

# **The Regulations on the Handling of Freight Containers Containing Dangerous/ Hazardous Cargo at Paradip Port, 1986**

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## **The Regulations on the Handling of Freight Containers Containing Dangerous/ Hazardous Cargo at Paradip Port, 1986**

### **Rule**

### **THE-REGULATIONS-ON-THE-HANDLING-OF-FREIGHT-CONTAINERS- of 1986**

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649/29.5.1986-Notification No. AD/MS/39/ 86/23.5.1986No. AD/MS/39/86. - In exercise of powers conferred under Section 123, read with Section 124 of Major Port Trusts Act, 1963 (38 of 1963) Board of Trustees of Paradip Port Trust publish the enclosed regulation on handling of freight containers containing dangerous/hazardous Cargo at Paradip Port.Part-I Preliminary

#### **1. Short title.**

- These Regulations may be called as "The Regulations on the Handling of Freight Containers Containing Dangerous/Hazardous Cargo at Paradip Port, 1986."1.2Definitions. - For the purpose of these Regulations-1.2.1. "Freight Container" for dangerous cargo hereinafter called 'Container' means an article of transport equipment specially designed and constructed for the purpose of transport of dangerous goods by one or more modes of transport;Note. - Containers used for the carriage of dangerous/hazardous cargo shall be of adequate strength to resist the possible stress imposed by the conditions of the services in which they are employed and they shall be properly and regularly maintained.1.2.2. "Closed Container" means a container which can be laden only through one or more doors in the side or end walls;1.2.3. "Open to Container" means a container with the bottom, side and end walls, tub having no roof;1.2.4. "Tank Container" means container especially built for transport and distribution of liquids and gases in bulk in accordance with such conditions as may be required;1.2.5. "Platform Container" means a type of loadable platform having the same

overall external length and width as the base of series Containers and equipped with top and bottom corner fitting located as on these Containers, so that some of the same securing and lifting devices may be used;1.2.6. "Container Space" means a space occupied by one Container equivalent to TEU. One TEU measures 6.1 Mts x 2.4 Mts., This span may be occupied by a natural Container or Containers;1.2.7. "Container Parking Yard" means the Yard in which the Containers are stacked.1.2.8. "Container Handling Equipments" means the equipments used for safe handling of Containers such as Transfer Cranes, Toplift Trucks, Fork Lift Trucks or any other equipments fitted with special devices for lifting Containers;1.2.9. "Container Ship" means a ship in which the Containers are loaded either below the deck or above deck and shall also include Container oriented Ships handling Cargo in break bulk form;1.2.10. "Dangerous Cargo Shed" means a specially constructed shed used for keeping dangerous hazardous cargo;1.2.11. "I.M.O. (IMO)" means International Maritime Organisation;1.2.12. "IMO Code" means the Code of Practice Published by the International Maritime Organisation on the International Maritime Dangerous Goods;1.2.13. "Loading and Unloading" refer to the placing of a Container aboard a Ship and to its removal therefrom;1.2.14. "Packages" refer to receptacles for dangerous goods and receptacles containing dangerous/hazardous cargo;1.2.15. "Packing and unpacking" refer to the placing of packages containing dangerous/hazardous cargo into a container and their removal therefrom;1.2.16. "Stuffing and Destuffing" means filling up the containers with cargo and removal of cargo from the container;1.2.17. "Transport Tractor-Trailer" means a combination of Transport tractor with trailer coupled together permanently or temporarily designed primarily for the transportation of goods by road.1.3 Dangerous/Hazardous Cargo. - For the purpose of this regulation, the dangerous/hazardous cargo shall cover all substances classified by the International Maritime Dangerous Goods Code by the International Maritime Organisation, London.1.4 Classification of dangerous/Hazardous Goods. - For the purpose of this regulation, Dangerous/Hazardous Goods will be divided into the following classes. These classes are based on the I.M.D.G. Code classifications :-

Class 1 - Explosives

Class 2 - Gases, Compressed, Liquified or dissolve under pressure.

Class 3 - Inflammable Liquids

Class 4.1 - Inflammable Solids

Class 4.2 - Substances liable to spontaneous combustion

Class 4.3 - Substances which in contact with water emit inflammablegasses.

Class 5.1 - Oxidising Substances

Class 5.2 - Organic Peroxides

Class 6.1 - Poisonous (Toxic, substances)

Class  
6.2 - Infectious substances

Class 7 - Radio-active substances

Class  
8 - Corrosives

Class  
9 Miscellaneous dangerous substances, i.e. any other substances which experience has shown or may be shown to be of such dangerous character as to be treated as Dangerous Goods.

## **2. General acceptability of ships carrying Dangerous/Hazardous Containers into the Port.**

- 2.1. All dangerous/hazardous cargo entering the Port area must be classified, packaged, labelled and/or marked in accordance with the IMO Code and be declared by the Ship/Shipper accordingly. The container shall also be marked as such and shall be accompanied by a Packing Certificate issued by the Operating Company including the contents. 2.2 Stowage. - No ship carrying containers carrying dangerous/hazardous cargo on board shall enter the Port unless the containers are stowed and so documented according to Section 12 of IMO Code as applicable.

## **3. Restriction on entry of ships carrying certain classes and quantities of Dangerous/Hazardous Cargo.**

- 3.1. Ships carrying explosives shall be allowed only at such of anchorages or areas notified by the concerned Port Authorities except in such quantities as may be permitted to be handled inside the Port area by the Port Regulations applicable. 3.2 No cylinder containing gases compressed, liquified or dissolved under pressure shall be permitted to be brought inside the Ports unless such cylinders are permitted for import/export by the Chief Controller or Explosives. 3.3 Dangerous goods in tank containers of the following class and type of commodity shall be limited aboard any ship to such quantity as may be notified by the respective Port Authorities, in no case exceeding 50 Tonnes net contents being the total of all classes :

Class 2 ... Liquified Inflammable or Poisonous Gases

Class 3.1 ... Inflammable Liquids e.g. Carbon Disulphate

Class 4.2 ... Spontaneously Combustible liquids e.g. Aluminium Alkyls

Class 6 ... Tetramethyl Lead (Fuel Additives)

Class 6.1 ... Poisonous (Toxic) substances

Class 6.2 ... Infectious substances

Class 8 ... Corrosives

Class 9 ... Miscellaneous dangerous substances

In all such cases, handling of tank containers shall be limited to day light hours and subject to the Consignee taking delivery from the Port premises and they shall not be deposited for any length of time within the Port premises. 3.4 The Deputy Port Conservator or Officer responsible for the safety

of the Port or his authorised representative speciality nominated by him for the regulation of the dangerous/hazardous cargo in the Port shall be the sole authority to give permission for landing or loading dangerous/hazardous cargo in containers.

#### **4. Advance notification.**

- 4.1. Ships. - The Master of the Ship Owner or Agent must inform the Port Authority at least 48 hours prior to arrival of the ship of the dangerous/hazardous goods in containers aboard the ship and those to be discharged at the Port. The intention to land or on load dangerous/hazardous cargo shall be given by the Steamer Agents or Consigners/Consignees in an application made in triplicate to the Deputy Port Conservators for seeking permission at least 48 hours in advance. The application shall include a complete list of all substance with their true chemical name and IMO Code Number. One copy of each such application and its enclosure shall be given to the Deputy Port Conservator/Officer-in-charge or Terminal Container and Traffic Manager. The list shall furnish complete details including their full/technical names, quantities, mode of packaging, IMO classification, if known and other relevant data. The items included in this list shall be serially numbered for reference and follow up correspondence. Application for issue of permits for inflammable liquids including petroleum as defined in the Petroleum Act shall contain the following information. Flash Points of such liquids and whether such liquids are miscible with water or not. In addition to these documents, a copy of the ship's cargo manifest shall also be forwarded to the Deputy Port Conservator and officer-in-charge of container terminal to enable them to gather information regarding transit cargo of dangerous/hazardous goods containers carried by each ship.

4.2 Exports. - The intention to export dangerous/hazardous cargoes through containers shall be advised to the Port Authority prior to their delivery to the berth at least 48 hours in advance and permission obtained from the Deputy Port Conservator before the dangerous/ hazardous cargo to be stuffed in containers are moved into the Port.

4.3 Transit. - Some prohibitions and restrictions as applicable in respect of dangerous/hazardous cargo for loading or unloading within the Indian Ports shall be applicable for cargo in transit.

#### **5. Berthing.**

- Any container ship carrying containers containing dangerous/hazardous cargo on board shall be berthed only when permission to berth is granted by the Port Authority at the designated berth.

#### **6.**

The Port Authorities shall stack the Dangerous/Hazardous Cargo containers in either of the following : (a) Stack the containers separately in specially designated area which has been constructed for storage of dangerous/hazardous cargo and provided with fire fighting arrangements. OR (b) Stack the containers in the Parking Yard itself by providing proper segregation as per IMDG Code. (The segregation table is given in the Appendix 'A' suggested method of segregation as per IMDG or IMCO segregation Code in a containers Parking Yard with tyre-mounted Transfer Cranes is shown in the Appendix 'B'). The Port Authorities shall devise a suitable segregation plan as regards to the classification of the cargo type of handling in the

terminal.

## 7. Stuffing and destuffing containers.

- 7.1. The Port Authority shall designate container depot/container Freight Station suitable to handle dangerous/hazardous cargo. The stacking of containers shall be in accordance with para 6 above. The stuffing or destuffing operation shall commence only after obtaining clearance from the Deputy Port Conservator. The stuffing and destuffing operation shall follow strictly the IMO Guidelines for packing of dangerous/hazardous cargo in a Freight Container and shall comply with classes 12 and 13 of IMDG Code (Appendix 'C'). In case stuffing or destuffing is done in an area in the vicinity of stackyard, a minimum distance of 30 metres around shall be observed.

7.2 Before stuffing.

- 7.2.1. Containers into which dangerous cargo are to be stuffed shall be examined visually for damage and if there is evidence of material damage, the container shall not be packed. Containers shall be clean, dry and fit for use. Irrelevant dangerous cargo labels shall be removed or masked over before stuffing begins.

7.2.2. Information shall be provided by the Shipper about the hazardous properties of the dangerous cargo to be handled. The shipper shall also ensure that dangerous cargoes are stuffed, marked and labelled in accordance with the IMDG Code. Dangerous cargo shall not be handled unless packaged, marked and labelled in accordance with these regulations.

7.2.3. Dangerous cargo shall only be handled, stuffed and secured under direct and identifiable supervision of a responsible person deputed by the Consignor or the Consignee, as the case may be, who is familiar with the risks involved and know which emergency measure should be taken. He shall also ensure that any necessary protective equipment is available.

7.2.4. Smoking shall be prohibited while work is going on.

7.2.5. Suitable fire precaution measure shall be taken.

7.2.6. Packages shall be examined and any found to be damaged, leaking or sifting shall not be stuffed into a container. Packages showing evidence of staining etc., shall not be packed into a container without first determining that it is safe and acceptable to do so. Water or other matter adhering to packages shall be removed before packing into a container.

7.2.7. If cargoes are pelletized or otherwise unitized they shall be compact and secured in a manner unlikely to damage the individual packages comprising the unit load. The materials used to band the unit load together shall be compatible with the substances unitized and retain their efficiency when exposed to moisture, extremes of temperature and sunlight.

7.2.8. In case where electric power supplied is used for any equipment or machinery in the area where containers are stacked or stuffing and destuffing is carried out, the electric supply systems in the machinery shall be of a type which will not cause any spark likely to cause hazard.

7.2.9. A container intended to carry dangerous cargo under temperature control shall be inspected and operated to ensure that the machinery is in proper working order before the shipment is made. A record of the inspection shall be maintained.

7.3 Stuffing and securing. - Special care shall be taken during handling to ensure that the packages or receptacles are not damaged.

7.3.1. If a package containing dangerous cargo is damaged during handling so that the contents leak out, the immediate area shall be evacuated until the hazard potential can be assessed. The damaged packages shall not be transported.

7.3.2. No repacking shall be done within the Port premises. If leakage from dangerous cargo likely to cause any explosion, spontaneous combustion, poisoning or similar danger, personnel shall immediately be moved to a safe place and the emergency response Organisation (e.g. the fire service) shall be notified.

7.3.3. Dangerous goods shall not be stuffed in the same container with incompatible substances. Guidance of both a general

and particular nature on this matter may be found in the IMDG Code. Note. - It is also possible that in some instances, goods of the same class shall not be stuffed into the same container as they are incompatible. For example, Peroxides and Permanganates are both oxidising agents (Class 5-1). However they may intersect dangerously in the event of an accident.

7.3.4. Dangerous goods which may damage by taint, odour or contamination to other products shall not be stuffed in the same container as goods susceptible to such damage.

7.3.5. When dangerous cargo, particularly those of class 6.1 (poisons) and class 8 (corrosives) are handled consumption of any form of food or drink shall be prohibited.

7.3.6. Special packing instructions detailed on individual packages or otherwise available must be strictly observed (e.g.) Goods marked "protect from frost" shall be stowed away from the walls of the container. Goods marked "this way up" shall be packed accordingly. When dangerous goods consignment forms only part of the load of a container, it shall preferably be stuffed so as to be accessible from the doors of the container.

8.0 Marking and labelling. - 8.1. The containers shall be sealed prior to despatch. However, they shall not be locked unless specifically required and agreed to by the container operator. In such cases a key shall be readily available at all times.

8.2 Containers in which dangerous goods are stuffed shall bear IMCO. Dangerous Goods Code Class Labels Placards not less than 250mm x 250 mm in size. Except where not required by IMDG Code there shall be at least four such labels (Placard) placed externally in conspicuous places, one on each side and one on each end. Labels for the sides of the container shall be affixed in such position that they are not obscured when the container doors are opened.

8.3 The container shall also bear externally the correct technical name of each of the dangerous substances packed therein.

8.4 Additional labels as may be required by rail and road transport authorities shall be provided.

9.0 Stuffing Certificate. - Those responsible for the stuffing of the dangerous cargo into a container shall provide a "Container Stuffing Certificate" certifying that this has been properly carried out and embodying the following provisions.

9.1 That the container was clean, dry and apparently fit to receive the goods.

9.2 No incompatible goods have been stuffed in the container.

9.3 All packages have been externally inspected for damage and only dry, sound packages packed.

9.4 All packages have been properly stuffed in the container and secured and suitable securing materials used.

9.5 The container and packages are properly marked and labelled.

9.6 The dangerous cargoes in the container are those for which acceptance has been specifically obtained with the shipment in question.

9.7 The consignor of the dangerous cargoes has in each case issued a dangerous cargoes declaration as to nature of the hazard and that the cargoes are suitably packaged for transport by sea.

9.8 The Container Stuffing Certificate shall be forwarded with the container to be available at the time of loading on board ship.

9.9 The permission of the Deputy Port Conservator has been obtained for stuffing the cargo.

10.0 General advice on receipt of containers containing dangerous/ hazardous cargoes for stuffing/destuffing. - Containers containing dangerous cargo shall be destuffed with care, always bearing in mind that the cargo may have been damaged in transit. Before the doors are opened this possibility shall be borne in mind in relation to the properties of the cargo. For example, depending on the contents of the container, there may exist the possibility that leakage has caused an unsafe concentration of toxic, inflammable or explosive vapour, or to have produced an oxygen enriched (or depleted) atmosphere. If there is evidence that damage has occurred and such a condition exists, expert advice must be sought before commencing to destuff the containers.

10.1 Any container which carried dangerous cargo particularly toxic products, shall be ventilated before unpacking commences, that is, doors shall be kept open for an adequate period.

10.2 After a container containing dangerous goods has been unpacked, particular care must

be taken to ensure that no hazard remains. This may entail special cleaning, particularly if toxic spillage has occurred or is suspected. When satisfied that a container offers no hazard, the dangerous goods labels shall be removed.10.3If any container shows signs of heat it shall be removed to a safe place and fire services immediately notified. Care shall be taken to see that any fire fighting methods to be used are suitable for the cargo in question.10.4Attention is drawn to the fact that the consignee is normally obliged to return the container, after discharging clean and suitable for the transport of every kind of cargo. This applies especially when poisonous, dangerous or obnoxious cargo has been transported.

## **11. Destuffing of dangerous/hazardous cargoes.**

- 11.1. Notification of import of dangerous cargo must be given to the concerned Port Authority by the Operator prior to the arrival of the container within the Port.11.2The import cargo documents must be endorsed with a Dangerous Goods stamp by the Operator or the person responsible for preparing the documents before the container is discharged.11.3Dangerous cargo containers shall be destuffed with care, always bearing in mind that the cargo may have been damaged in transit. Before the doors are opened, this possibility shall be borne in mind in relation to the properties of the cargo. If there is evidence that such damage has occurred, expert advice must be sought before commencing destuffing of the container.11.4As cargo is destuffed and checked, it must be separated according to its class and placed in the correct storage area. Any discrepancy in respect of marks, labels or type of packaging must be reported to the Supervisor and the Operating Company shall be advised at the earliest opportunity.11.5Areas for the storage of the various classes shall be clearly defined and where possible there shall be an outside stowage provided the packaging is suitable. In any event dangerous goods shall be set apart from the general cargo within the transit shed.11.6Removal of import dangerous cargo must be effected, immediately.11.7All dangerous cargo labels shall be removed as soon as the container can be declared non-hazardous.

## **12.**

Total quantity dangerous cargo in a designated area shall not exceed five container loads.

## **13. Fire fighting.**

- 13.1. Special fire fighting provisions shall be made in the designated area where dangerous/hazardous cargo containers are kept. These shall include.13.1.1. The provision of all fire fighting equipment as required by national or local regulations in properly maintained and fully operational condition.13.1.2. The provision of clear information as to emergency routines to be followed and a regular practice of such routines.13.1.3. Good liaison between the container base and the local fire brigade. The means to call the fire service shall be readily available at all times.13.1.4. Good house keeping and cleanliness - For example, patches of oil mixed with sawdust are a potential source of ignition, heaps of rubbish can be readily ignited, piles of dunnage can assist in the rapid spread of fire, etc.13.1.5. Proper care shall be taken to minimise sources of ignition such as smoking, unprotected or ill maintained electrical installations or repair equipment.13.1.6. Proper care of machinery and with its operations, particularly where re-fuelling is concerned.13.1.7. Clear access to

fire appliances within the premises shall be maintained and a route kept clear all times to allow rapid access for emergency vehicles from outside.13.2Special equipment. - 13.2.1. Adequate and proper breathing apparatus shall be provided and men trained in its use so as to render immediate assistance should personnel be affected by noxious fumes.13.2.2. Protective clothing comprising rubber boots and gloves and apron together with oilskin shall be available for use in dealing with split material.13.2.3. Receptacles of inert material shall be available for use in minimising the spread of split liquid.13.2.4. Nothing in this section shall prevent calling upon the proper emergency services as soon as trouble arises.13.3Lighting. - 13.3.1. Wherever and whenever dangerous goods are handled or other goods handled adjacent to dangerous goods, adequate and flame proof lighting shall be provided.13.3.2. It shall be remembered that labels may appear to change colour in artificial light.

Appendix 'A'Segregation Table

The numbers in the table at pre-page are defined as follows :

IMDG Code of definition	Container base segregation
1. Away from	Not touching each other nor oversteering one with the other.
2. Separate form	3 metres (10ft) apart unless separated by fire-resistant wall.
3. Separated by complete compartment	3 metres (10ft) apart unless separated by fire-resistant wall.
4. Separated longitudinally by an intervening complete compartment	In different sections of the container base separated by roadway or other effective fire block, or at least 25 metres(80ft) apart.
X. No general segregation recommended	If in doubt refer to the IMDG Code O. The Blue Book for particular substance.

## **1. Storage space should also be selected as between outside the buildings in accordance with the following guidelines :**

1.1Commodities which the carriage by sea rules require to be stowed only on the deck of a ship should not be stored inside a building unless the building is specially equipped for such purpose.1.2Table

IMCO Description	Storage
1.4 Safety Ammunition	Inside...Lock up
1.5 Very insersitive substances	Inside...Lock up
1. Other than Safety Ammunition and class	Not to be stored except by special arrangement
1.5 Compressed Gases	
...Inflammable	Outside
...Poisonous	Outside
...Inert	Either
...Small cylinder (e.g. lighterfuel)	Inside



3.	Inflammable liquid	Outside
3.1	Low F.P. Below-18°C (CPF)	Outside
3.2	Intermediate F.P. - 18°C up to 13° (0°-73°F)	Small quantities inside
3.3	High F.P. 13°C-61°C (73°-141°F)	Either
4.1	Inflammable solids	Either
4.2	Spontaneous Combustible	Outside (keep dry)
4.3	Emit inflammable Gases in contact with water	Outside (keep dry)
5.1	Oxidising Substances	Large quantities outside Small quantities (less than 2 Tons)
5.2	Organic peroxides	Outside (may need to be kept cool)
6.1	Poisons (Toxic)	Either (look for other hazardous and store accordingly)
6.2	Infectious	Accept only by special arrangement
7.	Radio Active	According to transport Class and A.E.A. recommendations
8.	Corrosives	Either (Considers degree of corrosive and secondary hazard)
9.	Miscellaneous (not to be construed as necessary low hazard)	According to particular hazard and quantity.

Appendix 'B'IMCO SegregationAll hazardous containers to be placed tier 1 if possible, not exceeding tier 2 for fighting purposes. General containers can still use hazardous slots in order to utilise all the blocks. All hazardous containers to have doors facing outwards. Port fire and Port Safety Officers to have fire plans and segregation plans of container yard, giving fire hydrant positions. These officers must also know the hazardous containers and contents in the yard at any one time. It would also be convenient if these officials had a slot board (wood will do) with 'T' cards carrying cargo information, cards could also be marked with the type of equipment needed to deal with an accident.

Appendix 'C'Copy of Section 12 and Extract of Section 13 of International Maritime Dangerous Goods CodeSection 12 Container Traffic -12.1.1. The recommendations of this text apply to containers in which packages of dangerous goods are loaded.12.1.2. In container traffic a number of small packages is enclosed for transit in a large box fitted with door and lifting points. The size and construction of the container may vary with the trade in which it is employed. Many containers are the demountable bodies of road or rail vehicles.12.1.3. Containers used for the carriage of dangerous goods should be of adequate strength to resist the possible stresses imposed by the conditions of the services in which they are employed.12.1.4. Dry dangerous goods in bulk may be carried in containers specially approved for this purpose by the competent authorities.12.2Permitted shipments. -12.2.1. Dangerous goods should only be transported in containers when they are packed as recommended in this Code except as provided in Section 12.1.4.12.2.2. Containers in which dangerous goods are loaded should not be transported on board passenger vessels unless such goods are specifically permitted by this Code to be so transported.12.2.3. A dangerous substance should not be stowed in the same container with any other substance with which it is deemed incompatible by this code unless the requirement for segregating those substances is not more stringent than

"away from" (as defined in Section 15.8) and such segregation within the container can be assured during transport.12.3Container certification. -12.3.1. The requirements set out in Section 9 of the General Introduction to this Code with respect to the documentation of packaged dangerous goods should be met.12.3.2. Containers in which dangerous goods are loaded should be examined externally for damage signs of leakage or shifting of contents. Any container found to be damaged, leaking shifting should not be accepted for shipment until repairs have been effected and/or damaged for receptacles removed.12.4Marking and labelling. -12.4.1. Containers in which dangerous goods are loaded should bear labels as specified for each class in this Code, affixed on the outside, in a conspicuous place.12.4.2. The special dangerous goods list or manifest required by Regulation 5(c) of Chapter VII of the convention) should indicate clearly those containers in which dangerous goods are loaded and their location in the ship. The total quantity of each dangerous substance, in addition to the description as required under the above Regulation, should also be shown in the list or manifest.12.4.3. Individual packages loaded in a container exempt from the labelling requirement but the use of dangerous goods labels on such packages is recommended in case they need to be quickly identified in an emergency.12.5Stowage of containers. -12.5.1. Containers in which dangerous goods are loaded should generally be carried and segregated in accordance with the stowage requirements laid down in this Code for such goods e.g. if dangerous goods which are required to be stowed on deck are carried in a container, then that container must also be stowed on deck.12.5.2. Containers in which dangerous goods are loaded should also be generally segregated in accordance with this Code. In those cases where such segregation is not possible by virtue of the construction of ship (e.g. where are no intervening bulkheads on a container deck) alternative segregation arrangements may be accepted provided the competent authority is satisfied that an equivalent degree of safety is thereby assured.12.5.3. Package of dangerous substances and any other goods within the containers should be adequately braced and secured for the voyage. The packages should be loaded in such a way that there will be a minimum likelihood of damage to fittings during transportation. Such fitting on package should be adequately protected.12.5.4. Containers equipped with refrigerating or heating equipment, and which give rise to toxic and/or inflammable hazard should be stowed on deck, they may be stowed and operated under deck provided that adequate ventilation and other safety precautions, to the satisfaction of the competent authority, are observed.

### **13. Portable Tanks -**

13.1Applicability and definitions. -13.1.1. Applicability. -13.1.1.1. The recommendations of this section apply to portable tanks (as defined in 13.2.1.1.) fitted with pressure relief devices, intended for the carriage of dangerous liquids.13.1.1.2. Attention is drawn to the fact that no provisions have been included in respect of any additional fire-fighting and protection measures or other special equipment which may be necessary on ships carrying portable tanks.13.1.1.3. Portable tanks of types of that than those covered by this section may be considered for the carriage of dangerous liquids under special conditions to be prescribed by the competent authority.13.1.1.4. Where exceptional hazards exist for an individual substance, additional requirements may be specified by the competent authority.13.1.2. For the purpose of this section a portable tank means a tank having a capacity of 450 litres (100 gallons) or above for the transport bulk liquids with a vapour pressure of less than 3kp/cm<sup>2</sup> - Absolute - (43 psig) at a temperature of 50°C (122°F). The tank should not be

permanently secured on board the ship and its contents should not be loaded or discharged while the tank remains on board. The loaded tank should be capable of being lifted on and off the ship.13.1.2.2. Maximum allowable working pressure is the maximum guage pressure permissible at the top of a tank in its operating position. This pressure is based on calculations for every element to vessel using nominal thickness exclusive of -(a)allowances for corrosion, and(b)thickness required for loadings other than pressure.13.1.2.3. Start-to-discharge pressure is the value of static pressure below which no bubbling occurs when a pressure relief value is tested by means of air under a specified water seal on the outlet.13.1.2.4. Total containment pressure is the sum of the vapour pressure in Kp/Cm2 (psig) at a reference temperature at the liquid surface as specified by the competent authorities concerned, plus the effect on total pressure of the practical pressure contributed by the presence of air and other gases in the ullage space, the liquid expansion as determined by the bulk mean reference temperature and the effect of the solubility of air and other gases in the liquid, plus at minimum dynamic pressure of 0.35 Kp/Cm2 (5 psig). In no case should the total containment pressure be taken to be less than 1.75 Kp/Cm2 (25 psig). Where no acceptable data for solubility exists, it should be neglected.13.11Testing and inspection of portable tanks.

-13.11.1. Such tests and inspections as the competent authority may require should be carried out during construction.13.11.2. Every portable tank, and all piping, valves and other accessories thereof which are subject to the pressure of the tank contents, except pressure relief devices, should be tested by complete filling (including domes, if any) with water or other liquid having a similar density and applying a pressure of not less than 1½ times the maximum allowable working pressure. The details of the test should be as prescribed by the competent authority. While under pressure, the tank should be inspected for leakage, corroded areas, dents or other conditions which indicate weakness that might tender the tank unsafe for transportation service, and it should not be placed in or returned to service if any evidence of such unsafe condition is discovered until the tank etc. has been required and the test repeated and passed successfully.13.11.3. A tank should not be accepted for shipment unless the pressure relieving devices have been examined by a competent person in the previous six months. A visual and external examination men suffice. However, for those cargoes which tend to render the devices inoperative, the competent authority may require more frequent examination.13.11.4. Tanks and their fitting should be inspected internally and externally with sufficient frequency and with due regard to the contents carried, but in no case at intervals greater than 2½ years, under conditions prescribed by the competent authority.13.11.5. All pressure relief valves should be retested and inspected at intervals of not more than 2½ years, with due regard to the contents carried and under conditions prescribed by the competent authority.13.11.6. Tanks should be retested hydraulically at intervals of not more than five under conditions prescribed by the competent authority. Other types of retest may be permitted, exceptionally as prescribed by the competent authority.13.12Marking the portable tanks -13.12.1.

Metal identification plate. - There should be on every portable tank a rust-proof metal plate permanently attached to the tank in a place rapidly accessible for inspection. Upon the plate should be marked by stamping embossing or other means, at least the information indicated below. This plate should not be painted so as to obscure the markings thereon. Manufacture's name.....Date of Manufacture.....Tank Serial No.....Maximum Allowable Working Pressure.....kp/cm2 (psig).Test Pressure.....kp/cm2 (psig).Total water capacity.....Litres (gallons)Maximum Weight of Liquid to be carried.....(Killos/tons).Maximum Gross Weight.....Killos (tons)Control or

permit identification of competent authority.....Hydraulic test date.....Authority who witnessed the hydraulic test.....Code, rules regulations (by name or other identification) under which tank is designed.....13.12.2. Test date and markings. -13.12.2.1. The date of last hydraulic test and the witnessing authority mark should be clearly stamped on the metal identification plate specified above.13.12.2.2. The date of the last visual examination as prescribed by Section 13.11.4. should be visibly marked on the tank in a manner satisfactory to the competent authority.13.12.3. Special purpose tanks. - Special purpose tanks should be marked to indicate the substance they are permitted to carry.13.13 Certification of portable tanks. -13.13.1. A certificate from an approved inspecting agency affirming that the tank complies with the competent authority's requirements should be filed so as to be available to that authority.13.14 General handling precautions for portable tanks. -13.14.1. The following recommendations and precautions are applicable only for tanks designed and constructed according to the provisions shown in this section (e.g. tanks with pressure relief devices).13.14.2. Portable tanks should only carry liquid cargos which are specifically authorised by competent authority of the country concerned.13.14.3. It is also envisaged that in due course the entry for each individual substance in the Dangerous Goods Code will indicate whether that substance may be carried in a portable tank and what type of tank is required.13.14.4. It is also envisaged that the Dangerous Goods Code will give individual requirements for the stowage of such substance in portable tanks and will indicate any differences between their stowage and that of approved backing.13.14.5. Until such time as the amendments to the Code have been completed stowage of portable tanks should be as recommended in 13.15.13.15 Stowage of portable tanks. -13.15.1. Portable tanks should be stowed in accordance with the provisions of Section 14 of this Code except that the position of stowage should be in accordance with the following table :

IMCO Class		Passenger Ships		Cargo Ships	
On deck	Under-deck	On deck	Under-deck		
Explosives	1	*	*	*	*
Gases	2	*	*	*	*
Inflammable	3.1	Prohibited	Prohibited	Prohibited	[Prohibited] [Except under special conditions to be specified by the competent authority.]
Liquids	3.2.	[Prohibited] [Except under special conditions to be specified by the competent authority.]	Prohibited	Prohibited	[Prohibited] [Except under special conditions to be specified by the competent authority.]
	3.3.	Prohibited		Prohibited	

			[Prohibited] [Except under special conditions to be specified by the competent authority.]		[Prohibited] [If not having poisonous or similar properties shown by a secondary label.]
Inflammable Solids	4.1	*	*	*	*
Spontaneously Combustible Substances	4.2	Prohibited	Prohibited	[Prohibited] [Except under special conditions to be specified by the competent authority.]	Prohibited
Substances dangerous when wet	4.3	Prohibited	Prohibited	[Prohibited] [Under conditions to be specified by the competent authority.]	[Prohibited] [Under conditions to be specified by the competent authority.]
Oxidizing substances	5.1	Prohibited	Prohibited	[Prohibited] [Under conditions to be specified by the competent authority.]	[Prohibited] [Under conditions to be specified by the competent authority.]
Organic peroxides	5.2	Prohibited	Prohibited	[Prohibited] [Except under special conditions to be specified by the competent authority.]	[Prohibited] [Except under special conditions to be specified by the competent authority.]
Poisons	6	[Prohibited] [Except under special conditions to be specified by the competent authority.]	[Prohibited] [Except under special conditions to be specified by the competent authority.]	[Prohibited] [Under conditions to be specified by the competent authority.]	[Prohibited] [Under conditions to be specified by the competent authority.]
	7	*	*	*	*

Radioactive  
substances

Corrosives	8	Prohibited [Prohibited] [Under conditions to be specified by the competent authority.]	Prohibited [Prohibited] [Under conditions to be specified by the competent authority.]	Prohibited	Prohibited [Prohibited] [Under conditions to be specified by the competent authority.]
Misc. dangerous substances	9			Prohibited	

\* Not applicable.13.15.2. Table in 13.15.1 applies to portable tanks containing liquids only. It does not apply to such tanks containing solids (also if dispersed or wetted) gases or liquified gases.13.15.3. Where the individual entry for a substance in the Code is more destructive than the table with regard to stowage, the individual entry should apply.13.15.4. If a portable tank is to be shipped containing a liquid for which individual entry shows one or more secondary lables, due consideration should be given to all properties of that liquid and stowage should be arranged accordingly.13.15.5. Portable tanks found to be leaking or significantly damaged so as to possible affect the integrity of the tank or its lifting and securing arrangements should not be accepted for shipment.13.15.6. Portable tank having residue of loading adhering to the outside of the tank should not be accepted for shipment unless cleaned and found to be satisfactory.13.15.7. Portable tanks should not be over-stowed unless they are carried in specially designed ships and unless they are specially protected to the satisfaction of the competent authority. Due attention should be paid to Section 13.9.1.2.13.15.8. Portable tanks should not be accepted for shipment in ullage condition liable to produce an unacceptable hydraulic force due to urge within the tank.13.15.9. Empty tanks not gas free should comply with the same provisions as tanks filled with their previous product.13.16Segregation of portable tanks. - Portable tanks containing dangerous liquids should be segregated in accordance with the International Maritime Dangerous Goods Code (See Section 15).13.17Securing of portable tanks. -13.17.1. In addition to the usual securing means provided for transportation, additional securing means, satisfactory to the competent authority and the master of the vessel, may be required in order as ensure more thoroughly against significant movement of the portable tanks during the sea voyage.13.17.2. In determining the adequacy of the securing devices, the motions and accelerations of 13.2.7. should be assumed.13.17.3. Special instructions displayed on the tanks should be observed.