How China's Toy VOC Requirements Differ from US, EU and UK

New Mandatory VOC Requirements for Toys in China

China has introduced strict and mandatory VOC emission requirements for toys under the updated 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 is the first time China's mandatory toy standard has included VOC emission requirements, making it a significant regulatory expansion.

Characteristics

- Introduces **broad VOC emission requirements** as part of a comprehensive chemical‑safety expansion.
- VOCs are treated as **air‑emission hazards**, not just content hazards.
- Covers **formaldehyde, benzene, toluene, xylene, and TVOC**, plus other chemical families.
- Applies to **all toys** under the mandatory CCC framework.

Comparing VOC Requirements in Other Major Economies

In contrast with most of the China's standards, its new VOC emission requirements for toys are diverging slightly in style from the traditional toy standards internationally.

EU / UK (1) requirements

Standards

The updated EN 71 toy safety standards, which are being heavily revised for 2025/2026, continue to include and strengthen requirements for Volatile Organic Compounds (VOCs) and other chemical substances, particularly in specific, specialized parts of the standard. While the main, newly published standards in 2025/2026 (such as EN 71-1:2026 for mechanical and physical properties, EN 71-2:2020+A1:2025 for flammability) focus on their respective areas, chemical requirements are covered under other parts of the EN 71 series, as below:

Reference	Title
EN 71-15:2025	Safety of toys - Part 15: Formamide in foam toy materials (content)
EN 71-16:2025	Safety of toys - Part 16: Certain chlorinated phosphorus flame retardants (TCEP, TCPP, TDCP) in toy materials
EN 71-17:2025	Safety of toys - Part 17: Certain isothiazolinones (MIT, CIT, BIT) in aqueous toy materials
EN 71-18:2024	Safety of toys - Part 18: Phenol in aqueous (content) and polymeric (migration) toy materials
EN 71-19:2024	Safety of toys - Part 19: Migration of bisphenol A from toy materials
EN 717-1:2004	Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method (2)

Notes:

(1) UK follows EU requirements via the retained law.

(2) This European Standard specifies a chamber method with three options of test chambers for the determination of the formaldehyde emission from wood-based panels in terms of the steady-state concentration in a climate chamber under defined conditions. So this standard is also applicable to Wood Toy Material according to Appendix C of The Toy Safety Directive 2009/48/EC.

Characteristics

- VOC-like concerns appear only where a specific chemical is volatile (e.g., formamide, formaldehyde).

USA requirements:

In the US, the relevant standards are:

ASTM F963-23 'Standard Consumer Safety Specification for Toy Safety' (Last Updated: 13 Oct, 2023), incorporated by reference into federal law. It has strong coverage of: **Heavy metals** in paints and substrates, **solvents and cleanliness** in liquids, pastes, gels, etc. and general **toxicity** and **flammability** of materials.

ASTM E1333-14 'Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber'.

ASTM D6007-14 'Standard Test Method for Determining Formaldehyde Concentrations in Air from Wood Products Using a Small-Scale Chamber'.

These standards are referred to by 40 CFR Part 770—Formaldehyde Standards for Composite Wood Products.

But compared to the US, China's new VOC approach is still more explicit and more demanding.

Summary of Comparison:

Aspect	**China — GB 6675.1-2025**	**Europe — EN 71-15/16/17/18/19 EN 717-1**	**US – ASTM F963-23 ASTM E1333-14 ASTM D6007-14**
VOC Framework	**Yes — broad VOC category**	**No — substance-specific only**	ASTM F0963-23 focuses on heavy metals, solvents in liquids, and general toxicity only ASTM E1333-14 and ASTM D6007-14 provide certain requirements on the emission of formaldehyde
Emission Testing	**Required** (formaldehyde, benzene, toluene, xylene, TVOC)	**Generally no**; only formamide emission if content >200 mg/kg	
Content Limits	Yes (many chemicals)	Yes (specific chemicals only)	
TVOC	**Explicitly regulated**	**Not regulated**	
Aromatic VOCs	**Regulated**	**Not regulated**	
Regulatory Intent	Indoor-air-quality-style chemical safety	Targeted chemical restrictions	
Burden on Manufacturers	**Higher** (emission chambers, broader scope)	**Lower** (specific tests only)	

References

https://std.samr.gov.cn/gb/search/gbDetailed?id=40C4523A3FBA1115E06397BE0A0AE2D3
https://standards.cencenelec.eu/ords/f?p=205:32:::::FSP_ORG_ID,FSP_LANG_ID:6036,25&cs=15418DC6765F172ECB103EA5243FBD855
https://store.astm.org/f0963-23.html

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