

ICS 03.220.40
CCS R09



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 40163-2021

**Safety technical specification for packing dangerous goods in
containers transported by sea**

海运危险货物集装箱装箱安全技术要求

Issued on: April 30, 2021

Implemented on: November 1, 2021

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Basic requirements
4.1	Container and packaging
4.1.1	Containers
4.1.2	Packaging
4.2	Personnel
4.3	Operating environment
4.4	Loading and unloading equipment
5	Preparations before packing...
5.2.2	LCL stowage
5.3	Placement of containers
5.4	Inspection of containers
5.4.1	Inspection of the external of a container
5.4.3	Inspection of the door of a container
5.4.4	Inspection of a reefer
5.4.5	Inspection of portable tanks
5.4.6	Inspection of multiple element gas containers
5.5	Inspection of the packaging of dangerous goods
5.5.1	Package inspection
5.5.2	Pallet cargo inspection
5.5.3	Inspection of marks and marking
6	Packing operation for dangerous goods...
6.3	Securing dangerous goods in containers
6.4	Special packing requirements
6.4.1	Explosives
6.4.2	Gases
7	Requirements for sealing operation...
8	Requirements after packing...

1 Scope

GB 40163-2021 is the Chinese national standard on safety technical specification for packing dangerous goods in containers transported by sea, in the field of services and company organization. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 30 April 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2021. Classification: ICS 03.220.40, CCS R09. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the basic requirements for packing dangerous goods in containers transported by sea, the preparations before packing, the packing and sealing operation requirements, the post-packing requirements, and the recording and documentation requirements. This standard applies to the packing operation of dangerous goods containers carried by ships.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 19854 General rules of explosion-proof techniques of industrial trucks for explosive atmospheres
JT/T 812 Requirements for the filling of non-refrigerated liquefied gas tanks (UN- T50)
JT/T 813 Technical requirements for the carriage of non-refrigerated liquefied gas tanks by ship
Technical Regulations for Statutory Inspection of Containers. Maritime Safety Administration of the People's Republic of China
IMO CSC International Convention for Safe Containers 1972
IMO IMDG International Maritime Dangerous Goods Code

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 dangerous goods The goods listed in IMO IMDG have the characteristics of flammability, explosion, poison, corrosion, radiation, pollution, etc., which may cause personal injury, property damage, or environmental pollution during the transportation of ships and require special protective measures.

3.2 container A device for transporting goods and having the following features.

- a) It has durability and sufficient strength for repeated use.
- b) It is specially designed to facilitate the transport of goods in one or more modes of transport without the need for intermediate reloading.
- c) For securing and/or ease of loading and unloading, corner pieces are provided.
- d) The area enclosed by the 4 outer bottom corner fittings shall be one of the following two:
 - 1) At least 14 m² (150 square feet);
 - 2) At least 7 m² (75 square feet) if fitted with roof corner fittings.

Note 1: Containers, as defined above, include offshore containers, portable tanks, multiple element gas containers (MEGCs), and bulk containers that meet the above characteristics, but do not include vehicles and packaging.

Note 2: Rewrite the "General definition 9.2(4)" in Technical Regulations for Statutory Inspection of Containers (2017).

3.3 portable tank A tank for the transport of dangerous goods, conforming to the definition of a container, and having the following characteristics:

- a) It consists of the shell and auxiliary equipment and structural devices required for the transport of dangerous goods;
- b) It can be loaded and unloaded without dismantling structural devices;
- c) It has stable structural parts outside the shell, and can be lifted when fully loaded;
- d) It is equipped with bases, securing devices, and accessories that facilitate mechanized operation so that it can be hoisted to transport vehicles or ships.

4.1.1 Containers

4.1.1.1 The design, manufacture, inspection, test, and operation of containers, portable tanks, and multiple element gas containers (unless otherwise specified, hereinafter referred to as "containers") shall comply with the regulations of the Technical Regulations for Statutory Inspection of Containers, IMO CSC and IMO IMDG, and a valid certificate or report shall be attached.

4.1.1.2 The content and posting of the inspection mark and safety certificate or nameplate obtained after the container has passed the inspection shall meet the requirements of the Technical Regulations for Statutory Inspection of Containers, IMO CSC, and IMO IMDG. The inspection mark and inspection date of a container that has passed the periodic inspection shall be marked on or near the safety approval plate, and shall be durable, wear-resistant, corrosion-resistant, and remain clearly visible. Containers inspected in accordance with the Accredited Continuous Inspection Program (ACEP) shall be marked with the approval number of the Continuous Inspection Program on or near the safety approval plate.

4.1.1.3 Portable tanks for transporting non-refrigerated liquefied gas shall comply with the provisions of JT/T 813.

4.1.1.4 Portable tanks and multiple element gas containers shall be clearly marked on the connection parts (such as inlet pipes, discharge ports and other accessories, and stop valves) of the tank body with their purpose. Portable tanks carrying dangerous goods and multiple element gas containers carrying non-refrigerated gases shall have a nameplate at a conspicuous place that is easily inspected (usually installed at the rear end thereof), which is displayed permanently on the corrosion-resistant metal and complying with the requirements of IMO IMDG.

4.1.2 Packaging

4.1.2.1 The packaging shall be firm and in good condition; the parts in contact with the goods shall not reduce their performance due to the characteristics of the goods, and can withstand the general risks of loading, unloading, and shipping.

4.1.2.2 The packaging shall be inspected and qualified, and have the corresponding certificate of conformity and the packaging mark.

4.1.2.3 The hazard signs and markings on the packaging shall comply with the regulations of IMO IMDG.

4.2 Personnel

4.2.1 Personnel engaged in the packing and inspection of dangerous goods containers shall be familiar with or understand relevant knowledge and skills in accordance with the requirements of IMO IMDG, especially on personnel protection and emergency measures, etc.

4.2.2 An on-site inspector of container packing shall be familiar with the technical requirements of the packing operation. During the packing operation, the inspector shall be responsible for the command or monitoring of the packing site on behalf of his organization, and issue a "Container Packing Certificate".

4.2.3 When loading and securing dangerous goods, the packing personnel shall work under the direct command or supervision of the on-site inspector of container packing.

4.2.4 The packing personnel shall wear suitable protective equipment during the operation, shall clean up in time after the operation, and shall not eat or drink during the operation.

4.3 Operating environment

4.3.1 Packing shall be carried out in a well-lit or well-lit environment.

4.3.2 The packing operation shall not be carried out under lightning weather.