# TYPES OF BULK CARRIER / DRY CARGOES / ROUTES / IMSBC

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**IOLCOS HELLENIC MARITIME ENTERPRISES CO. LTD.**

# TYPE OF BULK CARRIERS

**Handysize & Handymax Bulkers**

These ships can pass through all major canals. About 25 000 – 60 000 deadweight. Carry all types of minerals, grain, fertilisers, steel products etc.) These bulkers are well suited for small ports with length and draught restrictions, or ports lacking transhipment infrastructure.

**Panamax & Post-Panamax Bulkers**

These ships can pass through the Suez Canal and Panama Canal fully laden. Their general characteristics are: About 60 000 – 110 000 deadweight. About 200 – 240 meters. Carry coal, iron ore, grain, etc.

**Capesize & ULOC Bulkers**

The general characteristics of Capesize Bulkers are : About 110 000 – 400 000 deadweight. Carry coal or iron ore. They are so large, some bulk carriers cannot pass through the Panama Canal. When fully laden, they have to round the Cape on voyages from Australia to Europe, hence the term Capesize Bulkers.

# TYPE OF BULK CARRIERS

| Type | Deadweight, ton | Draught, m | LOA, m | Beam, m | Geared (Yes/No) | Number of Holds |
|---|---|---|---|---|---|---|
| Handysize | 32,000 | 10.2 | 179.9 | 28.4 | Yes | 5 |
| Supramax | 52,000 | 12.2 | 199 | 32.2 | Yes | 5 |
| Ultramax | 62,000 | 13 | 200 | 32.24 | Yes | 5 |
| Panamax | 75,000 | 14.1 | 225 | 32.26 | No | 7 |
| Kamsarmax | 82,000 | 14.5 | 229 | 32.26 | No | 7 |
| Post-panamax | 98,000 | 14.6 | 240 | 38 | No | 7 |
| Capesize | 172,000 | 17.95 | 289 | 45 | No | 9 |
| ULOC (Valemax) | 400,000 | 23 | 362 | 65 | No | 9 |

# MAJOR & MINOR COMMODITIES

- Dry bulk commodities separated into two distinct categories the major's and the minor's commodities.

- The major bulk products comprised by iron ore, coal and grain, while the minor's commodities by steel products, forest products, Agricultural product, Bauxite & Alumina and more.

- Both major and minor dry bulk commodities present a very significant role in the dry bulk shipping sector, since affects their performance of each other (EXAMPLE):

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016* |
|---|---|---|---|---|---|---|---|---|---|
| Major Bulks | 5% | 4% | 12% | 6% | 9% | 6% | 8% | -1% | 2% |
| Minor Bulks | -2% | -12% | 13% | 7% | 2% | 5% | 1% | 1% | 0% |
| Total Dry Bulk | 2% | -4% | 12% | 6% | 6% | 6% | 5% | 0% | 1% |

# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

- **Major Commodities**

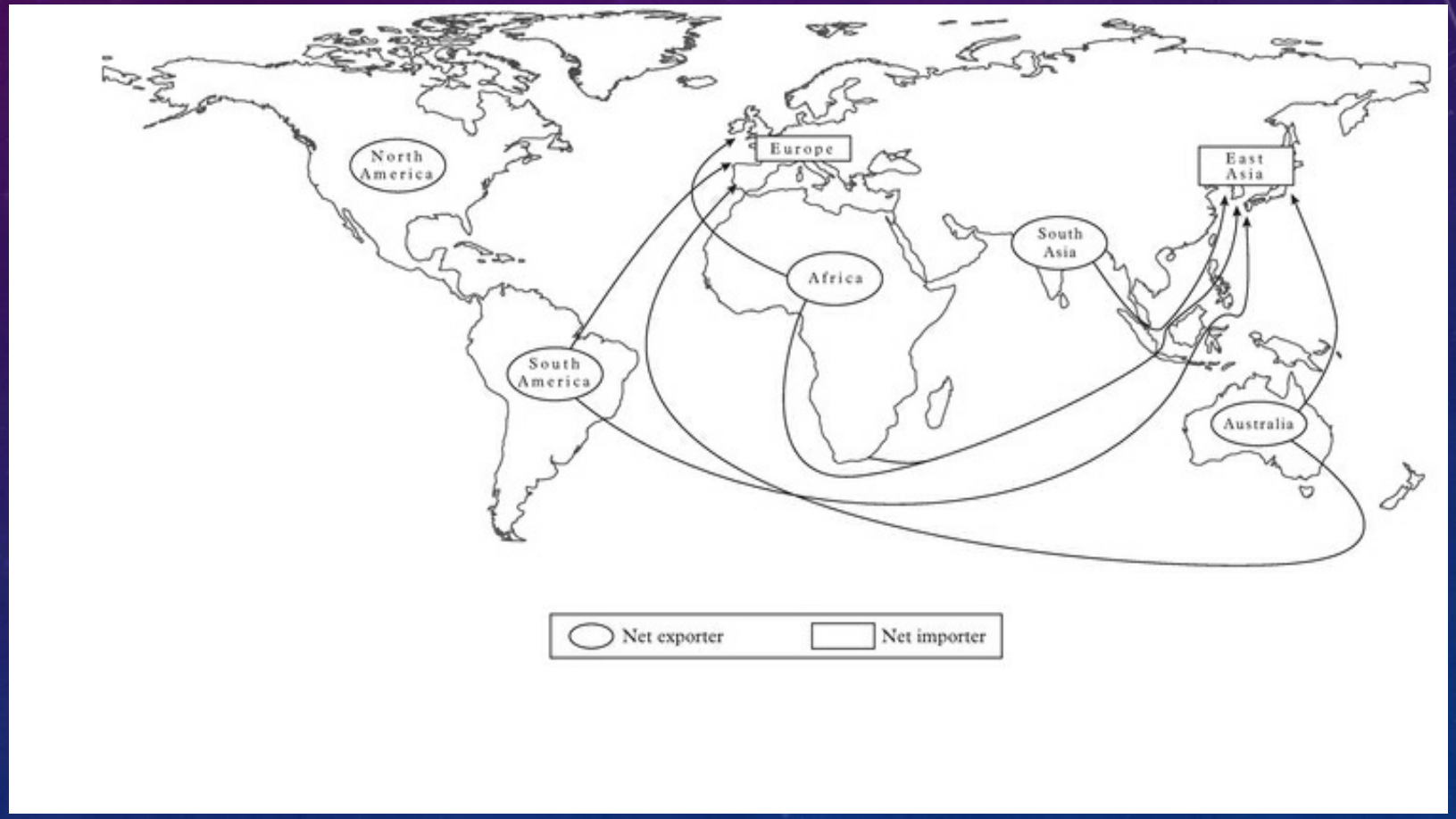
1. **Iron ore**
   - Various forms, crude, sintered or pelletized, exported mainly from Brazil, Australia, S. Africa and Canada, through the sea to the major import metallurgic hotspots (China, Japan, S. Korea, Taiwan, EU).

2. **Coal**
   - Coal can be found in two forms, steam coal and coking coal, which the first one used to provide power generation, and the second for metal production process. Indonesia and Australia together export more than 50% of the global trading quantity. Other strong exporters are (S. Africa, Colombia).

3. **Grain**
   - Agricultural product various forms, wheat, corn, soybeans, oats and others. Exporters (European Union, Russia, U.S, Canada, Australia, Ukraine, Brazil and Argentina)

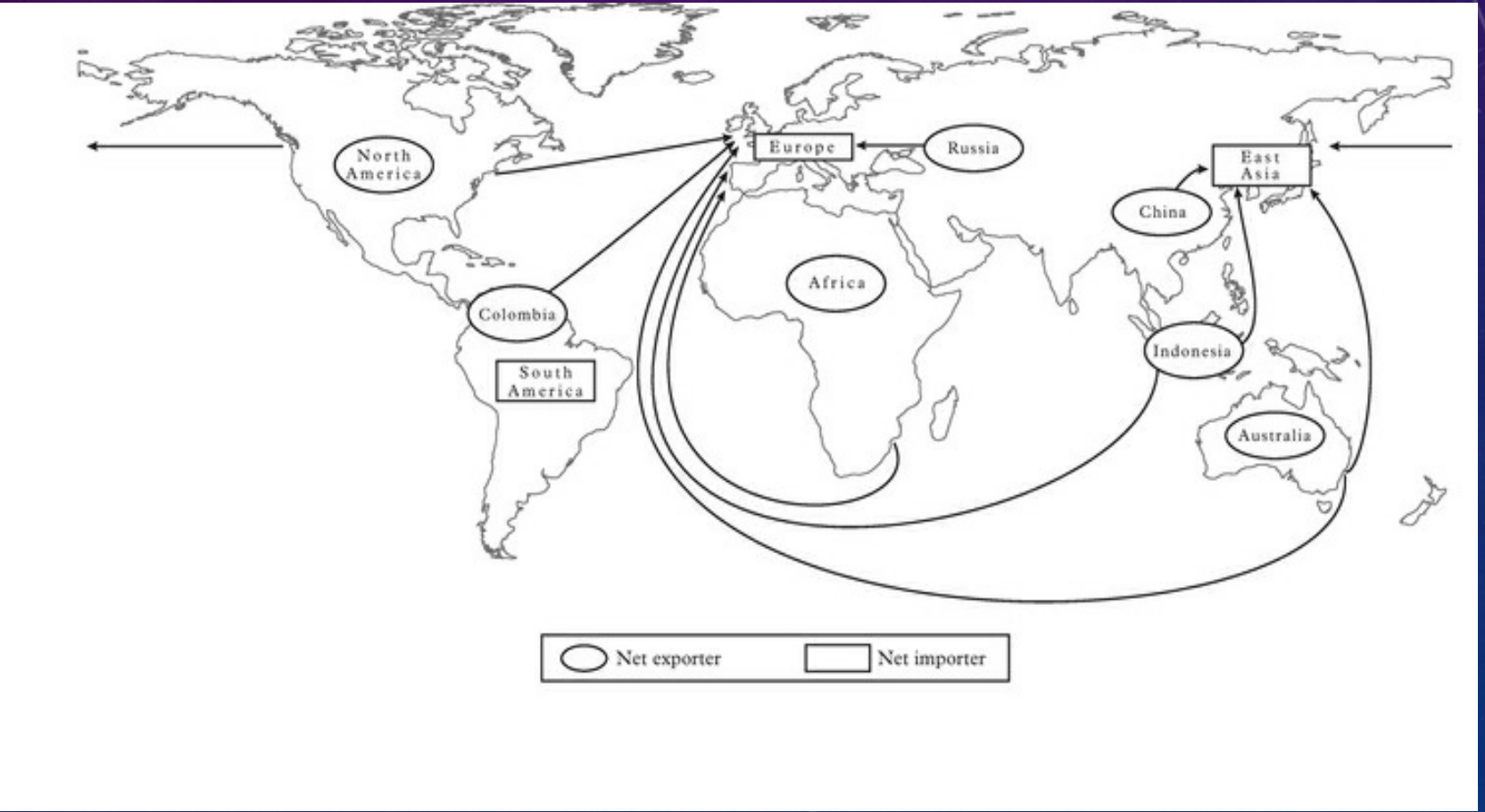
# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

**IRON ORE**



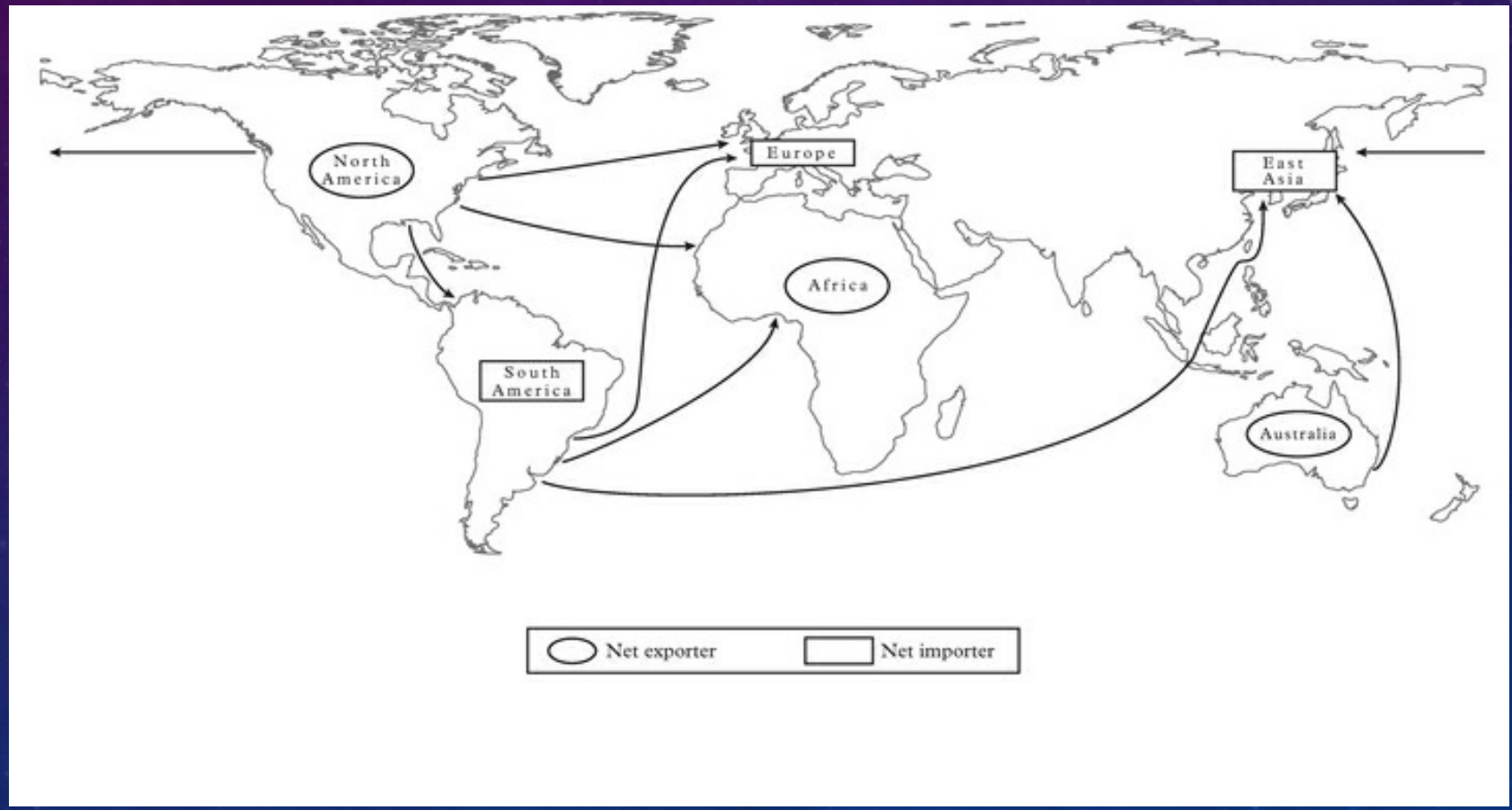
# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

**COAL**



# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

**GRAINS**



# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

- **Main Minor Commodities**
  - **Steel products (bars, billets, rods, beams, plates, coils and pipes )**

China as (world's 9th largest steel importer in 2015) and exporter has caused a significant trade problem globally with its cheaper rates of steel trade, forcing other economies like India, USA and Indonesia to impose additional import taxes in order to protect their domestic steel products.

  - **Agricultural products (sugar, tapioca, soymeal, rice and more)**

**Sugar**, Brazil is the major production country followed by Thailand, India and Guatemala, with importers, the United Kingdom, France and USA.

**Tapioca plant,** the main exporter is Thailand from the port of Kohsichang, with main importers the European Union and China.

**Soymeal and rice,** usually produced and exported from Thailand, Malaysia and Indonesia, with main importers Europe, USA.

# MAJOR & MINOR COMMODITIES &TRADE PATTERNS

- **Main Minor Commodities**
  - **Fertilizers (nitrogen, phosphate, sulphur and potash)**

**Sulphur** exported from USA, Russia, UAE, Qatar, with major importers China, S. Africa and Indonesia.

**Phosphate,** mainly exported from Africa and Russia and imported from USA, India, Brazil.

**Potash,** is exported from Canada, Russia, Germany, and Jordan while USA, Brazil and India are their significant importers.

- **Cement (bulk, clinker, bagged)**

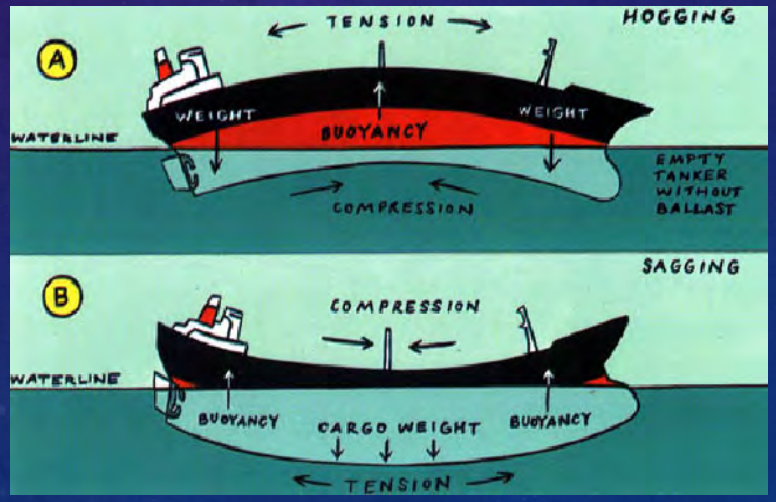
Exporting countries are China, Thailand, UAE, Turkey and Germany and Import countries USA, Algeria, Bangladesh and France.

# IMSBC CODE


The International Maritime Solid Bulk Cargoes Code (IMSBC Code), is to facilitate the safe stowage and shipment of solid bulk cargoes by providing information on the dangers associated with the shipment of certain types of solid bulk cargoes.

# IMSBC CODE

- Carrying solid bulk cargoes involves serious risks, which must be managed carefully to safeguard the crew and the ship. These risks include:
- Reduced ship stability,(and even capsizing,)due to cargo liquefaction.
- Fire or explosion due to chemical hazards.
- Damage to ship structures due to poor loading procedures.




# IMSBC CODE

- **Group A** – cargoes which may liquefy if shipped at a moisture content exceeding their Transportable Moisture Limit (TML) , Liquefaction can lead to cargo shift and even to the capsize and total loss of the ship.

  - **Example:** Iron Ore or Bauxite are prone to be liquefied, and for this reason Ship's Master shall check shipper's cargo declaration, which assure that TML test conducted in 6 months and still valid, also, moisture content test shall not exceed 7 days of the day of vessel's loading. Said test are conducting by a laboratory, which is certified by the terminal's authority or port Authorities.

# IMSBC CODE

- **Group B** – cargoes which possess a chemical hazard which could give rise to a dangerous situation on a ship.
  - **Example:** Coal loading and transportation is risky:
    - The Master shall monitor cargo temperatures during loading and, if these exceed 55°C, the master should immediately suspend loading until a proper investigation can be carried out.
    - **Coal produces carbon monoxide (CO),** which is also symptomatic of self-heating as described in the IMSBC Code. If CO concentrations of 50 ppm is detected the coal may be self-heating.
    - **Coal emitting methane,** Methane is a highly flammable gas at concentrations of between 5% and 16% in the air. Such concentrations inside cargo spaces will create a flammable atmosphere and can lead to explosion if a source of ignition is introduced.
    - Corrosive

# IMSBC CODE

- **Group C** – cargoes which are neither liable to liquefy (Group A) nor possess chemical hazards (Group B). Cargoes in this group can still be hazardous.
- **Examples of Group C cargoes, their risks and mitigation measures**
- **Iron ore and high density cargoes**

  These cargoes can be extremely dense and can overstress the tank top. Make sure that their weight is evenly distributed during loading and during the voyage so that the tank top is not overstressed, and also consider trimming the cargo. Loading rates of iron ore are normally very high and you should also consider the ship's ballasting operations and loading sequences.

- **Sand and fine particle materials**

  Fine particle materials can be abrasive. Silica dust is easily inhaled and can result in respiratory disease. You should take appropriate precautions to protect machinery and accommodation spaces from the dust of sand and fine particle cargoes, and to prevent the cargo from getting into the bilge wells.

# SHIPPER'S CARGO DECLARATION

**FORM FOR CARGO INFORMATION**
**for Solid Bulk Cargoes**

| | |
|---|---|
| BCSN | |
| Shipper | Transport document Number |
| Consignee | Carrier |
| Name/means of transport<br>Port/place of departure | Instructions or other matters |
| Port/place of destination | |
| General description of the cargo<br>(Type of material/particle size)* | Gross mass (kg/tonnes) |
| Specifications of bulk cargo, if applicable:<br>Stowage factor:<br>Angle of repose, if applicable:<br>Trimming procedures:<br>Chemical properties if potential hazard*:<br>* e.g., Class & UN No. or "MHB" | |
| Group of the cargo<br>☐ Group A & B*<br>☐ Group A*<br>☐ Group B<br>☐ Group C | * For cargoes which may liquefy (Group A and Group A & B cargoes)<br>Transportable Moisture Limit<br><br>Moisture content at shipment |
| Relevant special properties of the cargo<br>(e.g., highly soluble in water) | Additional certificate(s)*<br>☐ Certificate of moisture content and transportable moisture limit<br>☐ Weathering certificate<br>☐ Exemption certificate<br>☐ Other (specify)<br>* If required |
| DECLARATION<br>I hereby declare that the consignment is fully and accurately described and that the given test results and other specifications are correct to the best of my knowledge and belief and can be considered as representative for the cargo to be loaded. | Name/status, company/organization of signatory<br><br>Place and date<br><br>Signature on behalf of shipper |

# LOADING / UNLOADING PROCESS

- **Ships responsibility during cargo operation:**

The ship is responsible for loading the cargo at all times. The safety of the ship and those onboard is paramount. In preparing for any cargo loading operation, commercial understanding and cooperation with the loading terminal is essential to ensure maximum efficiency. The loading of the ship must be done in accordance with the ship's instructions, not those of the terminal. In the event of any unresolved differences involving safe loading or the safety of the ship after loading, in addition to advising owners agent or operating office it is recommended that the situation is discussed with the port safety services or the coastguard.

# THANKS FOR YR ATTENTION