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CCS Y80

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 18584-2024

Limit of harmful substances of furniture

家具中有害物质限量

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Standardization Administration of China

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1 Scope

GB 18584-2024 is the Chinese national standard on limit of harmful substances of furniture, in the field of domestic and commercial equipment, entertainment, sport. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 25 June 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2025. Classification: ICS 97.140, CCS Y80. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the limit requirements and test result determination of hazardous substances in furniture. It defines the terms and definitions and describes the test methods. This document applies to all types of furniture products.

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 6675.4-2014, Safety of toys -- Part

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 28202 and

GB 28007 as well as the followings apply.

3.1 total volatile organic compounds; TVOC Volatile organic compounds with retention times between n-hexane and n-hexadecane are analyzed using a Tenax GC or Tenax TA sampler and a non-polar column (polarity index less than 10).

3.2 migrated hazardous elements Antimony, arsenic, barium, cadmium, chromium, lead, mercury and selenium elements measured in furniture surface coatings by prescribed test methods.

3.3 phthalates Esters (or a series of lipid substances) formed by the reaction of phthalic acid with alcohol.

3.4 polycyclic aromatic hydrocarbons; PAH Aromatic hydrocarbons containing two or more fused aromatic rings. NOTE. The rings may also have short alkyl or cycloalkyl substituents. The PAHs in this document refer to the 18 PAHs in Annex B.

3.5 decomposable aromatic amine colourants Dyes (with azo groups) that can decompose and release one or more aromatic amines that are or may be carcinogenic to humans in textiles or leather and fur products that come into direct contact with the human body.

4 Requirements and test methods

4.1 Formaldehyde, benzene, toluene, xylene and TVOC The release limits of formaldehyde, benzene, toluene, xylene and TVOC in furniture shall comply with the requirements of Table 1.

4.2 Migrated hazardous elements The limits of migrated hazardous elements in furniture shall comply with the requirements of Table 2.

5 Determination of test results

If the test result of the test item does not exceed the limit value specified in this document, the item is judged to be compliant.

Annex D

(normative) Determination of formaldehyde, benzene, toluene, xylene and TVOC in soft furniture D.1 Instruments and equipment D.1.1 Climate chamber It shall comply with the provisions of GB/T 31107. D.1.2 Sampling instruments and equipment They shall comply with the provisions of GB/T 31106. D.2 Test procedure D.2.1 Calculation of sample exposure area Calculate the sample exposure area according to the provisions of Annex F. When the sample is adjustable, calculate according to the minimum adjustable sample area. D.2.2 Preprocessing Before the test, measure and record the total area of the sample to be tested (exposed area). Pre-treat the sample to be tested. The preprocessing time is (120±2)h. The preprocessing environmental conditions are. - Temperature. (23±2)°C; -

Relative humidity. (50±10)%; - The distance between samples is not less than 300 mm. D.2.3 Preparation before the test The load rate during the test is

0.30 m2/m3 ~

0.70 m2/m

3.The standard load rate is

0.5 m2/m

3.When the sample load rate is not equal to

0.5 m2/m3, the area load rate of the sample is calculated according to formula (D.1). Background concentration of hazardous substances in the climate chamber. formaldehyde less than or equal to

0.006 mg/m3; benzene, toluene and xylene are all less than or equal to

0.005 mg/m3; TVOC less than or equal to

0.05 mg/m3. D.2.4 Test environment requirements After the preprocessing, the samples are immediately transferred to the test climate chamber. The mattress samples shall be placed on the brackets, and other products shall be placed in the middle of the chamber in normal use. The bracket material shall not absorb or release volatile organic compounds. The bracket shall not affect the air circulation in the chamber. The air volume occupied is less than 1% of the chamber volume. D.2.5 Test procedure requirements The test is carried out according to the following provisions. - Place the sample to be tested in the center of the climate chamber. Close the door. Define this time point as the initial time "±0"; - Keep the climate chamber in operation so that the airflow in the chamber circulates over all surfaces of the sample being tested. D.2.6 Determination of formaldehyde, benzene, toluene, xylene and TVOC The formaldehyde content is determined according to the method specified in ISO 16000-3. The determination of benzene, toluene, xylene and TVOC shall be carried out in accordance with the provisions of GB/T 31106.Only benzene, toluene and xylene shall be quantified separately. The concentration of all other compounds with retention times between n-hexane and n-hexadecane (including n-hexane and n-hexadecane) shall be calculated according to the response coefficient of toluene. The sum of the concentrations of all volatile organic compound components with retention times between n-hexane and n-hexadecane (including n-hexane and n-hexadecane) is the TVOC concentration. The calculation results shall be expressed to 3 decimal places. D.3 Result calculation D.3.1 Concentrations of formaldehyde, benzene, toluene, xylene and TVOC in the climate chamber under test conditions Calculate according to formula (D.2).

Annex E

(normative) Determination of formaldehyde, benzene, toluene, xylene and TVOC in wooden

furniture and other furniture E.1 Instruments and equipment E.1.1 Climate chamber It shall comply with the provisions of GB/T 31107. E.1.2 Sampling instruments and equipment They shall comply with the provisions of GB/T 31106. E.2 Test procedure E.2.1 Calculation of sample contour volume Calculate the sample contour volume according to the provisions of Annex G. When the sample is adjustable, calculate it according to the minimum volume that the sample can be adjusted to for normal use. E.2.2 Preprocessing Before testing, assembled products, foldable products, and adjustable products shall be assembled, opened, and adjusted in the manner that is most conducive to the release of hazardous substances. Generally, the entire product is pretreated. All surfaces of product components shall be exposed to the preprocessing environment. The preprocessing time is (120±2) h. The preprocessing environmental conditions are: E.2.3 Preparation before the test The volume loading rate of the climate chamber is

0.075 m3/m3 ~

0.3 m3/m

3.Select a suitable climate chamber based on the principle that the volume loading rate is closest to

0.15 m3/m

3.When the sample volume loading rate is set to 0.15, the air exchange After the sample is placed in the climate chamber for (20±0.5) h, air sampling is carried out according to the provisions of GB/T 31106.The sampling shall be completed within 1 h. E.2.5 Determination of formaldehyde, benzene, toluene, xylene and TVOC The formaldehyde content is determined according to the method specified in ISO 16000-3. The determination of benzene, toluene, xylene and TVOC shall be carried out in accordance with the provisions of GB/T 31106.Only benzene, toluene and xylene shall be quantified separately. The concentration of all other compounds with retention times between n-hexane and n-hexadecane (including n-hexane and n-hexadecane) shall be calculated according to the response coefficient of toluene. The sum of the concentrations of all volatile organic compound components with retention times between n-hexane and n-hexadecane (including n-hexane and n-hexadecane) is the TVOC concentration. The calculation results shall be expressed to 3 decimal places. E.3 Result calculation E.3.1 Concentrations of formaldehyde, benzene, toluene, xylene and TVOC in the climate chamber under test conditions Calculate according to formula (E.2).

Annex F

(normative) Measurement method of exposed area of soft furniture F.1 Measurement principles The exposed area of soft furniture specified in this document is the total surface area of the sample in contact with the ambient air. Metal and plastic parts are not included. It can be measured by direct measurement, film measurement, scanning, digital imaging,