

ICS 59.080.30

CCS W04



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

GB/T 19981.2-2014

Replacing GB/T 19981.2-2005

**Textiles - Professional care, drycleaning and wetcleaning of fabrics and
garments - Part 2: Procedure for testing performance when cleaning
and finishing using tetrachloroethene**

纺织品 织物和服装的专业维护、干洗和湿洗 第2部分：使用四氯乙烯干洗和整烫
时性能试验的程序

Issued on: December 31, 2014

Implemented on: August 1, 2015

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Application Scope
2 Normative References
3 Terms and Definitions
3.1 Material garment, composite or fabric
4 Reagents...
5 Apparatus...
6 Conditioning...
7 Test Specimens...
8 Procedure...
8.1 Procedure for normal materials
8.1.6 Introduce pure dry solvent at the same liquor ratio as that given in

Foreword

GB/T 19981, Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments, is divided into 4 parts. -- Part 1. Assessment of Performance after Cleaning and Finishing; -- Part 2. Procedure for Testing Performance When Cleaning and Finishing Using Tetrachloroethene; -- Part 3. Procedure for Testing Performance When Cleaning and Finishing Using Hydrocarbon Solvent; -- Part 4. Procedure for Testing Performance When Cleaning and Finishing Using Simulated Wetcleaning. This Part is the 2nd part of GB/T 19981. This Part was drafted in accordance with the rules given in GB/T 1.1-2009. This Part replaces GB/T 19981.2-2005, Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments - Part 2. Procedure for Testing Performance When Cleaning and Finishing Using Tetrachloroethene. Compared with GB/T 19981.2-2005, the main changes of this Part are as follows: -- it deletes the content of NOTE to Application Scope and incorporates it into Introduction; -- it modifies "regular material" to "normal material" in the text; -- it deletes the explanation of sorbitan mono-oleate in 4.2; -- it modifies "rotational frequency" to "drum speed" in 5.1; -- it modifies "polyester thread" to "white polyester thread" in 7.3; -- it modifies the minimum time of blow air, after drying, at ambient temperature, through the rotating load in 8.1.7; -- it modifies the vacuuming times for a light weight garment in 8.1.9; -- it adds the extract time for an angora item in 8.2. This Part was redrafted by modifying and adopting ISO 3175-2:2010, Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments - Part 2. Procedure for Testing Performance When Cleaning and Finishing Using Tetrachloroethene (English version). Compared with ISO 3175-2:2010, the main differences of this Part are as follows:

Drycleaning is a process for cleaning textiles in an organic solvent that dissolves oils and fats and disperses particulate dirt substantially without the swelling and creasing associated with washing or wet cleaning. Small quantities of water may be incorporated in the solvent with the aid of a surfactant for the purpose of obtaining better soil and stain removal. Some moisture-sensitive articles are preferably drycleaned without the addition of water to the solvent. A surfactant is often used to assist with soil removal and reduce the risk of greying, but it should be borne in mind that surfactants contain varying amounts of water in their formulations. Drycleaning is normally followed by an appropriate restorative finishing procedure. In most cases, this comprises some form of steam treatment and/or hot pressing. Properties of the textile or garment may change progressively on drycleaning and steaming and/or pressing and in some cases a single treatment can give little indication of the extent of dimensional and other changes that can arise after repeated treatments and which can affect the useful life of the article. Generally, most of the potential changes become apparent after 3 ~ 5 of the drycleaning and finishing treatments specified in this part of GB/T 19981. The properties which should be considered in an assessment for drycleanability together with the methods for their assessment are given in GB/T 19981.1, Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments - Part 1. Assessment of Performance after Cleaning and Finishing. Various solvents can be used for drycleaning, of which tetrachloroethene is the most common in many countries. For this reason, this method prescribes the use of tetrachloroethene. Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments - Part 2. Procedure for Testing Performance When Cleaning and Finishing Using Tetrachloroethene

1 Application Scope

GB/T 19981.2 is the second part of the Chinese standard on the professional care of fabrics and garments and it gives the test procedure for cleaning with tetrachloroethene, the solvent still used in most commercial dry cleaning. It is the procedure that the assessment in Part 1 is carried out after, and its whole purpose is to make the cleaning itself reproducible, because a garment cleaned in one shop and a garment cleaned in another have not had the same treatment unless the load ratio, the solvent condition, the mechanical action, the temperature, the drying and the finishing are all specified. The standard sets those: the apparatus and the machine type, the composition and the condition of the solvent bath, the load and the ballast, the duration and the mechanical action of the cleaning and the extraction, the drying conditions, and the finishing by steam pressing or tumbling, together with the number of cycles and the conditioning between them. The 2014 edition replaces GB/T 19981.2-2005.

This part of GB/T 19981 specifies drycleaning procedures for tetrachloroethene (perchloroethylene), using commercial drycleaning machines, for fabrics and garments. It comprises a procedure for normal materials and procedures for sensitive and very sensitive materials.

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/T 6529, Textiles - Standard atmospheres for Conditioning and Testing (GB/T 6529-2008, ISO 139.2005, MOD)

GB/T 19981.1, Textiles - Professional Care, Drycleaning and Wetcleaning of Fabrics and Garments - Part 1. Assessment of Performance after Cleaning and Finishing (GB/T 19981.1-2014, ISO 3175-1.2010, MOD)

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Material garment, composite or fabric

3.2 composite test specimen test specimen consisting of all component parts used in the finished item, and combined in a representative assembly process, the less effective is the drycleaning. Localized staining and stain removal are outside the scope of this Part.

8.1 Procedure for normal materials

8.1.1 The mass of the complete load, measured to $\pm 0.1\%$, shall be calculated from the cage volume, for normal materials in the proportion of $(50 \pm 2) \text{ kg/m}^3$ and for sensitive and very sensitive materials in the proportion of $(33 \pm 2) \text{ kg/m}^3$. Unless the mass of a single specimen (fabric, composite or garment) exceeds 10 % of the mass of the load, the mass of the test specimen(s) shall not exceed 10 % of the mass of the load. The remainder of the load shall consist of ballast.

8.1.2 Place the conditioned load in the machine and charge the machine with distilled tetrachloroethene (see 4.1) and sorbitan mono-oleate solution (see 4.2), containing 1 g/l of sorbitan mono-oleate so that the liquor ratio, calculated from the volume of solvent in the drum, is $(5.5 \pm 0.5) \text{ l/kg}$ of the load. Maintain the solvent at $(30 \pm 3)^\circ\text{C}$ throughout the cleaning operation.

8.1.3 Prepare a fresh emulsion by mixing, per kilogram of load, 10 ml of sorbitan mono-oleate with 30 ml of tetrachloroethene and then whilst stirring adding 20 ml of water. This corresponds to 2 % of water calculated on the mass of the load. If the mixing of the detergent with tetrachloroethene outside the machine is not permitted, a mixture of the detergent and water may be added directly into the machine. Precautions shall be taken to avoid uneven distribution of the individual components in the load. Any deviation from the procedure shall be noted in the test report. Start the machine with the filter circuit shut off,

and 2 min after the cage inlet has closed, add the emulsion slowly over a period of (30 ± 5) s to the machine between the cage and the drum below the level of the solvent.

8.1.4 Switch the machine on and allow it to run for 15 min. Do not use the filter circuit for the duration of the test.

8.1.5 Drain the solvent and centrifugally extract the solvent from the load for 2 min (including at least 1 min at full extraction speed).

8.1.6 Introduce pure dry solvent at the same liquor ratio as that given in

8.1.2 and rinse for 5 min. Drain and extract again for 3 min (including at least 2 min at full extraction speed).

8.1.7 Dry the load in the machine air for an appropriate time, preferably using an automatic solvent dryness control. After drying, blow air, at ambient temperature, through the rotating load for at least 5 min.