or packages, the port authority and relevant national authorities should be notified immediately. If there is any possibility of loss of containment of radioactive material, the area should be isolated and the appropriate contingency plans put into operation.

### **3.24 Infectious substances**

**3.24.1** Infectious substances (class 6.2 of the IMDG Code) should only be permitted to enter the

**3.24.2** Port area for direct shipment or delivery if permitted by the regulatory authority.

**3.24.3** When infectious substances cannot directly go to or from a ship for unforeseen reasons they should only be kept in port areas with the permission of the regulatory authorities.

**3.24.4** The regulatory authority should establish specific requirements for the handling of infectious substances, including but not limited to:

- .1 areas for handling;
- .2 stringent supervision; and
- .3 additional equipment for the containment of such substances.

### **3.25 Signals**

**3.25.1** 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.

**3.25.2** The specified dangerous cargoes should include:

**3.25.2.1** bulk liquids with a flashpoint below 60°C closed cup;

**3.25.2.2** bulk flammable and/or toxic gases; and

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

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

**3.25.4** The following four scenarios should be considered:

**3.25.4.1** the ship is moored or at anchor by day;

**3.25.4.2** the ship is moored or at anchor at night;

**3.25.4.3** the ship is under way by day; or

**3.25.4.4** the ship is under way at night.


**3.26.5** 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:

**3.26.5.1** access to the vessels;

**3.26.5.2** radio and radar transmissions;

**3.26.5.3** transiting the anchorage; and

**3.26.5.4** passing of ships moored or anchored.

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

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

**3.26.6.2** by night an all-round fixed red light.

### **3.26 Communications**

**3.26.1** 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.

### **3.27 Areas**

#### **3.27.1 Dangerous cargo areas**

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

**3.27.1.2** The spaces should enable an adequate segregation of dangerous cargoes in accordance with the legal requirements of the regulatory authority.

**3.27.1.3** 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.

**3.27.1.4** Those areas where hazardous materials are handled shall be furnished with necessary equipment and devices to prevent potential harmful effects of such hazardous materials.


**3.27.1.5** 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.

#### **3.27.2 Container stacking areas/rail sidings/lorry parking areas**

**3.27.2.1** Separate areas may be designated for specific dangerous cargoes.

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

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

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**3.27.2.4** Adequate emergency facilities should be provided. These should be appropriate to the hazards of the dangerous cargoes to be handled.

### **3.27.3 Fumigation areas**

**3.27.3.1** Separate areas should be provided or designated for ships and/or cargo transport units to be fumigated.

**3.27.3.2** 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.

### **3.27.4 Special areas for damaged dangerous cargoes and wastes contaminated with dangerous cargoes**

**3.27.4.1** 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.

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

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

### **3.27.5 Repairing/cleaning facilities**

**3.27.5.1** Where repair or cleaning facilities for ships or cargo transport units are provided, they should be situated well away from any area where dangerous 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.

**3.27.5.2** 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.


### **3.27.6 Reception facilities**

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

## **3.28 Training**

**3.28.1** 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.



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## **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.

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#### **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 and organic peroxides

Class 6: Toxic and 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.












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

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Class 2		
	2.1	Flammable gas
	2.2	Non-Flammable, compressed gas
	2.3	Toxic or poisonous gas
Class 3		
	3	Flammable
Class 4		
	4.1	Flammable solids
	4.2	Spontaneously combustible solids
	4.3	Combustible solids when in contact with water
Class 5		
	5.1	Oxidizer
	5.2	Organic peroxide (5.2 new ADR 2007)
Class 6		

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	<b>6.1</b>	Toxic substances
	<b>6.2</b>	Infectious substances
<b>Class 7</b>		
	<b>I</b>	Category I – White (symbol 7A)
	<b>II</b>	Category II – Yellow (symbol 7B)
	<b>III</b>	Category III – Yellow (symbol 7C)
	<b>Fissile</b>	Criticality safety index label (symbol 7E)
<b>Class 8</b>		
	<b>-</b>	Corrosive
<b>Class 9</b>		
	<b>-</b>	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).

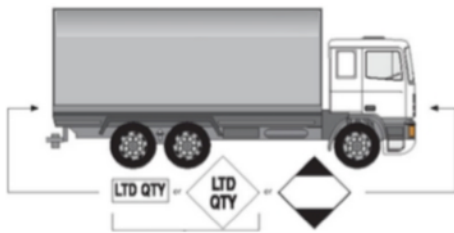
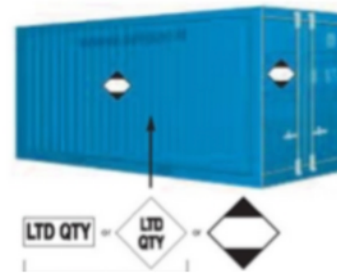
The code specifies clearly that no person may offer to transport dangerous goods unless the goods are properly marked, labeled, placarded, described and certified on a document. Those who are transporting dangerous goods must indicate the UN Number and proper shipping name clearly on the consignment. 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.




### Ambalajlar



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### **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

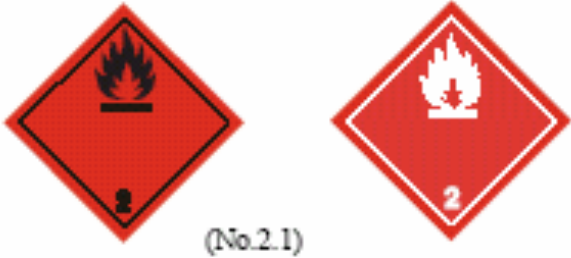


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**Shapes and Colors of Labels and Placards**

**Class 1 – Explosives**


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

**Class 2 – Gases**



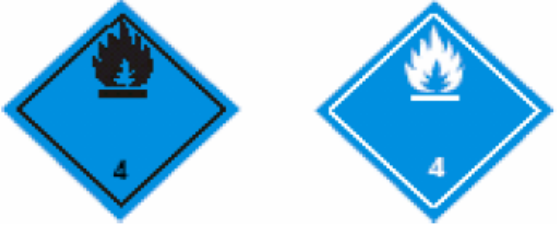
	<p><b>Division 2.1 Flammable Gases</b>  <b>Symbol</b> – Flame in black or white  <b>Background</b> – in red color  <b>Text</b> – Flammable Gas (optional)  <b>Number 2</b> – in the bottom corner</p>
	<p><b>Division 2.2 Non-flammable gases</b>  <b>Symbol</b> – Gas cylinder in black or white color  <b>Background</b> – in green color  <b>Text</b> – Non flammable compressed gas (optional)  <b>Number 2</b> – in the bottom corner</p>
	<p><b>Division 2.3 Toxic Gases</b>  <b>Symbol</b> – skull and crossbones in black color  <b>Background</b> – in white color  <b>Text</b> – Toxic (optional)  <b>Number 2</b> – in the bottom corner</p>

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**Class 3 – Flammable Liquids**

	<p>Symbol – flame in black and white color  Background – red color  Text – Flammable Liquid (optional)  Number 3 – in the 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>Division 4.1 Flammable Solids Symbol – flame in black color  Background – white with seven red vertical stripes  Text – Flammable Solid  Number 4 – In the bottom corner</p>
	<p>Division 4.2 Substances liable to spontaneous combustion  Symbol – flame in black color or white color  Background – blue color  Text – Spontaneous combustion substances (optional)  Number 4 – in the bottom corner</p>
	<p>Division 4.3 Substances which, in contact with water, emit flammable gases  Symbol – flame in black or white color  Background – blue color  Text – Substances which, in contact with water, emit flammable gases (optional)  Number 4 – in the bottom</p>






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### Class 5 – Oxidizing Substances or Organic Peroxides




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

### Class 6 – Toxic Substances or Infectious Substances

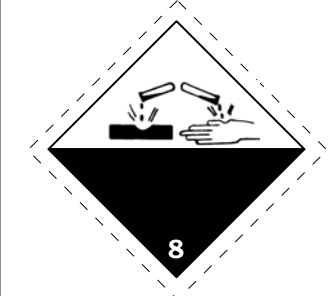
	<p><b>Division 6.1 Toxic Substances</b>  <b>Symbol</b> – black skull and crossbones <b>Background</b> – white color  <b>Text</b> – Toxic (optional)  <b>Number 6</b> – in the bottom corner</p>
	<p><b>Division 6.2 Infectious Substances</b>  <b>Symbol</b> – three crescents superimposed on a circle and inscriptions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


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### Class 7 – Radioactive Materials

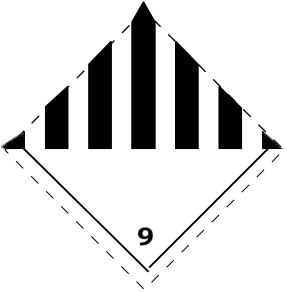
	<p><b>Category I – White</b>  <b>Symbol</b> – trefoil in black color  <b>Background</b> – white color  <b>Text (mandatory) in black</b> – in the lower half of the label “Radioactive I”, “Contents...”, “Activity...” and “Transport Index” box  <b>Number 7</b> – in the bottom corner</p>
	<p><b>Category II – Yellow Symbol</b> –  trefoil in black color  <b>Background</b> – the upper half in yellow color with white borders, the lower half in white  <b>Text in black</b> – in the lower half of the label “Radioactive II”, “Contents...”, “Activity...” and “Transport Index” box  <b>Number 7</b> – in the bottom corner</p>
	<p><b>Category III – Yellow Symbol</b>  – trefoil in black color  <b>Background</b> – the upper half in yellow color with white borders, the lower half in white  <b>Text in black</b> – in the lower half of the label “Radioactive III”, “Contents...”, “Activity...” and “Transport Index” box  <b>Number 7</b> – in the bottom corner</p>

### Class 8 – Corrosive Substances



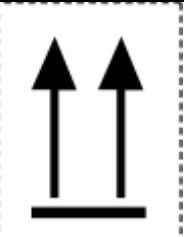
	<p><b>Symbol</b> – Liquids falling from two test tubes onto a hand and a black piece of metal  <b>Background</b> – Upper half in white color and lower half in black with white borders  <b>Text</b> – Corrosive (optional)  <b>Number 8</b> – In the bottom corner</p>
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**Class 9 – Miscellaneous Dangerous Substances and Articles Potentially Damaging to the Environment**


	<p><b>Symbol</b> – seven vertical bars in black in the upper half  <b>Background</b> – in white color  <b>Number 9</b> – In the 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 Packaging and Approval Marking.**

##### **4.4.1 Packing Groups, Classifying Criteria**

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

The packages/containers must comply with the following requirements:

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

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


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

##### **4.4.2 UN Packaging and Approval Marking**

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



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

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#### **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.

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#### **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. Alkalis

If substances are shipped under Not Otherwise Specified (N.O.S.) entries, the shipper will decide the appropriate segregation group.

In the IMDG code Volume 2 under column 16 of the numerical list of dangerous goods, the stowage conditions for each one of the dangerous goods listed can be found. Also, in this column, there is information on stowage related to sleeping, food, solutions and mixtures areas, etc. For example, the product “ALLYL BROMIDE UN No 1099”, column 16 indicates “Category B, far from living quarters.”

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

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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
<b>01</b>	On deck or below deck	On deck or below deck
<b>02</b>	On deck or below deck	On deck in closed transport units or under deck in closed
<b>03</b>	On deck or below deck	On deck only in closed cargo transport
<b>04</b>	On deck or below deck	PROHIBITED
<b>05</b>	On deck in closed cargo transport units or under deck	On deck in close cargo transport units or

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:


**“Away from”** (the minimum separation between two incompatible goods)

“Separated from”

**“Separated by a complete compartment or hold from”**

**“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:


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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:



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<b>1</b>	Away from	3 meters
<b>2</b>	Separated from	6 meters
<b>3</b>	Separated by a complete compartment or hold from	12 meters
<b>4</b>	Separated longitudinally by an intervening complete compartment or hold from	24 meters
<b>X</b>	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.

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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-	2.2	0	0	0	A	0	A	0	0	A	0	0	0
Toxic gases	2.3	0	0	0	S	0	S	0	0	S	0	0	0
Flammable liquids	3	S	A	S	0	0	S	A	S	S	0	0	0
Flammable solids, self-reactive substances and	4.1	A	0	0	0	0	A	0	A	S	0	A	0
Spontaneously combustible	4.2	S	A	S	S	A	0	A	S	S	A	A	0
Substances which, in contact with water, emit	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 (liquids and solids)	8	A	0	0	0	A	A	A	S	S	0	0	0
Miscellaneous dangerous substances and	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 to those where dangerous goods are stored. Such areas shall be adequately designed and equipped to avoid contaminated washing water ending up in the soil, waterways or sewerage system.

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

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#### **4.7 Dangerous Goods Documentation**

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

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

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

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

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

##### **4.7.1 Documents required for dispatching Dangerous Goods**

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

##### **4.7.1.1 Dangerous Goods Transportation Document**

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

The shipping name or correct technical name (no commercial names will be accepted)


The Class and Division when applicable. The Class or Division can be included in the risk class number. The compatibility group will also be indicated in goods from class 1; and in the case of gases involving secondary risks, information will be extended to indicate such risks

The United Nations number preceded by the letters UN

The packing group when assigned

The number and types of bundles, as well as the total quantity of dangerous goods per volume or mass

The flashpoint for materials having a flashpoint the same or lower than 61o C

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The subsidiary risks not indicated in the shipping name

When applicable, the goods shall be identified as “Marine Pollutant”

Empty means of containment, which contain the residue of dangerous goods shall be described as such, for example, by placing the words “Empty”, “Uncleaned” or “Residue Last Contained” before or after the proper shipping name

For dangerous goods in limited quantities, the phrase “Dangerous Goods in Limited Quantity” shall be included

For class 5.2 or self reactive substances of class 4.1, the regulation and emergency temperatures

A statement signed in the name of the consignor, saying that the goods are correctly described, classified, packed, marked and labeled and that its conditions are appropriate for transport

Additional information may also be required in certain cases for explosives, radioactive materials, dangerous goods transported in a molten state, etc.

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

#### **4.7.2 Dangerous Goods Declaration Ordinance**

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

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

The following are examples of dangerous goods descriptions:

ALLYL ALCOHOL 6.1, UN 1098 I

FORMIC ACID, 8, UN 1779, II


ACROLEIN STABILIZED, 6.1, UN 1902, G e/e I (3), MARINE POLLUTANT

#### **4.7.3 Container/Vehicle Packing Certificate**

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

The cargo transport unit was clean, dry and apparently fit to receive the goods

Incompatible substances have not been placed into the cargo transport unit (unless this had been specifically authorized by the competent national authority)

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All packages have been externally inspected for damage, and only sound packages have been loaded

All packages have been properly loaded and secured within the cargo transport unit

The cargo transport unit and the packages are properly marked, labeled and placarded

A dangerous goods transport document has been received for each dangerous goods consignment loaded in the container/vehicle

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

#### **4.7.4 Multimodal Model of the Transport Document**

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

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



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**MULTIMODAL DANGEROUS GOOD FORM**

1. Shipper/Consignor/ Sender Very Toxic Chemical Company 55 Prosperous Ave, Singapore 123456 Tel : 777-4444		2. Transport document number		3. Page 1 of 1 pages		4. Shipper's reference		5. Freight forwarder's reference	
6. Consignee Safe Chemical Trading Co.,Ltd 45th Street, Northumberland NE24 4RG United Kingdom Tel : 444-8448		7. Carrier (to be completed by the carrier) <b>SHIPPER'S DECLARATION (signature in block section 22 below)</b> I hereby declare that the contents of this consignment are fully and accurately described below by the Proper Shipping Name, and are classified, packaged, marked and labeled/placard marked and labeled/placard and are in all respects in proper condition for transport according to transport according to the applicable International and national governmental regulations							
8. This shipment is within the limitations prescribed for: (delete non-applicable) PASSENGER AND CARGO AIRCRAFT CARGO AIRCRAFT ONLY		9. Additional handling information							
10. Vessel/flight No. and date M.V. Green Voy. 123N		11. Port/place or loading Singapore		12. Port/Place of discharge Liverpool/ United Kingdom		13. Destination Manchester/UK			
14. Shipping marks		*Number and kind of package; description of goods		Gross mass(kg)		Net mass(kg)		Cube(m <sup>3</sup> )	
MOOV Head Lice Solution 200 ml		UN 1170, ETHANOL SOLUTION, Class 3, PG III, (24°C c.c.) LTD QTY F-E, S-D. Total: 3 Ctns (24/Ctn) In plastic Bottles : QTY : 72		20.25		14.04		0.057	
Resolve Solution 25 ml		UN 1170, ETHANOL SOLUTION, Class 3, PG II, (20°C c.c.) LTD QTY F-E, S-D. Total: 1 Ctn (14/Ctn) In plastic Bottles : QTY : 14		0.544		0.31		0.001	
15. Container Identification No/ vehicle registration No. SPDU1234567		16. Seal number(s) 5445974		17. Container/ vehicle size & type 40' GP		18. Tare mass (kg) 10,578		19. Total gross mass (including tare) (kg) 25,000	
20. CONTAINER/ VEHICLE PACKAGING CERTIFICATE I hereby declare that the goods described above have been packaged/ loaded into the container/ vehicle identified above in accordance with the applicable provisions <b>MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING</b>		21. RECEIVING ORGANIZATION RECEIPT Received the above number of packages/ container/ trailers in apparent good order and condition, unless stated hereon: RECEIVING ORGANIZATION REMARKS.							
Name of company Very Toxic Chemical Company, 55 Prosperous Ave, Singapore 123456 Tel : 777-4444		Hauler's name		22. Name of company (of SHIPPER PREPARING THIS NOTE Very Toxic Chemical Company		Name/status of declarant Mr. Abod Efghi /Export Asst.			
Name/status of declarant Mr. Pack Packman		Vehicle reg. No.		Signature and date		Place and date Singapore, 15 June 2011			
Place and date Singapore, 15 June 2011		Signature of declarant		Driver's Signature		Signature of declarant			
<p><b>DANGEROUS GOODS</b></p> <p>* You must specify Proper Shipping Name, hazard class, UN No, packing group, (where assigned) marine pollutant and observe the mandatory requirements under applicable national and international governmental regulation. For the purpose of the IMDG Code see, 5.4.1,4</p> <p>For the purpose of the IMDG Code. See 5.4.2</p>									

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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



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## **6 PROCEDURES FOR THE OPERATION**

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

**6.1.1** Direct when and where a ship, having any dangerous 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;


**6.1.2** 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

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

**6.1.4** The port operator should ensure that:

**6.1.4.1** adequate and safe mooring facilities are provided; and

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


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**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**

**6.2.1** 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.

**6.2.2** 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.

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

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**6.3 Procedures on keeping any inflammable, combustibile 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**

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

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

**6.3.3** These should include:

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

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

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

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

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

**6.3.5** While carrying out hot work it is essential that:


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

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

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

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

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

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#### **6.4 Procedures on fumigation, gas measurement and degasification**

**6.4.1** The IMO area shall be allocated at the onshore facility for cargo handling units that deal with loads held or to be held subject to fumigation and for gas measurement and degasification operations to be performed at these cargo handling units.

**6.4.2** The fumigation area shall be surrounded by the use of proper materials to prevent the access of unauthorized persons and marked warning signs for fumigation. This area shall be monitored by cameras and a checkpoint shall be developed when necessary during the whole period in which cargo handling units held or to be held subject to fumigation are temporarily stored.

**6.4.3** Fumigation operations, and gas measurement and degasification activities intended for cargo handling units fumigated shall be performed by relevant agencies or by organizations authorized by the Contracting Authority. The personnel assigned for the said operations and activities shall be controlled whether they are certified by the relevant agency or the Contracting Authority.

**6.4.4** The agency performing fumigation for the cargo handling unit shall not be the same with the authorized agency conducting risk assessment on the cargo handling unit fumigated, performing gas measurement in case of any risk found and executing active or passive ventilation.

**6.4.5** Any persons who are in charge of causing risk assessment and gas measurement to be performed, the facilities, agencies or organizations where such persons are present as the client and the entities having direct and/or indirect joint venture or interest relations with such agencies or organizations including those responsible for loads shall not be authorized as the agency performing risk assessment and gas measurement.

**6.4.6** Those cargo handling units which contain hazardous gases or are fumigated should be held subject to gas measurement and analysis before delivery to onshore facilities with the issuance of a certificate showing the type of gases analyzed, measurement values, and place, date and time of measurement.

**6.4.7** The gas measurement should be performed for those containers containing hazardous materials to be held subject to inspection by relevant agencies, containers containing loads which are likely to produce hazardous gases as a result of their features and containers fumigated, and the necessary degasification shall be performed in case of any hazardous gases found as a result of the measurement result.


**6.4.8** The relevant Port Authority and the onshore facility shall be notified of those fumigated cargo handling units dealing with loads reaching to the onshore facility and for the bulk cargo by the agency as required pursuant to the applicable legislation.

**6.4.9** The said notification should at least include the following information:

- a) Type of load or material fumigated
- b) Type of fumigant,
- c) Content and concentration of fumigant,
- ç) Place and date of fumigation,
- d) Estimated time of arrival cargo handling unit fumigated to the onshore facility.

**6.4.10** Any persons assigned for the handling of loads fumigated or other materials shall be trained as required in line with their job descriptions and the work to be performed by them. The said training shall at least include the following subjects.

- a) Information on fumigation operations and fumigants,

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- b) Knowledge about the general characteristics of fumigated containers, other cargo handling units or cargo warehouses,
- c) Practices for the unloading of fumigated containers and cargo handling units and the secure unloading of fumigated bulk cargo,
- ç) Information on the measurement of gas content inside fumigated containers and cargo handling units and on hazard limit of gases produced by the effect of fumigants,
- d) Information on the proper use of devices and equipment utilized for gas measurement and degasification,
- e) Use of personal protective equipment, clothing and devices,
- f) Information on potential risks which may arise during the handling of loads or materials fumigated.

**6.4.11** Fumigation warning signs, which are visible on all sides, shall be affixed to the upper side cargo handling units fumigated or to the exterior side cargo warehouses containing fumigated loads/materials.

**6.4.12** Following the ventilation of cargo handling unit or cargo warehouse, the person in charge shall perform gas measurement and issue a certificate of admission which shows the admission to such locations is safe.

**6.4.13** Those cargo handling units or bulk cargo warehouses, which are fumigated, shall be opened under the supervision of the qualified personnel certified by the Contracting Authority to perform gas measurement and/or degasification.

**6.4.14** No fumigation or degasification shall be performed at the onshore facility for bulk cargo available within the vessel's hold. The said processes shall be executed in mooring areas or other marine areas deemed appropriate by the relevant Port Authority.

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## **7 Documentation, Control And Record**

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

**7.1.1** The following documents related to 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

S O L A S 74 International Convention for the Safety of Life at Sea, 1974 as amended

CSS Code of Safe Practice for Cargo Stowage and Securing (CSS Code)

IMO / ILO / UNECE Guidelines to fill the cargo transport units (CTU's)

TDC Deck Cargo Secure Timber handling code 2011

GRAIN Code

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

**7.1.2** 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


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.

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

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

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

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

**7.2.3** Procedures regarding to appropriate identification of 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.


**7.2.4** 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;

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

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

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



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**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.**

**7.3.1** 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;

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

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

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


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**7.4 Procedures related to procurement of the Hazardous materials safety information sheets (SDS).**

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

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

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

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**7.5 Procedures for records and statistics of dangerous goods.**

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

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

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

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

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## **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 woactionS 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.

#### **8.1.2.1 The Dangerous Goods**


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

#### **8.1.2.2 The Population Threatened**

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

#### **8.1.2.3 Weather Conditions**

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

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### 8.1.3 Protective Actions

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

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

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

### 8.1.4 Evacuate

**8.1.4.1 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.

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

**8.1.4.3** They should not be permitted to congregat 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

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

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

**8.1.5.2.1** the vapors are flammable;

**8.1.5.2.2** if it will take a long time for the gas to clear the area; or

**8.1.5.2.3** if buildings cannot be closed tightly.

**8.1.5.2.4** 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.

**8.1.5.3** 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.

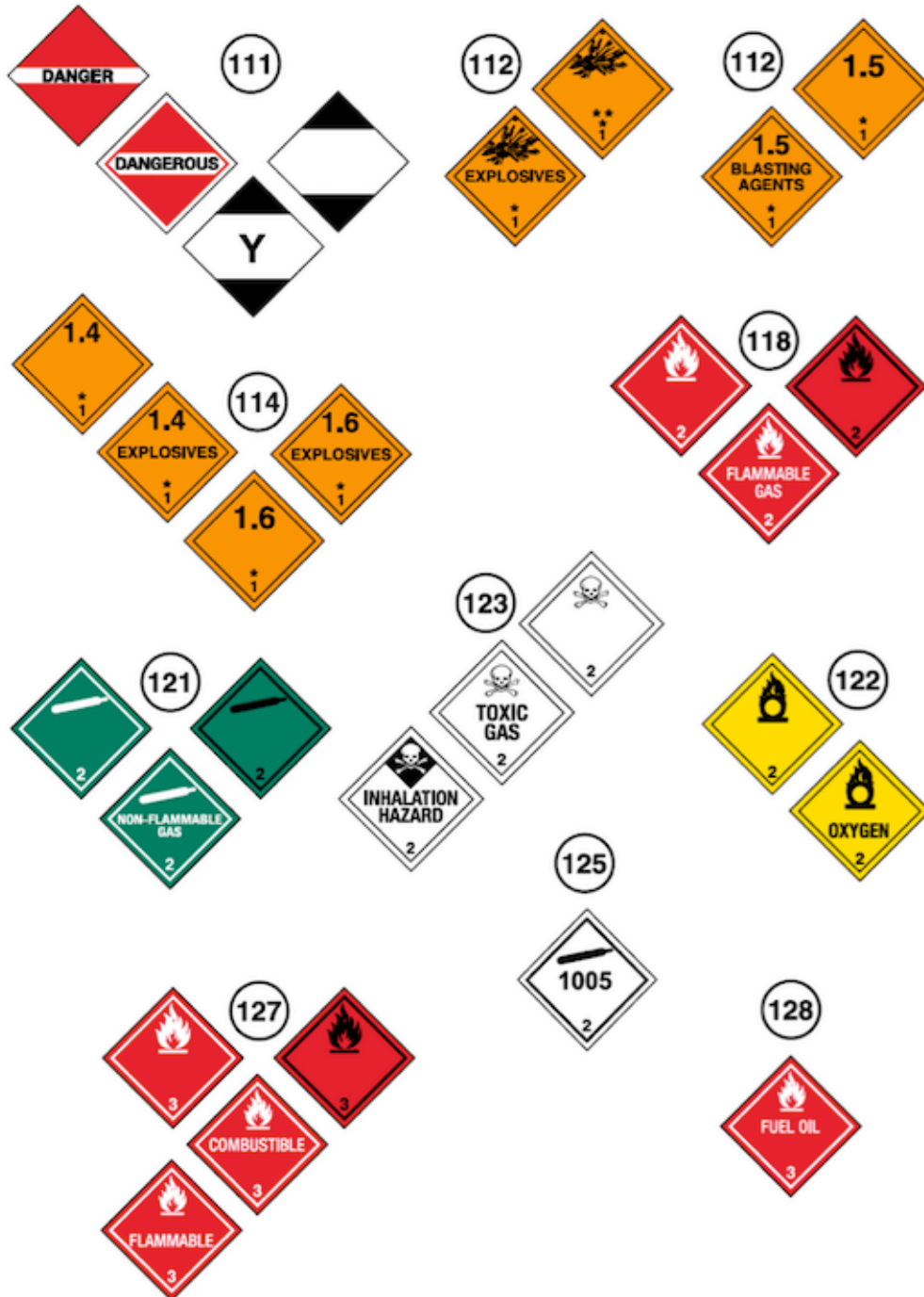
**8.1.5.4** Every dangerous goods incident is different. Each will have special problems and concerns. Action to protect the public must be selected carefully. These pages can help with initial decisions on how to protect the public. Officials must continue to gather information and monitor the situation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

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**Emergency Response Guide**

The following table below according to the guide number of intervention methods..

**USE THIS TABLE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED BY**





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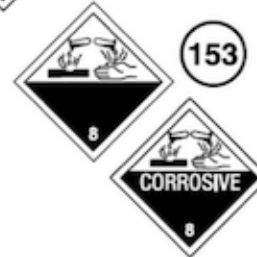
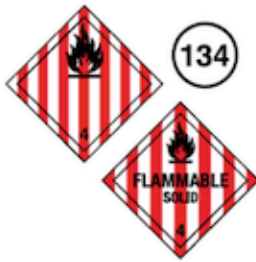
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117



- For liquefied compressed gases (e.g., LPG, ammonia)
- Rounded heads
- Design pressure between 100-500 psi\*\*

117



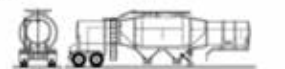
- For refrigerated liquefied gases (cryogenic liquids)
- Similar to a "giant thermo-bottle"
- Fitting compartments located in a cabinet at the rear of the tank
- MAWP between 25-500 psi\*\*

131



- For flammable liquids (e.g., gasoline, diesel)
- Elliptical cross-section
- Rollover protection at the top
- Bottom outlet valves
- MAWP between 5-15 psi\*\*

112



- For emulsion and water-gel explosives
- Hopper-style configuration
- MAWP between 5-15 psi\*\*

137



- For toxic, corrosive, and flammable liquids
- Circular cross-section
- May have external ring stiffeners
- MAWP of at least 25 psi\*\*

137

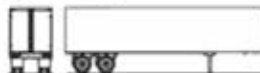


- Usually for corrosive liquids
- Circular cross-section
- External ring stiffeners
- Tank diameter is relatively small
- MAWP of at least 15 psi\*\*

117 Compressed Gas/Tube Trailer



111 Mixed Cargo



134 Dry Bulk Cargo Trailer



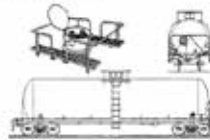
117 Intermodal Tank



137 Vacuum Tanker

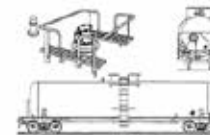


111 Pressure tank car



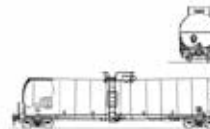
- For flammable, non-flammable, toxic and/or liquefied compressed gases
- Protective housing
- No bottom fittings
- Pressures usually above 40 psi

131 General service tank car (low pressure)




- For variety of hazardous and non-hazardous materials
- Fittings and valves normally visible at the top of the tank
- Some may have bottom outlet valve
- Pressures usually below 25 psi

131 Low pressure tank car (IC117, DOT117)



- For flammable liquids (e.g., Petroleum crude oil, ethanol)
- Protective housing separates from mainway
- Bottom outlet valve
- Pressures usually below 25 psi

Image provided as a courtesy of The Tankstar Companies, Inc.


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**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.

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

**8.4.1** In case of occurrence of emergency or detecting its symptoms, Emergency Manager (EM) initiate the appropriate measures pursuant to Emergency Management System (EMS) according to the relevant plans. Emergency Management Group (EMG) reviews the decisions regarding to the measures to be taken within scope of the ISGOTT and IMDG Code and put it into effect. Improvements continuously monitored by EMG and taking higher level of measures or help are decided, if needed..


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

- Facility / Site
- Institutions
- County, EMC
- City EMC

Possible to be managed by the central government.


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

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

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

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

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## **8.5 The procedures for reporting accidents.**

### **8.5.1 Communication**

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

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


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

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

### **8.5.2 Reports**

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

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

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**8.6 Coordination, support and cooperation method with authorities.**

**8.6.1** 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.


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

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

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

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

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

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## **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**

**8.7.1.1** All emergencies should be reported to the Port Authority.

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

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

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

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

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

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

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

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

**8.7.1.10** - The adequacy of the Trailers

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

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

**8.7.1.11.2** - Fire-fighting competence

**8.7.1.11.3** - The proximity of other vessels

**8.7.1.11.4** - Fire Ropes


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

### **8.7.2 Realization of Emergency Separation**

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

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



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

**8.7.2.3** Emergency Separation Process is as below.

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

**ATTENTION!**

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

**Post Emergency Separation**

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

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


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

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

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

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

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

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## **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**

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

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

### **8.8.2 Waste disposal**

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

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


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

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

### **8.8.3 Contaminated Packages;**

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

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

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## **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;**

**8.9.3.1** Have to be indicated within annual training plans.

**8.9.3.2** May be planned as local or general responses,

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

**8.9.3.4** Practices can be performed with or without notices.

**8.9.3.5** Practices are based upon different emergency scenarios.

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

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


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**8.10 Information on fire protection systems.**

**8.10.1** Emergency and fire equipment is given as follows:

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

The fire inventory is as in the Emergency Plan.

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

### **8.11.1 Fire-Protection Water Tanks and Fire-Protection Water**

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

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

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

### **8.11.2 Fire-Protection Water Pumps**

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

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

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

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


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

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

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

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

**8.11.2.8** If the check valve of the failed pump on the delivery pipe is blocked by materials such as paper, garbage, pieces, moss, mud and interrupts the proper close of the check valve, a part of the water pumped by the other pumps is pumped to the pool

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while passing through this failed pumps and suction pipes. This failure blocking the water discharge must be fixed in condition of fire occurrence. If a spinning is detected on some of the couplings of failed pumps during the operation of a part of the pumps, it must be interpreted as a sign for the above mentioned failure.

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

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

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

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

### **8.11.3 Sprinkler System**

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

### **8.11.4 Fire Protection Hydrant Installation**


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

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

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

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

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

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## **8.11.5 Portable Extinguishers**

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

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

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

## **8.11.6 Protection against freezing.**

**8.11.6.1** Protection of Generators

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


**8.11.6.2** Protection fire-protection water pumps.

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

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

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



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

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

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


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

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

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

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**8.13 Other risk control equipment.**

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## **9 SAFETY AND HEALTH AT WORK MEASURES**

### **9.1 Occupational health and safety measures.**

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

#### **9.1.1 Risk assessment**

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

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

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

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

**9.1.1.2.3** Duration, type and level of contagion.

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

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

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

**9.1.1.2.7** If available, results of last health surveillance.

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

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

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

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

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

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


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

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

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

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

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

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

**9.1.1.5.9** Safe or less dangerous chemical substance is used instead of dangerous substance in terms of employees' health by using substitution method. 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:

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

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

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

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

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

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


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

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

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

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

**9.1.1.10** Protective systems those were provided for protecting work equipment and employees, are designed, produced and supplied in accordance with legislation in force in terms of health and safety. Harbor Structure Management provides all equipment and protective systems to be used at explosive places, to be in accordance

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with provisions of Regulation About Equipment and Protective Systems Used at Probable Explosive Places (94/9/AT) published at 26392 4 repeated numbered and 30/12/2006 dated official gazette

**9.1.1.11** Arrangements to reduce effect of explosion pressure are made.

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

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

### **9.1.2 Emergencies**

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

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

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

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

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


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

### **9.1.3 Workers' education and informing them**

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

**9.1.3.1.1** Information gained as a result of the risk evaluation.

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


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

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

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

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

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## **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. .

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## **10 OTHER POINT**


### **10.1 Validity of the Hazardous Substances Compliance Certificate.**



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## **10.2 Responsibilities of the Dangerous Goods Safety Consultant**

As in section 2.4.

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**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.).**

**10.3.1 Packaged dangerous cargoes and bulk dangerous cargoes (liquid or solid):**

**10.3.1.1** Name of the consignor (shipper) and date of delivery to the port area, normally not less than 24 hours before arrival;

**10.3.1.2** 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;

**10.3.1.3** for bulk dangerous cargoes: the product name and any other information required by the relevant IMO code; and

**10.3.1.4** the name of the ship into which the dangerous cargoes are to be loaded (if applicable), the ship's agent and the port.

**10.3.2 Necessary certificates**


Hazardous Cargo Declaration, Hazardous Cargo Transport Dispatch, Multi Mode Hazardous Cargo 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.

**10.3.3 Speed Limit in Port Facility**

Speed limit in our port facility is 20 km.

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**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.)**

**10.4.1 Arrival by Sea**

**10.4.1.1** Packaged hazardous cargos:

**10.4.1.1.1** Name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;

**10.4.1.1.2** Suitable Dispatch name of 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;

**10.4.1.1.3** each cargo, dispatch or item in list should be numbered successively for easy reference.

**10.4.1.1.4** stacking of hazardous cargo in a way to mark the ones to be unloaded and left in ship;

**10.4.1.1.5** the hazardous cargo to be left in ship should be indicated in a manner to refer the numbers in list (see above)

**10.4.1.1.6** condition of hazardous cargos in case of possibility of occurrence an unappropriate hazard and

**10.4.1.1.7** any known defect that will able to affect security of ship or port area.

**10.4.1.2** Hazardous bulk cargo (liquid or solid);

**10.4.1.2.1** name and IMO number of ship, agency and estimated time of arrival (ETA), 24 hours at the latest from arrival normally;

**10.4.1.2.2** a list showing product name of hazardous cargos and other information necessitated with related IMO Code

**10.4.1.2.3** A valid International Conformity Certificate for Bulk Transport of Hazardous Chemicals or a valid Conformity Certificate for Transport of Bulk Hazardous Chemical, whichever is appropriate, International Pollution Prevention Certificate for Liquid Bulk Substances hazardous for Health (NLS Certificate) and/or International Fuel Pollution Prevention Certificate should be made available for cargo;

**10.4.1.2.4** Hazardous cargos to be left in ship should be indicated in a way to refer the numbers in list;

**10.4.1.2.5** The unitized carries which enter in a solid cargo terminal should also specify qualification of the last three cargos and where applicable, flash points and current situation of tank/cargo holes (i.e. if they are gasless)

In the event of occurrence of any inconvenient danger, situation of hazardous cargos and taking under protection of cargo and transport system, the equipment related to the cargo shipped bulkly and a defect known in instrumentation and


**10.4.1.2.6** any known defect that may influence security of port area or ship

**10.4.1.3.7** The additional information to be presented to port administration before 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 voards concerning packaged hazardous cargos are:

.1 Container number

.2 shipping license no or reference (if IMDG Code is class 1 or 7)

.3 name and communication details of receiver or local carrier (if available)

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**10.4.2 Departure by Sea**

**10.4.2.1** Packaged hazardous cargos:

**10.4.2.1.1** name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;

**10.4.2.1.2** Suitable Dispatch name of 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;

**10.4.2.1.3** stacking place on board of hazardous cargos.


**10.4.2.2** hazardous bulk cargos (liquid or solid):

**10.4.2.2.1** name of ship and IMO number of ship, agency and estimated time of departure (ETD) as necessitated by regulatory boards;

**10.4.2.2.2** a list showing product name of hazardous bulk cargos and other information necessitated by related IMO Code

**10.4.2.2.3** A valid International Conformity Certificate for Bulk Transport of Hazardous Chemicals or a valid Conformity Certificate for Transport of Bulk Hazardous Chemical, whichever is appropriate, International Pollution Prevention Certificate for Liquid Bulk Substances hazardous for Health (NLS Certificate) and/or International Fuel Pollution Prevention Certificate should be made available for cargo;

**10.4.2.2.4** stacking on board or place of hazardous cargos.

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## **10.5 Additional points will be added by the port facility.**

### **10.5.1 Training**

#### **10.5.1.1 Management**

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

**10.5.2.2** Management at all levels should exercise day-to-day responsibility for health and safety. In order to draw up safe operational procedures for the transport and handling of dangerous cargoes, management should carry out an assessment of the risks involved. In certain cases a quantified risk assessment may be necessary.

#### **10.5.1.2 Personnel (cargo interests, port operators and ships)**

**10.5.1.2.1** Every person engaged in the transport or handling of dangerous cargoes should receive training on the safe transport and handling of dangerous cargoes, commensurate with his responsibilities.

#### **10.5.1.3 Shore-based personnel**

Should receive general awareness/familiarization training, function-specific training and safety training

### **10.5.2 Training content**

#### **10.5.2.1 General awareness/familiarization training**

**10.5.2.1.1** Every person should receive training on the safe transport and handling of dangerous 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.

#### **10.5.2.2 Function-specific training**

**10.5.2.2.1** Every person should receive detailed training concerning specific requirements for the


**10.5.2.2.2** transport and handling of dangerous cargoes which are applicable to the function that he performs.

#### **10.5.2.3 Safety training**

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

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

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

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## **10.6 Accident Prevention Policy**

As SAMSUNPORT INTERNATIONAL PORT MANAGEMENT management, we are aware of that the operations realized in our port have the potential that will lead to accidents inherently. However, we believe all accidents may be prevented. Therefore, we undertake to manage operation ideally to protect subcontractors, visitors, neighbours and environment at the highest level through preventing accidents.

With the aim of preventing accidents and mitigate the effects in the direction of SAMSUNPORT INTERNATIONAL PORT MANAGEMENT Quality Management Systems, as SAMSUNPORT, we will apply the POLICIES about

- taking high level security measures for human and environment around Port facility and procuring all resources for this purpose,
- making the risk evaluation based on quantitative analysis related to ordinary and extraordinary operation and keeping these evaluations updated continuously with the purpose of determining and assessing accidents
- having performed the arrangements covering maintenance, repair and temporary stopping related to detected risks and preparation of requisite procedures
- following technological development and providing support required for continuous improving of security measures in facilities with the aim of preventing accidents and mitigate the effects
- making necessary arrangements required for design of new facility, process along with planned changes and having performed risk evaluations absolutely before realization and assessing acceptability
- determining emergencies that will be detected before with systematic analysis, preparing emergency plans for these emergencies and reviewing with drills following realization of audit regularly
- tracking performance of system within the framework of procedures to evaluate conformity to the targets identified with Quality Management Systems, in case of failing to provide conformity, searching corrective activities
- evaluating efficiency and conformity of Quality Management Systems periodically and systematically, documentation, certification, performing review by us as top management and giving support for continuous improvement of Quality Management Systems
- employing the personnel who have knowledge, education and experience convenient for the positions that will affect safety and security of operational job processes within organization,
- ensuring that our employees in charge develop themselves constantly by means of giving trainings,
- adhering to national and international law, regulation, bylaws and standards
- ensuring health and securities of employees, contractors, visitors and neighbours and protection of environment whereby preventing accidents and eliminating the effects systematically through taking necessary measures and searching potential incompatibilities with policy

**AS MANAGEMENT AND ALL EMPLOYEES.**

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### **10.7 Hot Work Procedure**

1. No permit is given for the hot works to be done aboard ship. However, in necessary cases, after taking permits in the direction of legal legislations by ship agency, it will be realized under the control of port facility.
2. Before starting to hot works and procedures in our port facility, written permit regarding applicability of hot works in question will be taken from port presidency. With abovementioned permit, the place where hot work and procedures will be performed and related details and additionally safety measures to be applied will be specified on Hot work form.
3. Hot Work Form covers the following.
  - 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)
  - ç) 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 understandable 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 extinguishing 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):

Flame (welding, soldering, brazing, etc)

Spark or slag (grinding, cutting, friction tools, welding, etc)

Hot Object (metal surface, plate, etc)

Other:

**Hazard identification, risk analysis and control measure selection:**

Add an additional page if the space below is insufficient.

**Specific Hot Work Issues:**  
(tick appropriate)

The hot work is to be solely undertaken by a contracted party personnel and a detailed work method statement / risk assessment has been previously prepared, reviewed by is attached to this Form.

Attach documentation & proceed to Section 2 on the following page.

The hot work is to be solely undertaken by personnel as per the specific hot work issues detailed below.

Complete the Risk Assessment below.

**Risk Assessment Guide**

Step 1 – Consider Consequences		Step 2 – Consider Likelihood		Step 3 – Calculate Risk						
What are the consequences of this hazard occurring? Consider what is the most probable consequence (below) with respect to this work hazard.		What is the likelihood (below) of the hazard consequence in Step 1 occurring.		1. Take Step 1 rating and select the correct column. 2. Take Step 2 rating and select the correct line. 3. Use the risk score where the two ratings cross on the matrix below. H = High, S = Serious, M = Medium, L = Low						
Extreme	Multiple fatalities or permanent injuries	Almost Certain	Is expected to occur in most circumstances	Likelihood	Consequences					
Critical	Single fatality or permanent injury	Likely	Will probably occur at least once		Ins	Min	Maj	Crit	Ext	
Major	Medical treatment or lost time injury	Possible	Event might occur at some time		Almost Certain	M	S	H	H	H
Minor	First aid treatment	Unlikely / Rare	Event not expected to occur or only in exceptional circumstances		Likely	M	M	S	H	H
Insignificant	Incident or near miss – no treatment				Possible	L	M	M	S	S
				Unlikely / Rare	L	L	M	M	S	

Hazard (List the hazards relating to the work)	Controls (List the controls to manage each of the hazards)	Personal Protective Wears	Responsible Party (List the role, contractor, competency &/or prescribed occupation responsible for implementing the controls)	Risk Assessment (With controls in place: High, Serious, Medium or Low)

**Risk Assessment Personnel:**

Risk Assessment Completed by:

Name:

Employer:

Date:

Name:

Employer:


Date:





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<b>Section 2 – Hot Work Permit</b>				
As per the method of hot work and location described in Section 1, identify control requirements in the relevant parts below.				
<b>General Hot Work / Ignition Controls</b>				
Identify those general hot work and ignition controls required to be undertaken as part of the hot work: (Identify as yes or not applicable)	Yes	NA	Control	
<input type="checkbox"/>	<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 <i>not</i> to be relied upon)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Catch mats or boards are to be positioned over grid-mesh, flooring, grates to catch sparks or slag	
<input type="checkbox"/>	<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)	
<input type="checkbox"/>	<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)	
<input type="checkbox"/>	<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)	
<input type="checkbox"/>	<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	
<b>Specific Hot Work / Ignition Controls</b>		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"/>	
<b>Additional Hot Work Controls within Confined Spaces</b> <input type="checkbox"/> NA (Not Applicable)				
Controls:				
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"/>	
<b>Completion Hot Work</b> <input type="checkbox"/> NA (Not Applicable)				
Controls:				
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"/>	
<b>Permit Request:</b>				
Name: _____	Signature: _____	Date: _____	Time: _____	
<b>Approved</b>				
Name: _____	Signature: _____	Date: _____	Time: _____	

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## 11 ANNEXES

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## 12 ABBREVIATIONS

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## 13 PRESENTATION

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## **14 DEFINITIONS**