

ICS 59.080.40

CCS Y47



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

GB 21550-2008

**The restriction of hazardous materials in polyvinyl chloride
artificial leather**

聚氯乙烯人造革有害物质限量

Issued on: March 24, 2008

Implemented on: March 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

Clause 3 of this Standard is mandatory; the rest are recommendatory. Polyvinyl chloride artificial leather is mainly used in automotive interiors, architectural decoration, soft furniture, clothing, medical equipment, home appliances decoration and other areas closely related to human life. The implementation of this Standard is conducive to limit the content of harmful substances, improve the living environment and protect human health. After 6 months since the date of implementation of this Standard, products which do not comply with this Standard shall not be sold on the market. This Standard was proposed by China Light Industry Association. This Standard shall be under the jurisdiction of National Technical Committee on Plastic Products of Standardization Administration of China. Main drafting organization of this Standard. Shanghai Yan Chang Plastic Co., Ltd. The drafting organizations of this Standard. National Plastic Products Quality Supervision and Inspection Center (Beijing), Foshan Plastic Group Co., Ltd. Ssangyong Branch. Main drafters of this Standard. Bian Zhengyin, Lu Xiaoli, Li Jietao, Yang Baohong, Shen Shihua, Zhang Huaihai. Restriction of hazardous materials in polyvinyl chloride artificial leather

1 Scope

GB 21550-2008 is the Chinese national standard on the restriction of hazardous materials in polyvinyl chloride artificial leather, in the field of textile and leather technology. 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 24 March 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 March 2009. Classification: ICS 59.080.40, CCS Y47. 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 Standard specifies the restriction, test methods, sampling and inspection rules for vinyl chloride monomer, soluble lead, soluble cadmium and other volatiles in polyvinyl chloride artificial leather. This Standard applies to polyvinyl chloride artificial leather (hereinafter referred to as artificial leather) of which takes polyvinyl chloride resin as the main raw material and is added with the appropriate additives, with or without substrate, foam or non-foaming, processed by coating, calendering, composite production process.

2 Normative references

The following standards contain the provisions which, through reference in this Standard, constitute the provisions of this Standard. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 2918-1998 Plastics -- Standard atmospheres for conditioning and testing (idt ISO 291.1997)

3 Requirements

3.1 Restriction of vinyl chloride monomer The vinyl chloride monomer content in the polyvinyl chloride layer of artificial leather shall not exceed 5 mg/kg.

3.2 Restriction of soluble heavy metals The content of soluble lead in artificial leather shall not exceed 90 mg/kg.

4 Sampling rules

4.1 In accordance with the provisions of the relevant product standards. It shall be carried

out according to 4.2 ~

4.4 of this Standard in the absence of sampling rules of relevant product standards.

4.2 One roll of samples shall be taken from each batch of products at random.

4.4 After extraction, the samples shall be sealed in a non-polyvinyl chloride plastic bag and placed in a cool place. No special treatment shall be carried out.

5 Test methods

5.1 Effectiveness Since the date of production, the test shall be carried out after 7 d storage.

5.2 Sampling The test specimen shall be cut at least 50 mm from the edge of the sample.

5.4.2.6 Deionized water

5.4.3 Specimen preparation Make the artificial leather in a flat state. Evenly extract 2 10 mm x 100 mm specimens along with the direction of width. After respectively weighing, cut it into 10 10 mm x 10 mm specimens. Respectively add 25 mL of hydrochloric acid solution (5.4.2.4). After soaking for 24 h, use deionized water to set the volume to 50 mL. Filter and test the soaking solution. Prepare the blank solution simultaneously.

5.4.5 Drawing of lead standard curve 5.4.5.1

0.1 mg/mL lead standard stock solution Weigh 0.1600 g of lead nitrate (5.4.2.2). Use hydrochloric acid solution (5.4.2.5) to dissolve. Transfer it to 1 L volumetric flask and dilute to scale. Shake it well.

0.1 mg of lead is contained in 1 mL of this solution.

5.4.6 Drawing of cadmium standard curve 5.4.6.1

0.1 mg/mL cadmium standard stock solution Weigh 0.2371 g of cadmium acetate (5.4.2.3). Use hydrochloric acid solution (5.4.2.5) to dissolve it into 1 L volumetric flask. Dilute it to scale. Shake it well.

0.1 mg of cadmium shall be contained in 1 mL of this solution.

5.4.6.2 Cadmium standard solution Respectively pipette 0 mL,

0.5 mL,

5.0 mL of cadmium standard stock solution (5.4.6.1) into 100 mL volumetric flask. Use hydrochloric acid solution (5.4.2.5) to dilute to scale. Prepare standard solutions of which the cadmium contents are 0 mg/L,

0.5 mg/L,

5.5.2 Specimen preparation and determination method

5.5.3 Calculation Calculate the contents of volatiles according to equation (2).

5.5.4 Results representation Take the arithmetic mean value of the measurement results of the three specimens to represent, 2 significant digits remained.

6 Inspection rules

6.1 The inspections on the restriction of hazardous materials specified in this Standard are type inspection items.

6.2 Under normal production conditions, the type inspection shall be carried out at least once a year.

6.3 The type inspection should be conducted in one the following cases.