



## **ROTAPORT 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 shall not be taken inside the port facility. These cargoes are defined as dangerous cargoes which cannot be permitted absolutely. General cargoes and project cargoes are handled with direct delivery. All kinds of bulk cargo, mines, coal, cement, clinker, fertilizers containing ammonium nitrate, all kinds of solid bulk cargoes of this type within the scope of IMSBC code and all kinds of cereals shipped as bulk cargo within the scope of Grain code are handled at the cereal port facility. Project cargoes are also handled at the port facility. Before the cargo arrives, the SDS reaches the port by e-mail, where necessary measures are taken. Special personal protective equipment (overalls, gas mask, etc.) are available at the port. The following loads have come to the port.


NO	Trade Name	Proper Shipping Name	UN NO	Class	PG	Label
1	Urea	-	-	-	-	-
2	Sulphur, Sulfur (Granular Form)	-	-	-	-	-
3	Di ammonium phosphate (DAP)	-	-	-	-	-
4	Ferrosilicon	FERROSİLİSYUM	1408	4.3	III	4.3+6.1
5	Ammonium Sulfate Steel Grade	-	-	-	-	-
6	Magnesium Nitrate Hexahydrate	-	-	-	-	-
7	Şamot	-	-	-	-	-
8	Kaolin	-	-	-	-	-
9	Soda Solvay Dense	-	-	-	-	-

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

a. 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, DGSA unit, DGSA and other related persons shall participate to the meeting. (The resolution to hold such meeting will be taken through the operation or HSE/DGSA departments regarding the dangerous cargoes handled routinely which are accepted to the port)

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

- Risk arising from dangerous cargo
- Interaction with dangerous cargoes existing at the port facility,
- Interaction with cargoes planned to be accepted to the port facility in the near future,

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- Requirement of materials and equipment with respect to emergency response
- Sufficiency of emergency response equipments
- 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.


c. 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.

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

e. Planning and preparations for the handling of dangerous goods coming to our coastal facility are made by taking into account the information in the preliminary notification and safety data sheet and the relevant personnel are informed.

f. In our coastal facility, the responsible unit requests the safety information form of dangerous goods from the loader, and takes into account the information in the safety data sheet for precautions to be taken for first aid and emergency preparedness and for handling and temporary storage applications. The safety data sheet is prepared by the loader to the safety data sheet maker, and the safety data sheets that do not meet these conditions are not accepted by our shore facility.

g. If it is not possible to make the cargo transport unit suitable for re-transport at the coastal facility, it is not accepted to the coastal facility.

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### **1.3 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

#### **1.3.1 Solid bulk dangerous cargoes**

**1.3.1.1** 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.

**1.3.1.2** 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.

**1.3.1.3** 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.

**1.3.1.4** 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.

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

**1.3.1.6** 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.


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

#### **1.3.2 Requirements**

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

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

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

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**1.3.2.4** 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.

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

**1.3.2.6** 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.

**1.3.2.7** 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.

**1.3.2.8** The master and the berth operator will ensure, within their respective areas of responsibility, that operations regarding transport, handling or loading or unloading of solid bulk dangerous 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)”.

### **1.3.3 Responsibility for compliance**


**1.3.3.1** 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.

### **1.3.4 Emission of harmful dusts**

**1.3.4.1** 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.

**1.3.4.2** 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.

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

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**1.3.5.1** 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.

**1.3.5.2** 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.

### **1.3.6 Requirements**

**1.3.6.1** Additional safety and security measures to be taken at coastal facilities and these measures will be provided by the Operations department.

**1.3.6.2** Two people responsible for handling dangerous solid bulk cargoes are assigned and their duties are defined in the quality management system.

**1.3.6.3** Electrical equipment, equipment and equipment to be used in areas where hazardous materials are handled shall be in standards suitable for use in flammable, flammable or explosive environments. Electric lamps other than arc lamps will be used during load operations for dangerous solid bulk cargoes and these lamps will be gas-tight.

**1.3.6.4** Adequate number of appropriate personal protective clothing, equipment and equipment will be provided against the properties and risks of dangerous solid bulk cargoes handled.


**1.3.6.5** Surroundings of the areas, such as coal, which are self-burning but not affected by water, where hazardous materials are stored, should be equipped with water balls and irrigation will be carried out in a way to prevent burning. While declaring temporary storage area, it will be taken into consideration whether the area around the area has a drainage system to collect polluted waters.

**1.3.6.6** Tarpaulins that will prevent the solid bulk dangerous cargoes from falling into the sea during evacuation or loading on the ship will be kept between the ship and the pier during the operation.

**1.3.6.7** The captain of the ship to load / unload dangerous solid bulk cargo will be taken by the operation officer before starting the loading / unloading process, which contains details about the location and quantities of the cargo in question. Regarding the loading / unloading plan in question, a consensus will be reached between the ship's captain operation officer.

### **1.3.7 Emission of explosive dusts**

**1.3.7.1** 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.

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**1.3.7.2** 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.

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

**1.3.8.1** 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.

### **1.3.9 Oxidizing substances**

**1.3.9.1** 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.

### **1.3.10 Incompatible materials**

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

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

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

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

#### **Group A cargoes**

##### **Mineral concentrations**


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

##### **Nickel ore**

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

##### **Coal**

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

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### 1.3.11.2 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, self-reactive substances, polymerizing substances and solid desensitized explosives

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:

**Flammable solids:** are readily combustible solids and solids which may cause fire through friction.

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

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

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

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

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

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

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


#### **Coal**

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

#### **Petroleum coke**

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



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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..

**1.3.11.3** 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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## **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 port authority.

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

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

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

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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.

**2.4.4.20** In cases where there is a danger, stopping the work done until the danger is eliminated, starting the work with its own approval when the danger is eliminated, and notifying the business or the competent authorities in writing of all stages in the process until the danger is eliminated.

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

3.2.2 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;

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.

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**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.

### **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;



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**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.

**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.

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**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;

**3.12.1.2** Check, where practicable, packages, unit loads and cargo transport units containing dangerous cargoes to verify that they are marked, labelled or placarded in accordance with the provisions of the IMDG Code and the appropriate national or international legal requirements applicable for the mode of transport and that unnecessary labels, placards and marks have been removed and that the cargo transport units have been loaded, packed and secured in accordance with the IMO/ILO/UN ECE Guidelines for Packing of Cargo Transport Units (CTUs);

**3.12.1.3** Check, by external examination, the physical condition of each freight container, tank-container, portable tank or vehicle containing dangerous cargoes for



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obvious damage affecting its strength or packaging integrity and for the presence of any sign of leakage of contents.

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

**3.12.3** If any of the checks mentioned above reveal deficiencies which may affect the safe transport or handling of dangerous 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.

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

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

**3.15.1** Fumigation is possible in the port.

**3.15.5** It ensures that nobody enters a warehouse, warehouse or cargo transport unit that is not properly ventilated, gas is not discharged, fumigation warning signs are not issued, safe to enter by the responsible person, and a discharge certificate is not issued.

### **3.16 Contaminated wastes**

**3.15.1** 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.

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

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

**3.17.1** 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.

**3.17.2** Qny 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**

**3.19.1** 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.

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


### **3.21 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 Signals**

**3.21.1** 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.

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

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

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

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

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

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

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

**3.21.5.1** access to the vessels;

**3.21.5.2** radio and radar transmissions;

**3.21.5.3** transiting the anchorage; and

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

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

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

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

### **3.23 Communications**


**3.22.1** 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.

### **3.24 Areas**

#### **3.24.1 Dangerous cargo areas**

**3.24.1.1** 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.

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

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**3.24.1.3** 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.

### **3.24.2 Lorry parking areas**

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

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

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

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

### **3.24.3 Fumigation areas**

There is no fumigation process at the port. If permission is obtained and done;

**3.24.3.1** Separate areas are provided or specified for ships to be fumigated and / or cargo transports.

**3.24.3.2** These areas are fenced to prevent unauthorized persons from entering or appropriate communication tools are provided for staff when a checkpoint is created.


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

**3.24.4.1** 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.

**3.24.4.2** 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.

**3.24.4.3** 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.

### **3.24.5 Repairing/cleaning facilities**

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**3.24.5.1** 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.


**3.24.5.2** 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.

### **3.24.6 Reception facilities**

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

### **3.25 Training**

**3.24.1** 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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Class 1		
	1	Explosives
Sub-Classes		
	1.1	Mass explosion hazard substances and objects
	1.2	Substances and objects that have a projection hazard but not a mass explosion hazard
	1.3	Substances and articles with a fire hazard or a slight explosion hazard or a slight eject hazard, or both, but not a mass explosion hazard
	1.4	Substances and objects that do not present a significant hazard
	1.5	Substances with mass explosion hazard but low sensitivity
	1.6	Extremely low precision objects with no mass explosion hazard




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Class 2					
	2.1	Flammable gas			
	2.2	Non-flammable non-toxic gases			
	2.3	Toxic gases			
Class 3					
	3	Flammable liquids			
Class 4					
	4.1	Flammable solids, self-reactive substances, solid desensitized explosives and polymerizers			
	4.2	Substances prone to spontaneous combustion			
	4.3	Substances which, in contact with water, emit flammable gases			
Class 5					
	5.1	Oxidizing substances			
	5.2	Organic peroxides			
Class 6					

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

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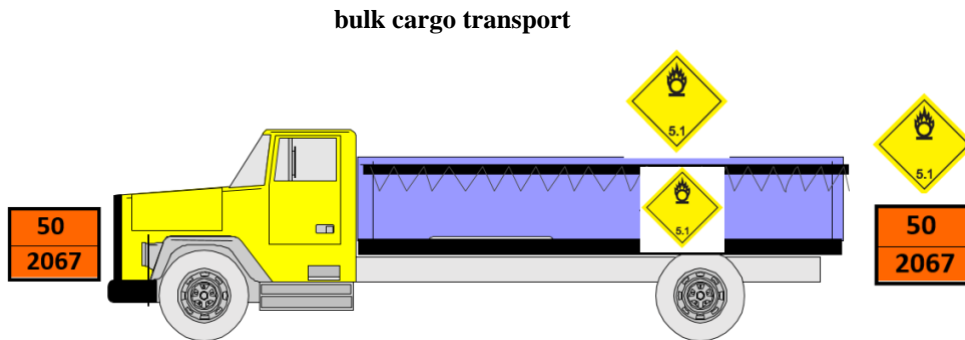
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## 4.2 Dangerous Goods Bulk Cargo Transport

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.




## 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 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 (except class 7

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and environmentally hazardous substance mark)25 x 25 cm. Containers carrying more 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. UN numbers, excluding Class 1 items, shall be placed on the following shipments as required in this section:

- .1 solids, liquids or gases carried in tank cargo transport units, including each compartment of a multi-compartment tank cargo transport unit;
- .2 loaded packaged dangerous goods with a gross mass of more than 4000 kg, which is the only hazardous substance in the cargo transport unit assigned a single UN number;
- .3 Class 7 LSA-I or SCO-I material unpackaged in or on a vehicle or freight container or tank;
- .4 exclusively-use packaged radioactive material in or on a vehicle or in a freight container assigned a single UN number;
- .5 solid dangerous goods in bulk containers.

A cargo transport unit or bulk container containing dangerous goods or residues will carry clearly visible placards as follows:


- .1 freight container, semi-trailer or portable tank: one on each side edge and one on each end edge. Portable tanks with a capacity of less than 3000 liters can be plated or; they can only be labeled on opposite sides.
- .2 railway carriages: at least one on each side;
- .3 multi-compartment tank carrying more than one dangerous substance or its residues: on each side of the location where the respective compartments are located. In cases where all compartments are required to carry the same plate, these plates must be located along both sides of the cargo transport unit and only once.
- .4 Flexible bulk containers: at least on two opposite sides; and
- .5 any other cargo transport unit: on at least two sides and on the rear of the unit.

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 – Explosive substances or objects


	<p><b>Label model no - 1</b>  <b>Class, Division or Category -</b> Division 1.1 / 1.2 / 1.3  <b>Symbol and symbol color -</b> Exploding bomb: black  <b>Ground -</b> Orange  <b>Shape (and shape color) in the bottom corner -</b> 1 (black)  <b>Note:</b>        * * Section location - explosive, secondary hazard will be left blank.        * Compatibility group location - explosive, secondary hazard will be left blank</p>
	<p><b>Label model no - 1.4</b>  <b>Class, Division or Category -</b> Division 1.4  <b>Symbol and symbol color -</b> 1.4: black / Numbers will be approximately 30mm high and 5mm thick (for a 100mm × 100mm label)  <b>Ground -</b> Orange  <b>Shape (and shape color) in the bottom corner -</b> 1 (black)  <b>Note:</b>        * Compatibility group location</p>
	<p><b>Label model no - 1.5</b>  <b>Class, Division or Category -</b> Division 1.5  <b>Symbol and symbol color -</b> 1.5: black / Numbers will be approximately 30mm high and 5mm thick (for a 100mm × 100mm label)  <b>Ground -</b> Orange  <b>Shape (and shape color) in the bottom corner -</b> 1 (black)  <b>Note:</b>        * Compatibility group location</p>
	<p><b>Label model no - 1.6</b>  <b>Class, Division or Category -</b> Division 1.6  <b>Symbol and symbol color -</b> 1.6: black / Numbers will be approximately 30mm high and 5mm thick (for a 100mm × 100mm label)  <b>Ground -</b> Orange  <b>Shape (and shape color) in the bottom corner -</b> 1 (black)  <b>Note:</b>        * Compatibility group location</p>

### Class 2 – Gases


	<p><b>Label model no - 2.1</b>  <b>Class, Division or Category -</b> Class 2.1: Flammable gases  <b>Symbol and symbol color -</b> Flame: black or white  <b>Ground -</b> Red  <b>Shape (and shape color) in the bottom corner -</b> 2 (black or white)</p>
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	<p><b>Label model no - 2.2</b>  <b>Class, Division or Category - Class 2.2:</b>  Non-flammable non-toxic gases  <b>Symbol and symbol color - Gas cylinder:</b>  black or white  <b>Ground - Green</b>  <b>Shape (and shape color) in the bottom corner - 2 (black or white)</b></p>
	<p><b>Label model no - 2.3</b>  <b>Class, Division or Category - Class 2.3:</b>  Toxic gases  <b>Symbol and symbol color - Skull and crossbones:</b>  black  <b>Ground - White</b>  <b>Shape (and shape color) in the bottom corner - 2 (black)</b></p>

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### Class 3 – Flammable Liquids

	<p><b>Label model no - 3</b>  <b>Class, Department or Category - -</b>  <b>Symbol and symbol color - Flame: black or white</b>  <b>Ground - Red</b>  <b>Shape (and shape color) in the bottom corner - 3 (black or white)</b></p>
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### Class 4 – Flammable solids; substances prone to spontaneous combustion; substances that, in contact with water, emit flammable gas

	<p><b>Category - Class 4.1: Flammable solids, self-reactive substances, desensitized explosives, polymerizing substances</b>  <b>Symbol and symbol color - Flame: black</b>  <b>Ground - White with seven vertical red stripes</b>  <b>Shape (and shape color) in the bottom corner - 4 (black)</b></p>
	<p><b>Category - Class 4.2: Substances liable to spontaneous combustion</b>  <b>Symbol and symbol color - Flame: black</b>  <b>Ground - Top half white, bottom half red</b>  <b>Shape (and shape color) in the bottom corner - 4 (black)</b></p>
	<p><b>Category - Class 4.3: Substances which, in contact with water, emit flammable gases</b>  <b>Symbol and symbol color - Flame: black or white</b>  <b>Ground - Blue</b>  <b>Shape (and shape color) in the bottom corner - 4 (black or white)</b></p>






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### Class 5 – Oxidizing Substances or Organic Peroxides





	<p><b>Category</b> - Class 5.1: Oxidizing substances  <b>Symbol and symbol color</b> - Flame on circle: black  <b>Ground</b> - Yellow  <b>Shape (and shape color) in the bottom corner</b> - 5.1 (black)</p>
	<p><b>Category</b> - Class 5.2: Organic peroxides  <b>Symbol and symbol color</b> - Flame: black or white  <b>Ground</b> - Top half red, bottom half yellow  <b>Shape (and shape color) in the bottom corner</b> - 5.2 (black)</p>

### Class 6 – Toxic Substances or Infectious Substances


	<p><b>Label model no</b> - 6.1  <b>Class, Division or Category</b> - Class 6.1: toxic substances  <b>Symbol and symbol color</b> - Skull and crossbones: black  <b>Ground</b> - White  <b>Shape (and shape color) in the bottom corner</b> - 6 (black)</p>
	<p><b>Label model no</b> - 6.2  <b>Class, Division or Category</b> - Class 6.2: Infectious substances  <b>Symbol and symbol color</b> - Three crescents overlapping in circle: black  <b>Ground</b> - White  <b>Shape (and shape color) in the bottom corner</b> - 6 (black)  <b>Note:</b> The underside of the label may bear the following phrases: "INFECTIOUS SUBSTANCE" and in Black, "In the case of damage or leakage, immediately notify the State Health Authority" (In the case of damage or leakage immediately notify Public Health Authority).</p>

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### Class 7 – Radioactive Materials

	<p><b>Label model no - 7A</b>  <b>Class, Division or Category - Category I</b>  <b>Symbol and symbol color - Clover: black</b>  <b>Ground - White</b>  <b>Shape (and shape color) in the bottom corner - 7 (black)</b>  <b>Note:</b> Text (required): in black in the lower half of the label:  "RADIOACTIVE"  "CONTENTS..." (RADIOACTIVE CONTENTS)  "ACTIVITY..." ("ACTIVITY...")  A red vertical band will follow the word "RADIOACTIVE".</p>
	<p><b>Label model no - 7B</b>  <b>Class, Division or Category - Category II</b>  <b>Symbol and symbol color - Clover: black</b>  <b>Ground - upper half yellow with white borders; bottom half is white</b>  <b>Shape (and shape color) in the bottom corner - 7 (black)</b>  <b>Note:</b> Text (required): in black in the lower half of the label:  "RADIOACTIVE"  "CONTENTS..." (RADIOACTIVE CONTENTS)  "ACTIVITY..." ("ACTIVITY...")  Inside a black outlined box: "TRANSPORT INDEX" WILL BE INDICATED  Two vertical stripes in red will follow the word "RADIOACTIVE".</p>
	<p><b>Label model no - 7C</b>  <b>Class, Division or Category - Category III</b>  <b>Symbol and symbol color - Clover: black</b>  <b>Ground - upper half yellow with white borders; bottom half is white</b>  <b>Shape (and shape color) in the bottom corner - 7 (black)</b>  <b>Note:</b> Text (required): in black in the lower half of the label:  "RADIOACTIVE"  "CONTENTS..." (RADIOACTIVE CONTENTS)  "ACTIVITY..." ("ACTIVITY...")  Inside a black outlined box: "TRANSPORT INDEX" WILL BE INDICATED.  Three vertical stripes in red will follow the word "RADIOACTIVE".</p>
	<p><b>Label model no - 7E</b>  <b>Class, Division or Category - Fissile material</b>  <b>Symbol and symbol color - -</b>  <b>Ground - White</b>  <b>Shape (and shape color) in the bottom corner - 7 (black)</b>  <b>Note:</b> Text (required): in black in the lower half of the label:  "FISSILE" (CAN BE DIVIDED);  In a black corner box on the lower half of the label: "CRITICALITY SAFETY INDEX..." must be stated.</p>



### Class 8 – Corrosive Substances

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	<p><b>Label model no - 8</b>  <b>Class, Department or Category - -</b>  <b>Symbol and symbol color -</b> Liquids pouring from two glass containers and attacking metal with one hand  <b>Ground -</b> The upper half is white, the lower half is black with white borders  <b>Shape (and shape color) in the bottom corner - 8</b>          (white)</p>
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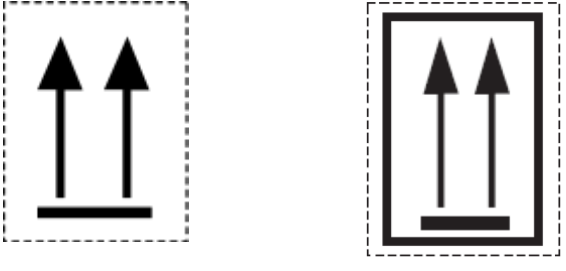
**Class 9 – Various Hazardous Substances and Products Potentially Harmful to the Environment**

	<p><b>Label model no - 9</b>  <b>Class, Department or Category - -</b>  <b>Symbol and symbol color -</b> Seven vertical stripes in upper half: black  <b>Ground -</b> White  <b>Shape (and shape color) in bottom corner -</b>          Underlined 9 (black)</p>
	<p><b>Label model no - 9A</b>  <b>Class, Department or Category - -</b>  <b>Symbol and symbol color -</b> Seven vertical stripes in upper half: black; battery group in the lower half and one defective and flame-emitting battery: black  <b>Ground -</b> White  <b>Shape (and shape color) in bottom corner -</b>          Underlined 9 (black)</p>


**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>
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	<p>UN number notation;          * Location of class or department number          ** location of UN number</p>
	<p>Black direction arrows</p>

**Placards for Marine Pollutants**

	<p>The mark will be in the form of a square (diamond shape) set at an angle of 45 °. The symbol (fish and tree) will be white or black on a suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the diamond-shaped line shall be 2 mm. Where the package dimensions require this, the size / line thickness can be reduced so that the mark is clearly visible. Where dimensions cannot be defined, all features shall be in appropriate proportion to those illustrated.</p>
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#### **4.4 Packaging and Approval Marking.**

Packed dangerous goods are not taken.


#### **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**

Hazardous materials are not stored temporarily at the port.

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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 Compounds
3. Bromates
4. Chlorates
5. Chlorites
6. Cyanides
7. Heavy metals and their salts
8. Hypochlorites
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 ships or cruise ships carrying a limited number of passengers either not more than 25 or 1 passenger per 3 meters of total length, whichever is the greater.	On deck or below deck	On deck or below deck	On deck only	On deck only	On deck or below deck
Other cruise ships where the number of passengers transported is exceeded	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(up to 12 passengers)	Passenger Ships
<b>01</b>	Above deck or below deck in closed cargo transport unit	Above deck or below deck in closed cargo transport unit
<b>02</b>	Above deck or below deck in closed cargo transport unit	On deck in closed cargo transport unit or in closed cargo transport unit under deck in accordance with 7.1.4.4.6
<b>03</b>	Above deck or below deck in closed cargo transport unit	It is forbidden, exceptif it complies with 7.1.4.4.6. units
<b>04</b>	Above deck or below deck in closed cargo transport unit in closed freight transport unit	It is forbidden, exceptif it complies with 7.1.4.4.6. units
<b>05</b>	On deck only in closed cargo transport unit	It is forbidden, exceptif it complies with 7.1.4.4.6 units

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.

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#### 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:

CLASS		1.1	1.3	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
		1.2	1.6															
Explosives	<b>1.1, 1.2, 1.5</b>	*	*	*	4	2	2	4	4	4	4	4	4	2	4	2	4	X
Explosives	<b>1.3, 1.6</b>	*	*	*	4	2	2	4	3	3	4	4	4	2	4	2	2	X
Explosives	<b>1.4</b>	*	*	*	2	1	1	2	2	2	2	2	2	X	4	2	2	X
Flammable gases	<b>2.1</b>	4	4	2	X	X	X	2	1	2	2	2	2	X	4	2	1	X
Non-toxic, non-flammable gases	<b>2.2</b>	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
Toxic gases	<b>2.3</b>	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
Flammable liquids	<b>3</b>	4	4	2	2	1	2	X	X	2	2	2	2	X	3	2	X	X
Flammable solids (including self-reactive substances and solid desensitized explosives)	<b>4.1</b>	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
Substances liable to spontaneous combustion	<b>4.2</b>	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	<b>4.3</b>	4	4	2	2	X	X	2	X	1	X	2	2	X	2	2	1	X
Oxidizing substances (agents)	<b>5.1</b>	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X
Organic peroxides	<b>5.2</b>	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X



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Toxic substances	<b>6.1</b>	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
Infectious substances	<b>6.2</b>	4	4	4	4	2	2	3	3	3	2	3	3	1	X	3	3	X
Radioactive material	<b>7</b>	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
Corrosive substances	<b>8</b>	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
Miscellaneous dangerous substances and articles	<b>9</b>	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:

<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**

There is no storage in the port.

#### **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

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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)

Dangers goods

23/5000

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 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

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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 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	
6. Consignee Safe Chemical Trading Co., Ltd 45th Street, Northumberland NE24 4RG United Kingdom Tel : 444-8446		7. Carrier (to be completed by the carrier) <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/placecard marked and labeled/placecard and are in all respects in proper condition for transport according to transport according to the applicable international and national governmental regulations			
5. This shipment is within the limitations prescribed for: (delete non-applicable) PASSENGER AND CARGO AIRCRAFT CARGO AIRCRAFT ONLY		9. Additional handling information			
10. Vessel/flight No. and date M.V. Green Voy. 123N		11. Port/place or loading Singapore		12. Port/Place of discharge Liverpool/ United Kingdom	
13. Destination Manchester/UK					
14. Shipping marks					
*Number and kind of package; description of goods		Gross mass(kg)	Net mass(kg)	Cube(m³)	
MOOV Head Lice Solution 200 ml		UN 1170, ETHANOL SOLUTION, Class 3, PG III, (24°C c.c.) LTD QTY F-E, S-D. Total: 3 Ctns (24/Ctn) In plastic Bottles : QTY : 72	20.25	14.04	0.057
Resolve Solution 25 ml		UN 1170, ETHANOL SOLUTION, Class 3, PG II, (20°C c.c.) LTD QTY F-E, S-D. Total: 1 Ctn (14/Ctn) In plastic Bottles : QTY : 14	0.544	0.31	0.001
15. Container identification No/ vehicle registration No. SPDU1234567					
16. Seal number(s) 5445974		17. Container/ vehicle size & type 40' GP	18. Tare mass (kg) 19,678	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. Pack Packman		Vehicle reg. No.		Name/status of declarant Mr. Abod Elghi /Export Asst.	
Place and date Singapore, 15 June 2011		Signature and date		Place and date Singapore, 15 June 2011	
Signature of declarant		Driver's Signature		Signature of declarant	
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* You must specify Proper Shipping Name, hazard class, UN No, packing group, (where assigned) marine pollutant and observe the marking requirements under applicable national and international governmental regulation. For the purpose of the IMDG Code see, 5.4.1.4					
For the purpose of the IMDG Code, see 5.4.2					


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

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

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

**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** Fumigation is not possible in our port facility. However, loads that have been subjected to fumigation process and the required checks are made or will be handled.


#### **6.5 Getting Sea Surveillance Service**

**6.5.1** If the following marine surveillance service is received, if there is a Maritime Surveillance Operation Authority Certificate obtained from the General Directorate of Transportation Services Regulation and Dangerous Cargo Sea Surveillance Authority will be sought. The operations will be carried out according to the "SEA SURVEILLANCE SERVICES ACTIVITIES INSTRUCTION".

- a) Surveillance services for the ship;
  - 1) Ship purchase and sale survey,
  - 2) The ship's entry-exit surcharge,
  - 3) Fuel and oil measurement survey,
  - 4) Load amount survey,
  - 5) Dismantling survey.
- b) Supervision services for loading and unloading operations;
  - 1) Ship loading, unloading and transfer survey,
  - 2) Port and tank field surveillance,
  - 3) Container stock control and stacking safety survey at the port area and coastal facility,
  - 4) Pre-installation check.

#### **6.6 Load Safety Instruction**

It is to ensure that the transported loads are transported to the targeted point at the scheduled time without damage. In this context, "LOAD SAFETY INSTRUCTIONS" will be used for loading according to technical capacity, correct positioning of the load, proper fixing and determining the selection criteria of the appropriate transport unit according to the load to be transported.

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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.

IMDG Code International Maritime Dangerous Goods Code

IMSBC Code International Maritime Solid Bulk Cargoes Code

INF Code International Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships

MARPOL 73/78 International Convention for the Prevention of Pollution from Ships, 1973/78 as amended

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

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

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

TDC Deck Cargo Secure Timber handling code 2011

GRAIN Code

**7.1.2** The Operational Division for 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 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutant or otherwise
- Receiver,
- Shipper,
- 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,
- 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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- Number,
- PSN name (Proper Shipping Name,
- Class (with lower hazards)
- Packaging Group (Class 4.1, 4.2, 4.3, 5.1, 6.1, 8, 9)
- Marine Pollutant or otherwise,
- 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 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.



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**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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## **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.

FURTHER OPERATIONS	Related Sections
<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 VHF 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.

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

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**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.

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

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

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

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

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

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- 9.1.1.5.6** Work place building and extensions are always kept clean and neat.
- 9.1.1.5.7** Proper and sufficient conditions are provided for employees' personnel cleaning.
- 9.1.1.5.8** Necessary regulations are made to store, transport, use and process dangerous chemical substances, waste and residuals properly at Harbor Structure.
- 9.1.1.5.9** Safe or less dangerous chemical substance is used instead of dangerous substance in terms of employees' health by using substitution method. 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,

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

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

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

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

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

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

## **9.1.2 Emergencies**

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


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

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

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

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

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

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

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

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


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

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

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

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

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

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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

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**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 boards 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)

#### **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 Rota Port management, we are aware of that the operations realized in our port have the potential that will lead to accidents inherently. However, we believe all accidents may be prevented. Therefore, we undertake to manage operation ideally to protect 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 ROTA PORT MANAGEMENT Quality Management Systems, as ROTA PORT, we will apply the POLICIES about

- taking high level security measures for human and environment around Port facility and procuring all resources for this purpose,
- making the risk evaluation based on quantitative 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	Almost Certain	M	S	H	H	H
Critical	Single fatality or permanent injury	Likely	Will probably occur at least once		Likely	M	M	S	H	H
Major	Medical treatment or lost time injury	Possible	Event might occur at some time		Possible	L	M	M	S	S
Minor	First aid treatment	Unlikely / Rare	Event not expected to occur or only in exceptional circumstances		Unlikely / Rare	L	L	M	M	S
Insignificant	Incident or near miss – no treatment									


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

**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 <i>Section 1</i> , 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)	<b>Yes</b>	<b>NA</b>	<b>Control</b>
	<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 <u>not</u> to be relied upon)
	<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"/>	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"/>	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"/>	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"/>	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>			
	<b>Yes</b>	<b>NA</b>	<b>If Yes, Include Additional Control Details to be Used:</b>
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 <i>BAC Authorisation</i> 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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## **10.8 10.8 Responsibilities of Personnel in Operation**

### **10.8.1 10.8.1 Operation Officer**

**10.8.1.1** 10.8.1.1 Acts according to the checklists in 10.9.

**10.8.1.2** A coordination meeting will be held at least 1 day prior to the acceptance of dangerous cargoes to the port facility and the representatives of operation, Field planning, HSE unit, TMGD and other related persons shall participate to the meeting.

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

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

**10.8.1.5** Number of equipments and cranes, teams and shifts as well as the port to be used shall be specified at this meeting.

**10.8.1.6** Organize the work order with the 2nd Cap.

**10.8.1.7** Ensure that the cargo handling is made according to the approved cargo plan With the Planning Specialist

**10.8.1.8** Every person engaged in the handling of dangerous cargoes exercises reasonable care to avoid damage to cargo transport units.

**10.8.1.9** Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.

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


**10.8.1.11** Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.

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

**10.8.1.13** During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

**10.8.1.14** 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.



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## **10.8.2 Shift Supervisor**

**10.8.2.1** Acts according to the checklists in 10.9.

**10.8.2.2** The personnel equipped with the necessary protective equipment check before the operation.

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

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

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

**10.8.2.6** Organize the work order with the 2nd Cap.


**10.8.2.7** Ensure that the cargo handling is made according to the approved cargo plan.

**10.8.2.8** Performs the necessary separation according to the classes of dangerous loads.

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

**10.8.2.10** Whilst dangerous cargoes are being handled, precautions are taken to prevent unauthorized access to handling areas.

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

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**10.8.2.12** Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.

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

**10.8.2.14** During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

**10.8.2.15** 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.

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

### **10.8.3 HSE Responsibility**

**10.8.3.1** Acts according to the checklists in 10.9.

**10.8.3.2** The worker at the operation informs about the danger of load and equips it with the necessary protective equipment.

**10.8.3.3** Environmental safety is ensured.

**10.8.3.4** Ensure that personnel are not duties in the ship's warehouse or on the ground before gas measurements are made.

**10.8.3.5** Take necessary fire precautions and control system operation.

**10.8.3.6** Controls the presence of the required warning and warning signs.

**10.8.3.7** Packaged cargoes containing Class 4.3 cargo and bulk cargo shall be prevented from being affected by rain, seawater and other factors.


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

**10.8.3.9** During handling of dangerous solid loads ,Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.

**10.8.3.10** 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.

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**10.8.3.11** 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.

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## 10.9 Safe Handling of Dangerous Goods Operation Procedure Checklist

### GENERAL


S.NO	Eylem	SEÇ	OP. SOR	VAR. AMR.
<b>YÜKÜN KABULU</b>				
1.	A coordination meeting will be held at least 1 day prior to the acceptance of dangerous cargoes to the port facility	X	X	
2.	The MSDS form about load is provided.		X	
3.	A detailed stowage plan, which identifies by class and sets out the location of all dangerous goods and marine pollutants on board, may be used in place of such a special list or manifest. (IMO FAL form 7 )		X	
4.	The Certificate of Conformity for the ship carrying the dangerous cargoes will be checked.		X	
5.	Approved cargo handling / evacuation plan requested		X	
6.	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.		X	
7.	If a decision is taken at the meeting in favor of accepting the dangerous cargo, management, operation, storage, safety and emergency response departments shall be notified and the necessary preparations and acceptance process will be commenced.		X	
8.	Number of equipments and cranes, teams and shifts and pier shall be specified.		X	
9.	The personnel who will work in the operation will be provided with information as regards the risks of the cargo and they will be equipped with the necessary protective outfit.		X	
10.	Required warnings, warning signs are provided around the area being handled.		X	
P.S. : In standard handled loads, meeting is optional. Previous meeting resolutions may apply.				

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**Katı Halde Tehlikeli Yüklerin Emniyetli Elleçlenmesi Operasyonu Prosedürü  
Kontrol Listesi**

**Katı halde tehlikeli yükler kıyı tesisimizde supalan olarak tahmil/tahliyesi yapılacaktır.**

S.NO	Eylem	SEÇ	OP. SOR	VAR. AMR.
<b>ELLEÇLEME</b>				
1.	Necessary warnings will be made in order that the trucks do not to make loading exceeding loading limit. After loading the trucks will surely top off.	X	X	X
2.	The drivers will wait at a specified location away from the vehicle during the loading and unloading of vehicles. It will be controlled if the driver has the necessary protective equipments or not.	X	X	X
3.	Controlling the work safety, control of equipments, entry and exit of outsiders, safe handling of the cargo, environmental cleaning and duly performance of these works.			X
4.	Loading and unloading in accordance with the cargo plan		X	X
5.	If the evacuation of ship is partially completed, gas measurements will be conducted prior to assignment for the evacuation of cargo in the hold of the ship.	X	X	X
6.	Canvas is laid between the ship and the port and a responsible person is assigned for cleaning the cargo scattered around.	X	X	X
7.	Dangerous areas, where handling is done in line with the risks of the dangerous cargo, are determined, regulatory authority's buildings, other facility near the facility, the types of cargo handled at these facilities and features of other cargo which are temporarily stored and handled at the facility, and the fastest and the safest access opportunities as to emergency responses will be taken into consideration.	X	X	X
8.	At the areas where solid bulk dangerous cargoes releasing poisonous or flammable gases are handled, periodic controls will be conducted for measuring poisonous or flammable gas concentrations as well as their probable dissemination and the precautions taken will be recorded	X		
9.	Water balls should be place in vicinity of areas where dangerous materials like coal, which have spontaneous combustion but not affected by water, are stored and watering works should be carried out in a way to avoid combustion. It will be considered if there is a drainage system for collecting the polluted water in the environment when the temporary storage area is announced.	X	X	X
10.	Canvas to be used for avoiding the solid bulk dangerous cargoes from falling to the sea during evacuation or while loading to the ship, will be kept between the ship and the port during the operations.	X	X	X
11.	The master who will load/unload the solid bulk dangerous cargoes will receive the detailed loading or unloading plan which includes details as to the position and quantity of the cargo in the ship from the berth operator prior to the beginning to loading or unloading process. An agreement shall be reached between the master and the berth operator as to the said loading or unloading plan.		X	X

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## **10.10 10.9 EmS (Emergency Procedures for Vessels carrying Dangerous Goods) and MFAG (Medical First Aid Guide)**

In emergencies, it is important to use IMSBC, IBC or IGC Codes for bulk cargo as well as all available IMDG Code, EMS and MFAG information.

### **10.10.1 EmS**

EmS contains procedures for the actions that can be taken if there is a fire or spill of dangerous goods.

It contains general procedures applicable to an entire substance class as well as procedures specific to certain products.

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

EmS is divided into EmS for fires and EmS for spills. There will be EmS numbers for every UN number in column 15 of the Dangerous Goods List. EmS number does not have to be specified in the Dangerous Goods Declaration.

### **10.10.2 MFAG**

MFAG table numbers do not have to be stated on the Dangerous Goods Declaration.

MFAG consists of a flow chart which shows what actions should be taken, based on the situation and symptoms, when a person has been exposed to dangerous goods of some kind. However, it is important that the person has been trained to use MFAG in advance so that it will work in an emergency.

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