

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.

EPR 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)

As a result of being adopted by regulation VII/3 of SOLAS, the IMDG code forms the basis of the mandatory requirements for the international transport of dangerous goods by sea. In regard to Australian domestic operations, Marine Orders part 41 also adopts the IMDG code as the basis of the mandatory requirements for interstate transport of dangerous goods by sea. The IMDG code is updated every two years. The 2002 edition is currently mandatory and the 2004 edition will come into mandatory effect from the 1 January 2006. It may be used concurrently with the 2002 edition up until this time to allow transition between the two editions of the code.

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. The code also provides a number of recommendations for good operational practice including advice on terminology, and emergency response actions.

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 (equivalent to the schedules in previous editions of the Code), presented in tabular format:

- limited quantities exceptions;
- the 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; and
- INF Code

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 ship naming, durable markings that include the UN number, and in the case of marine pollutants the addition of "Marine Pollutant" on the label;
- 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.

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

- bulk materials that liquefy;
- bulk materials possessing chemical hazards; and
- bulk materials which are neither liable to liquefy nor possess chemical hazards.

The BC Code:

- highlights the dangers associated with the shipment of certain types of bulk cargoes;
- 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. 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; 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 EPR at the contacts provided in Appendix 2.