

ICS 13.300
CCS C66



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

GB 19455-2004

**Safety code for inspection of hazardous properties for
dangerous of civil explosives**

民用爆炸品危险货物危险特性检验安全规范

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Foreword

Clauses 5, 7 and 8 of this standard are mandatory; the remainder is recommendatory.

This standard is non-equivalent to the United Nations Recommendations on the Transport of Dangerous Goods - Model Regulations (13th revised edition) and Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria (4th revised edition). Its technical content is consistent with those regulations; editorial changes have been made to the text format in accordance with GB/T 1.1-2000.

Annex A and Annex B are normative annexes.

This standard was proposed by and is under the jurisdiction of the National Technical Committee for Standardization of Dangerous Chemicals Management (SAC/TC 251).

Drafting organisation responsible: Dangerous Goods Center Laboratory of the General Administration of Quality Supervision, Inspection and Quarantine.

Participating drafting organisations: Tianjin Entry-Exit Inspection and Quarantine Bureau,

Asia-Pacific Dangerous Goods Association, Jiangnan University.

Main drafters: Wang Libing, Huang Yong, Shang Wei, Zhang Lai, Liu Jun, Lü Gang.

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Classification: ICS 13.300, CCS C66.

1 Scope

This standard specifies the classification, requirements, tests, codes and labels, and inspection rules for the hazardous properties of civil explosives as dangerous goods.

This standard applies to the inspection of the hazardous properties of civil explosives as dangerous goods.

This standard does not apply to the inspection of the following hazards of goods:

- the hazards of military explosives;
- the hazards of explosives in the course of production;
- the hazards of unpackaged explosive substances in transport;
- hazards caused by the influence of static electricity or electromagnetic fields;
- hazards arising from improper operation or operation in breach of regulations;
- special hazards under other abnormal transport conditions.

2 Normative references

The provisions of the following documents become provisions of this standard through reference in this standard. For dated references, subsequent amendments (excluding corrigenda) or revisions do not apply to this standard; however, parties to agreements based on this standard are encouraged to investigate whether the latest editions of these documents can be used. For undated references, the latest edition applies to this standard.

GB 19458-2004 Safety code for inspection of hazardous properties of dangerous goods - General rules

United Nations Recommendations on the Transport of Dangerous Goods - Model Regulations (13th revised edition)

United Nations Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria (4th revised edition)

3 Terms and definitions

For the purposes of this standard, the terms and definitions established in GB 19458-2004 and the following apply.

3.1 Explosion

A chemical reaction or change of state in which, within an extremely short time, a large amount of energy is released, a high temperature is produced and a large volume of gas is given off, creating high pressure in the surroundings.

3.2 Explosion substance

A solid or liquid substance (or a mixture of such substances) which is in itself capable, by chemical reaction, of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.

3.3 Explosion articles

An article containing one or more explosive substances.

3.4 Mass detonation or explosion of total contents

An explosion in which all of the substance or articles explode at the same time.

3.5 Compatibility group

Among explosives, two or more substances or articles which can be safely loaded or transported together without significantly increasing the probability of an accident or, for a given quantity, without significantly increasing the magnitude of the effects of an accident, may be regarded as belonging to the same compatibility group.

4.1 Division of civil explosives

Dangerous goods are divided into 9 classes in accordance with the United Nations Recommendations on the Transport of Dangerous Goods - Model Regulations (13th revised edition). Civil explosives belong to Class 1, which is subdivided into 6 divisions; see Table 1.

Table 1 - Division of civil explosives:

Division 1.1: Substances and articles which have a mass explosion hazard.

Division 1.2: Substances or articles which have a projection hazard but not a mass explosion hazard.

Division 1.3: Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard. This division comprises substances and articles: 1) which give rise to considerable radiant heat; or 2) which burn one after another, producing minor blast or projection effects or both.

Division 1.4: Substances and articles which present no significant hazard. This division comprises substances and articles which present only a small hazard in the event of ignition or initiation during transport. The effects are largely confined to the package itself, and no projection of fragments of appreciable size or range is to be expected. An external fire will not cause mass explosion of virtually the entire contents of the package.

Division 1.5: Very insensitive substances which have a mass explosion hazard. This division comprises substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

Division 1.6: Extremely insensitive articles which do not have a mass explosion hazard. This division comprises articles which contain only extremely insensitive detonating substances and which demonstrate a negligible probability of an accident occurring or propagating.

Note: The hazard of articles of Division 1.6 is limited to the explosion of a single article.

4.2 Division of compatibility groups

According to the different characteristics of civil explosives - physico-chemical properties, explosive properties, inner and outer packaging, special hazards and so on - they are divided into 13 compatibility groups: A, B, C, D, E, F, G, H, J, K, L, N and S; see Table 2.

Table 2 - Compatibility groups (description of the substances and articles to be classified):

A: Primary explosive substance, for example an initiating explosive.

B: Article containing a primary explosive substance and not containing two or more effective protective features. Certain articles shall also be included even though they do not in themselves contain a primary explosive substance and have no explosive property, for example detonators for initiation and with safety fuse, and cap-type detonator assemblies.

C: Propellant explosive substance or other deflagrating explosive substance, or article containing such an explosive substance, for example propellants and propelling charges.

D: Secondary detonating substance or black powder, or article containing a secondary detonating substance, in each case without means of initiation and without a propelling charge; or article containing a primary explosive substance and containing two or more effective protective features.

E: Article containing a secondary detonating substance, without means of initiation, with a propelling charge (other than one containing flammable liquid, gel or hypergolic liquid).