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

GB/T 29289.2-2025

Replacing GB/T 29289-2012

Safety in consumer products life cycle - Part 2: Design

消费品生命周期安全 第2部分：设计

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1 Scope

This document specifies the general processes for consumer product safety design, and describes information collection, intended use analysis, risk assessment and design methods.

This document is intended to guide relevant parties in conducting consumer product safety design activities.

2 Normative References

This document does not have normative references.

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Consumer product

Product designed and produced primarily, but not exclusively, for personal use.

NOTE. it includes product assemblies, components and parts, accessories, instructions and packaging. For detailed consumer product classification, see GB/T 36431.

[source. GB/T 35248-2017, 2.2, modified]

3.2 Intended use

Use in accordance with the information provided with the product and / or system, or in the absence of such information, in accordance with commonly understood patterns of use.

[source. GB/T 20002.4-2015, 3.6, modified]

3.3 Reasonably foreseeable misuse

Use of the product and / or system other than as provided by the supply-side, resulting from readily foreseeable human behavior.

[source. GB/T 20002.4-2015, 3.7]

3.4 Hazard

Potential source of injury.

A situation in which people or property are exposed to one or multiple hazards.

[source. GB/T 20002.4-2015, 3.4, modified]

4 General Processes

The general processes for consumer product safety design are shown in Figure 1 and include the following parts.

- a) Information collection;
- b) Intended use analysis;
- c) Risk assessment;
- d) Safety design.

5 Information Collection

Information related to consumer product safety design may be collected from the following channels. The information source includes, but is not limited to.

- a) Relevant laws and regulations, including laws, administrative regulations and departmental rules;
- b) Relevant consumer product standards, including national standards, industry standards, group standards, and international and foreign standards, etc.;
- c) Relevant database information, such as recall notifications and spot check results, etc.;
- d) Simulation experiments, comparative tests, product testing, etc.;
- e) Consumer complaint information;
- f) Media reports;
- g) Industry research reports, expert opinions, etc.;
- h) Other relevant information.

6.1 Overview

Intended use analysis includes an analysis of the intended reasonable use, reasonably foreseeable misuse, and faults of a consumer product, and clarifies the correlations among the user population, consumer product characteristics, and usage environment.

6.2.1 General requirements

When designing a consumer product, an analysis of the consumer population shall be conducted, specifically including the consumer's gender, age, intelligence level, physical ability, education, risk appetite, and proficiency in using the consumer product.

6.2.2 User population categories

The intended user population of consumer products includes, but is not limited to, the following.

- a) The general population;
- b) People with special physical needs, such as the elderly, children, the disabled, and pregnant women.
- a) The pregnant women's physiological characteristics, body shape change patterns, changes in motion characteristics, and any resulting discomfort, etc.;
- b) The pregnant women's special demands for product materials, environmental sensitivity,

strength and function, etc.;

c) The pregnant women's demands for product usability;

d) Others.

6.2.7 Usage behavior

The intended reasonable use and reasonably foreseeable misuse of the consumer product should be considered on the premise of not changing the product function.

6.3 Consumer Product Characteristics

The analysis of consumer product safety characteristics may include characteristic analysis of the following: product appearance, function, performance, physical hazard, chemical hazard, biohazard, information hazard, ethical hazard and others. The classification of the above-mentioned hazard is provided in Appendix C of GB/T 22760-2020 and Appendix B of GB/T 45097.1-2024.

6.4 Usage Environment

The analysis of the usage environment of consumer products primarily involves constructing potential hazardous situations for the consumer products and conducting an analysis of the product's usage space, temperature, humidity and other factors within each hazardous situation.

7.1 Overview

Risk assessment primarily involves three steps: hazard identification, risk estimation and risk evaluation. First, identify potential hazards that may cause injury at each stage of the consumer product life cycle, such as physical hazard, chemical hazard, biohazard, information hazard and ethical hazard. Construct hazardous situations and carry out risk estimation and risk evaluation to determine the product's risk level.

7.2 Hazard Identification

Hazard identification for consumer products may be conducted in accordance with Chapter 5 of GB/T 39011-2020 and Chapter 6 of GB/T 45097.1-2024.

7.3 Risk Estimation and Risk Evaluation

Risk estimation and risk evaluation for consumer products may be conducted in accordance with Chapter 4 of GB/T 22760-2020, and Chapter 8 and Chapter 9 of GB/T 45097.2-2024.

8.1 Design Strategy