

ICS 97.200.50



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

GB/T 6675.9-2025

**Safety of toys - Part 9: Experimental sets for chemistry and
related activities**
(English Translation)

Issued on: December 31, 2025

Implemented on: November 1, 2026

Issued by: State Administration for Market Regulation

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1 Scope

This document specifies the specific substances and mixtures that may be used in experimental sets for chemical and similar activities, as well as their maximum quantities or concentrations (where applicable), and sets forth requirements for the labeling, list of contents, instructions for use, eye protection, and equipment used for experiments for such toys.

Substances and mixtures refer to.

- Chemical substances classified as hazardous according to GB 30000 (all parts);
- Substances and mixtures not classified as hazardous according to GB 30000 (all parts), but which may impair children's health if used in excess;
- Other chemical substances and mixtures supplied with experimental sets.

This document applies to experimental sets involving chemical and similar activities, including chemistry sets, crystal growing sets, carbon dioxide generating experiment sets, and supplementary sets.

This document does not apply to combination sets, for example, combination sets of chemistry sets and crystal growing sets. See A.1 in Annex A.

Other specific chemical toys are subject to the requirements specified in GB/T 6675.13.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 531.1, Rubber vulcanized or thermoplastic - Determination of indentation hardness - Part 1. Durometer method (Shore hardness) (GB/T 531.1-2008, ISO

7619-1.2004, IDT)

GB/T 2411, Plastics and ebonite -- Determination of indentation hardness by means of a durometer (shore hardness) (GB/T 2411-2008, ISO 868.2003, IDT)

GB 6675.2, Safety of toys -- Part 2. Mechanical and physical properties (GB 6675.2-2025, ISO 8124-1.2022, MOD)

GB/T 6675.13, Safety of toys -- Part 13. Chemical toys (sets) other than experimental sets (GB 6675.13-2025, ISO 8124-11.2019, MOD)

GB 30000 (all parts), Specification for classification and labelling of chemicals

ISO 8317, Child-resistant packaging -- Requirements and testing procedures for reclosable

packages

EN 862, Packaging -- Child-resistant packaging -- Requirements and testing procedures for non-reclosable packages for non-pharmaceutical products

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

chemical toy

A toy intended for use by a specific age group, involving the direct handling of chemical substances or mixtures under adult supervision.

[Source. GB 6675.1-2025, 3.7]

3.2

experimental set

A chemical toy involving experimental and exploratory play with a specific chemical substance or mixture, conducted in strict accordance with the instructions for use, provided that the user's creative ideas do not extend beyond the prescribed usage of the product.

3.3

chemistry set

Experimental sets for chemical experiments, containing one or more chemical substances and/or mixtures, whether or not accompanied by equipment.

NOTE: This definition also applies to experimental sets involving chemical experiments in fields such as mineralogy, biology, physics, microscopy, and environmental science, provided that they contain one or more chemical substances and/or mixtures classified as hazardous goods under GB 30000 (all parts). Crystal growing sets and carbon dioxide generating experiment sets fall outside the scope of this definition.

3.4

crystal growing set

An experimental set containing one or more chemical substances for crystal growth, wherein the provided substances do not undergo any reaction with one another.

NOTE: Crystal growing sets are designed for generating crystals of various substances within an aqueous solution. These crystals may grow upon different substrates, such as stones or plaster. The crystals can be colored using various methods, for instance, by employing food coloring. The expansion characteristics associated with the crystal formation process are exempt from the requirements regarding expanding materials stipulated in GB 6675.2. This is because the expansion

is unrelated to water absorption by the crystals, and the expansion process typically extends over a prolonged period (spanning several days or weeks).

3.5

carbon dioxide generating experiment set

An experimental set primarily composed of a substance or mixture that provides carbon dioxide, and a substance or mixture that releases carbon dioxide.

NOTE 1: These substances generate carbon dioxide when mixed with water in an open system devoid of any airtight constraints or restrictions.

NOTE 2: This toy is designed for conducting and observing chemical reactions. The purpose of generating carbon dioxide is not to demonstrate speed, reaction rate, or noise.

3.6

supplementary set

Incomplete experimental apparatus intended for use with a complete set of experimental sets.

4.1.1 Substances provided in chemistry set

4.1.1.1

The chemical substances, mixtures, and indicators listed in Tables 1 and 2 may be provided for use in chemistry sets or in supplementary sets within such sets. Their quantities and concentrations shall not exceed the limits specified in Tables 1 and 2.

4.1.1.2

The quality of the chemical substances used shall meet the requirements of the described experiment. They shall not contain impurities or components that could trigger unknown or hazardous reactions.

NOTE: Information regarding the quality of chemical substances is obtained from the manufacturer.

4.1.1.3

Other coloring agents and coloring materials not listed in Table 2 may be supplied with chemistry sets only if they meet the following conditions.

- a) Does not react with the substances and mixtures contained in the toy.
- b) Does not meet the following hazard classifications.
 - Acute toxicity (classified according to GB 30000.18);
 - Skin corrosion/irritation (classified according to GB 30000.19);
 - Serious eye damage/eye irritation (classified according to GB 30000.20);