

**PRESENTATION ON**  
**Introduction to the UN Model  
Regulations on the Transport of  
Dangerous Goods**



**GHANA EXTRACTIVE  
INDUSTRY SAFETY  
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**BY**

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# INTRODUCTION

**This provides a brief overview of the structure and requirements.**

**'Dangerous Goods'** refers to items that are potentially dangerous during transportation.

They include a wide range of solids, liquids and gases that have explosive, flammable, toxic (poisonous), infectious, radioactive, corrosive or environmentally hazardous (ecotoxic) properties.

Dangerous goods have special transport requirements to eliminate or minimise the risk of injuring people or damaging property and the environment.

# The objective of the International Maritime Dangerous Goods Regulations is to:

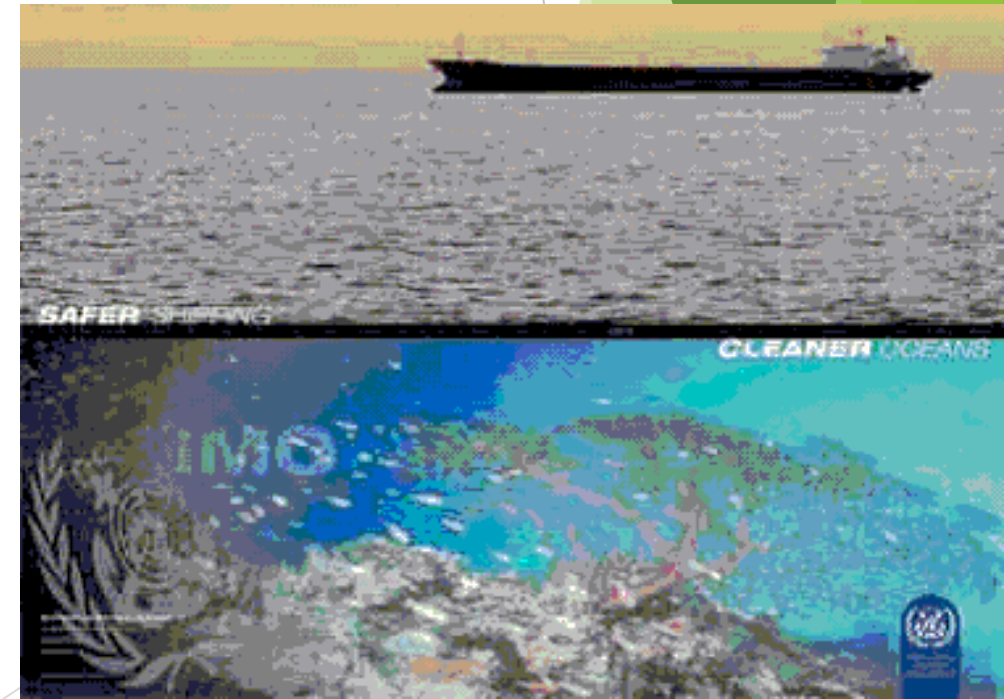
- Enhance the safe transport of dangerous goods
- Protect the marine environment
- Facilitate the free unrestricted movement of dangerous goods

# The International Legal Framework

## The International Maritime Organization (IMO)

The IMO is a United Nations specialised agency which has developed international legislation dealing with two key issues for the maritime industry:

- The safety of life at sea
- Prevention of pollution from ships



# The International Legal Framework -Cont'd

## The International Maritime Organization (IMO)

The IMO has developed international conventions to address these issues:

- The SOLAS Convention (covering safety of life at sea)

To supplement the principles laid down in the SOLAS and MARPOL Conventions, the IMO developed the International Maritime Dangerous Goods (IMDG) Code.

The IMDG code contains detailed technical specifications to enable dangerous goods to be transported safely by sea.

The IMDG Code became mandatory for adoption by SOLAS signatory states from 1st January 2004.

# Principles of the IMDG Code

**The IMDG Code is based on an internationally agreed system which:**

- Groups dangerous goods together based on the hazards they present in transport (classification).
- Contains the dangerous goods in packagings/tanks which are of appropriate strength and which will prevent the goods escaping.
- Uses hazard warning labels and other identifying marks to identify dangerous goods in transport.
- Requires standard documentation to be provided when dangerous goods are being transported.
- Lays down principles for ensuring that dangerous goods which will react dangerously together are kept apart.
- Lays down principles for where to place dangerous goods on board ship to ensure safe transport.
- Provides emergency response advice for dangerous goods involved in a fire or spillage on board ship.

# Principles of the IMDG Code - Cont'd

## Updating the IMDG Code

The IMDG Code is evolving and is updated every two years to take account of:

- New dangerous goods which have to be included.
- New technology and methods of working with or handling dangerous goods.
- Safety concerns which arise as a result of experience.

# Layout of the IMDG Code and Regulations

**Volume 1** (Parts 1-2 & 4-7 of the Code) comprises:

**Part 1** General provisions, definitions and training

**Part 2** Classification

**Part 4** Packing and tank provisions

**Part 5** Consignment procedures

**Part 6** Provisions for the construction and testing of pressure receptacles, aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell cartridges containing liquefied flammable gas

**Part 7** Requirements concerning transport operations



# Layout of the IMDG Code

The supplement contains the following texts related to the Code:

- Emergency Response Procedures for Ships Carrying Dangerous Goods
- Medical First Aid Guide
- Reporting Procedures
- IMO/ILO/ECE Guidelines for Packing Cargo Transport Units
- Safe Use of Pesticides in Ships, Cargo Holds and CTUs
- International Code for the Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships

# IMDG Code Classification System

The purpose of the IMDG Code's classification system is:

- To distinguish between goods which are considered to be dangerous for transport and those which are not.
- To identify the dangers which are presented by dangerous goods in transport.
- To ensure that the correct measures are taken to enable these goods to be transported safely without risk to persons or property.

# IMDG Code Classification System

Dangerous goods are classified into 9 classes according to properties. The way in which different classes of dangerous goods are handled in transport will depend upon these properties and hazards, for example:

- The type of packaging that can be used.
- What classes of dangerous goods can be transported together in freight containers.
- Where the goods can be stored within the port and on the ship.

# IMDG Code Classification System

## The 9 classes:

- Class 1** Explosives
- Class 2** Gases
- Class 3** Flammable liquids
- Class 4** Flammable solids
- 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

These 9 hazard classes have been established internationally by a United Nations (UN) committee to ensure that all modes of transport (road, rail, air and sea) classify dangerous goods in the same way.

# Identification of Dangerous Goods

## Hazard labels

Each of the hazard classes are also identified by labels:



## Understanding the Dangerous Goods List (DGL)

- The DGL is presented across 2 pages of the IMDG Code and is divided into 18 columns for each individual dangerous good listed.
- Much of the information contained in the DGL is coded to make it easier to present in a table.
- The DGL is arranged in UN Number order; column 1 and column 18 contains the UN Number.
- To look up an entry, you just need the UN Number.
- However, dangerous goods can also be searched using the PSN.
- Therefore, if you do not have the UN Number but have the PSN, you can find its associated UN Number by looking at the alphabetical index at the back of Volume 2.

# Understanding the Dangerous Goods List (DGL)

## **Column 1 – UN Number**

Contains the United Nations Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods (UN List).

## **Column 2 – Proper Shipping Name (PSN)**

Contains the Proper Shipping Names in upper case characters which may be followed by additional descriptive text in lower-case characters.

## **Column 3 – Class or Division**

Contains the class and, in the case of class 1, the division and compatibility group.

## **Column 4 – Subsidiary Risk(s)**

Contains the class number(s) of any subsidiary risk(s). This column also identifies if dangerous goods are marine pollutants by showing the letter 'P':

# Understanding the Dangerous Goods List (DGL)

## **Column 5 – Packing Group**

Contains the packing group number (i.e. I, II or III) where assigned to the substance or article.

## **Column 6 – Special Provisions**

Contains a number referring to any special provision(s) indicated in chapter 3.3.

## **Column 7a – Limited Quantities**

Provides the maximum quantity per inner packaging.

## **Column 7b – Excepted Quantities**

Provides a code which can be referenced to determine the maximum quantity per inner and outer packaging.

## **Column 8 – Packing Instructions**

Contains packing instructions for the transport of substances and articles.



# Understanding the Dangerous Goods List (DGL)

## **Column 9 – Special Packing Provisions**

Contains special packing provisions.

## **Column 10 – IBC Packing Instructions**

Contains IBC instructions which indicate the type of IBC that can be used for the transport.

## **Column 11 – IBC Special Provisions**

Refers to special packing provisions applicable to the use of packing instructions bearing the code 'IBC' in 4.1.4.2.

## **Column 12 – IMO Tank Instructions**

This column is no longer used but used to apply to IMO portable tanks and road tank vehicles.

## **Column 13 – UN Tank and Bulk Container Instructions**

Contains T codes (see 4.2.5.2.6) applicable to the transport of dangerous goods in portable tanks and road tank vehicles.

# Understanding the Dangerous Goods List (DGL)

## **Column 14 – Tank Special Provisions**

Contains TP notes (see 4.2.5.3) applicable to the transport of dangerous goods in portable tanks and road tank vehicles.

## **Column 15 – EmS**

Refers to the relevant emergency schedules for FIRE and SPILLAGE in 'The EmS Guide – Emergency Response Procedures for Ships Carrying Dangerous Goods'.

## **Column 16 – Stowage and Segregation**

Contains the stowage and segregation provisions as prescribed in part 7.

## **Column 17 – Properties and Observations**

Contains properties and observations on the dangerous goods listed.

## **Column 18 – UN Number**

Contains the United Nations Number for ease of reference across both pages of the printed book.

# Training Requirements

In the 2002 edition of the IMDG Code, training was introduced for the first time.

The IMO Member Governments recognised that the safe transport of dangerous goods by sea is dependent upon the appreciation, by all persons involved, of the risks involved and on a detailed understanding of the IMDG Code requirements.

The training requirements became mandatory with Amendment 34-08.



# Training Requirements

These training requirements highlight the need for all shore-based personnel involved in the shipment of dangerous goods to receive training commensurate with their responsibilities. The IMDG Code defines shore-based personnel as those who:

- classify dangerous goods
- pack dangerous goods
- mark, label or placard dangerous goods
- load/ unload CTUS
- prepare transport documents for dangerous goods
- offer dangerous goods for transport
- accept dangerous goods for transport
- handle dangerous goods in transport
- prepare dangerous goods loading/stowage plans
- load/unload dangerous goods into/ from ships
- carry dangerous goods in transport
- enforce, survey or inspect for compliance with applicable rules and regulations

**THANK YOU FOR LISTENING**  
**ANY QUESTION ?**

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