

China Has Introduced VOC Emission Requirements for Toys Under GB 6675.1-2025

China has introduced strict and mandatory VOC emission requirements for toys under the updated GB GB 6675.1-2025 standard "玩具安全 第1部分：基本规范 Safety of toys—Part 1: Basic code", effective 01 November 2026. This replaces GB 6675.1-2014 entirely.

This updated GB 6675.1-2025 standard adds requirements for the release of **Total Volatile Organic Compounds (TVOC)** and various **individual Volatile Organic Compounds (VOCs)**, with specified emission levels of formaldehyde, benzene, toluene, xylene, etc. This is the first time China's mandatory toy standard has included VOC emission requirements, making it a significant regulatory expansion.



Test Method and Other Relevant Standards

- **GB 30981.2-2025** "涂料中有害物质限量 第2部分：工业涂料 Limit of harmful substances of coatings—Part 2: Industrial coatings" effective 01 June 2026.

It replaces GB 24613-2009 "玩具用涂料中有害物质限量 Limit of harmful substances of coatings for toys".

- **GB/T 46509-2025** "玩具中挥发性有机化合物释放量的测定 Determination of the emission of volatile organic compounds in toys", effective 05 October 2025.

This is the specific test method for toys, on the release of formaldehyde, benzene, toluene, xylene, and TVOC. In brief, it describes how VOC emissions from toys are measured and provides a test method to verify the GB 6675.1-2025 VOC requirements.

It is noteworthy that in this standard:

- If there are relevant doubts or disputes, the "**Test Chamber Method (气候舱法)**" should be used for testing, with the measured VOC value used as evidence in arbitration.
- When the total volume of the test sample is less than 0.75L or the total surface area is less than 0.5dm², the test was carried out using the "**10L Sampling Bag Method (气袋法)**", without arbitration clauses.

Relations Between Various Mandatory Standards for Toy VOC:

Standard	Title	What It Controls	Relation to VOC Requirements
<u>GB 6675.1-2025</u>	玩具安全 第1部分：基本规范 Safety of toys—Part 1: Basic code	Toy-level safety requirements for Toys	Define what VOC limits toys must meet. Requires testing
<u>GB 30981.2-2025</u>	涂料中有害物质限量 第2部分：工业涂料 Limit of harmful substances of coatings—Part 2: Industrial coatings	VOC/SVOC limits in coatings (including toy coatings)	Define what VOC limits coatings must meet before being used on toys. This indicates to ensure coating formulations used on toys meet VOC content limits
<u>GB 24613-2009</u>	玩具用涂料中有害物质限量 Limit of harmful substances of coatings for toys	Obsolete as from 2026-06-01, replaced by <u>GB 30981.2-2025</u>	

Conclusions

1. A toy has to comply with [GB 6675.1-2025](#) in all cases. If a toy uses coatings, those coatings must also comply with [GB 30981.2-2025](#).
2. A coating may pass [GB 30981.2-2025](#) but still cause a toy to fail [GB 6675.1-2025](#) if emissions are high in the finished product (toy).
3. This creates a dual-compliance requirement for toys with coatings.
4. Coating suppliers must comply with [GB 30981.2-2025](#).
5. Toy manufacturers must ensure the finished toy meets [GB 6675.1-2025](#) VOC emission limits.
6. Testing labs use [GB/T 46509-2025](#) to measure emissions.

Practical Example (How Compliance Works)

For example, a toy with painted parts must satisfy:

1.	Coating formulation	Paint must meet VOC/SVOC limits under GB 30981.2-2025
2.	Finished toy emission	The assembled toy must meet VOC emission limits under GB 6675.1-2025
3.	Testing	VOC emissions are measured using GB/T 46509-2025 (bag or chamber method)

This ensures both material safety and child exposure safety.

Effective Date

Standard	Effective Date
GB 6675.1-2025	2026-11-01
GB 30981.2-2025	2026-06-01
GB/T 46509-2025	2025-10-05

References

<https://std.samr.gov.cn/gb/search/gbDetailed?id=40C4523A3FBA1115E06397BE0A0AE2D3>
<https://std.samr.gov.cn/gb/search/gbDetailed?id=36A29D07E29CD444E06397BE0A0ACC4C>
<https://std.samr.gov.cn/gb/search/gbDetailed?id=40B74A27FCEFB79E06397BE0A0AB048>

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