

Appendix 2

International Codes and Guidelines Relating to The Carriage of Dangerous Goods

Under IMO rules and recommendations a distinction is made between dangerous goods in packaged form, in solid form in bulk, and liquid form in bulk. The latter category is divided into oil, noxious liquid substances and liquefied gases. Regulations covering the carriage of dangerous cargoes and the ships that carry these cargoes are found in the International Convention for the Safety of Life at Sea (SOLAS, 1974), as amended, and MARPOL 73/78. These conventions are supplemented by the following:

- the International Maritime Dangerous Goods Code (IMDG Code);
- the Code of Safe Practice for Solid Bulk Cargoes (BC Code);
- the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code or IBC Code) applies to ships built after June 1986;
- the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (International Gas Carrier Code or IGC Code) applies to ships built after June 1986.

EP has a computerised version of the IMDG code available as a support service through the contact details in Appendix 2.

International Maritime Dangerous Goods Code (IMDG Code)

Compliance with the IMDG Code is mandatory¹ for the carriage of packaged dangerous goods by sea by virtue of its adoption by regulation VII/3 of SOLAS. To comply with its responsibility as a contracting state to SOLAS Australia has made regulation to adopt the IMDG Code for the international and interstate transport of dangerous goods by sea through Marine Orders Part 41. The IMDG code is updated every two years in line with the UN model Regulations.

The 2006 edition is currently mandatory with the 2008 edition in transitional effect. The 2008 edition will become mandatory from the 1 January 2010.

The IMDG code sets requirements regarding the transport of dangerous goods in respect to detailed recommendations for individual substances, materials and articles (including their classification) and requirements relating to packing, labelling, stowage, segregation and handling. With the mandatory adoption of the 2008 edition on the 1st of January 2010 training for shore based personnel will become a mandatory element of compliance with the IMDG code. The code also provides a number of recommendations for good operational practice including advice on terminology, and emergency response actions.

¹ Some minor elements of the code remain recommendatory. These are detailed in section 1.1.1.5 of the IMDG code (2008 edition)

The 2008 edition of the IMDG code is divided into two volumes and a supplement.

Volume 1 (parts 1, 2 and 4-7 of the Code) contains sections on:

- General provisions, definitions, training;
- Classification;
- Packing and tank provisions;
- Consignment procedures;
- construction and testing of packagings, Intermediate Bulk Containers (IBC's), large packagings; portable tanks and road tank vehicles; and
- Transport operations

Volume 2 contains the Dangerous Goods List, presented in tabular format:

- Limited quantities requirements;
- Excepted quantities requirements;
- The Alphabetical Index; and
- Appendices.

The Supplement contains the following texts related to the IMDG Code:

- EMS Guide;
- Medical First Aid Guide;
- Reporting Procedures;
- Packing Cargo Transport Units;
- Safe Use of Pesticides;
- INF Code; and
- Relevant IMO circulars and resolutions

Sections of the IMDG code of interest to responders are:

- Requirements for written statements in the form of declarations or certificates that packages, freight containers and/or vehicles are correctly packed;
- Requirements for proper shipping names, durable markings that include the UN number, and in the case of marine pollutants the addition of "Marine Pollutant" markings;
- Requirements that each package offered for transport be clearly identified with distinctive labels or stencil marking;
- Specific requirements for segregation of incompatible cargoes;
- Special lists/manifests of dangerous goods on the vessel and location details; and
- the requirement to report incidents involving the loss or likely loss of dangerous goods as specified in SOLAS regulation VII/6 and the supplement to the IMDG code.

Code of Safe Practice for Solid Bulk Cargoes (BC Code):

Hazards associated with the shipment of solid bulk materials generally come under the following main categories:

- Structural damage due to improper distribution of the cargo, during and after loading;

- Loss or reduction of stability during the voyage, either due to a shift of cargo or to the cargo liquefying under the combined factors of vibration and motion of the vessel; and
- Chemical reaction such as spontaneous combustion, emission of toxic or explosive gases, corrosion or oxygen depletion putting the safety of the ship and/or crew at risk.
- Chemical reactions as a result of incompatible goods being stowed in an inappropriate manner.

Therefore the BC Code classifies solid materials into three major categories:

- Bulk materials that liquefy (Group A);
- Bulk materials possessing chemical hazards (Group B); and
- Bulk materials which are neither liable to liquefy nor possess chemical hazards (Group C).

It should be noted that some bulk materials may fall into both Group A and Group B. Bulk materials of group B material may be deemed to be hazardous by virtue of the fact they have been classified as a dangerous good under the IMDG Code or it has been determined that they may be Materials Hazardous in Bulk (MHB). Responders should not assume that Materials deemed to be MHB pose less of a risk than those with a UN number.

The BC Code:

- Highlights the dangers associated with the shipment of certain types of bulk cargoes
- Details segregation requirement between different class of bulk material and other materials or other packaged dangerous goods;
- Gives guidance on various procedures which should be adopted;
- Lists typical products which are shipped in bulk;
- Gives advice on their properties and how they should be handled; and
- Describes various test procedures that should be employed to determine the characteristic cargo properties.

International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code or IBC Code)

This code applies to vessels constructed after June 1986 for the carriage of noxious liquid substances in bulk. Vessels constructed prior to this date must comply with the BCH code.. Chemical tankers and other vessels under this code must be built to conform to internationally agreed design and construction standards, and with operational requirements such as:

- Efficient stripping of cargo tanks;
- Pre-washing with subsequent discharge to reception facilities;
- Vapour containment;
- Strict requirements for the discharge of tank washings at sea;
- Special fire fighting arrangements and personnel safety precautions where necessary; and;
- Recording of operational activities in log books.

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (International Gas Carrier Code or IGC Code)

By definition any chemicals that have a vapour pressure exceeding 2.8 bar at a temperature of 37.8 C must be carried under pressure, refrigerated or a combination of both so as to liquefy them. Vessels constructed under this code must be built to conform to internationally agreed design and construction standards, and with operational requirements.

Ships built after June 1986 must comply with the code and obtain certification of fitness to carry such goods.

Emergency Procedures for Ships Carrying Dangerous Goods

These procedures outline emergency actions to be used in conjunction with the IMO Medical First Aid Guide during chemical incidents. Each schedule lists:

- Special emergency equipment to be carried;
- Emergency procedures;
- Emergency actions; and
- Special remarks for specific substances.

Both Emergency Procedures (EmS) and Medical First Aid Guide (MFAG) outputs from the computerised IMDG Code are available during a chemical incident from EP at the contacts provided in Appendix 2.