STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TEST FOR TEXTILES

PART 7—QUANTITATIVE ANALYSIS OF FIBRE MIXTURES

AS 2001.7.15
BINARY MIXTURES OF CERTAIN CELLULOSE FIBRES AND WOOL OR HAIR (METHOD USING SULPHURIC ACID 70 PERCENT *m*/*m*)

PREFACE

This standard is one of a series of methods for the quantitative analysis of binary and ternary fibre mixtures.

It is derived from BS 4407, Methods of Test: Quantitative Analysis of Fibre Mixtures, and is technically identical with the analogous method contained therein in Section 4.

METHOD

1 SCOPE. This standard sets out a method for the quantitative analysis of binary mixtures of certain cellulose fibres and wool or hair using 70 percent sulphuric acid as a solvent for the cellulose.

2 APPLICATION. This method is applicable, after removal of non-fibrous matter, to binary mixtures of cotton, flax, true hemp, ramie, cupro, polynosic (modal) or viscose with wool or animal hair. When the wool or animal hair content exceeds 25 percent, the method described in AS 2001.7.5 shall be used.

3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 2001 Methods of Test for Textiles
2001.7.2 Part 7—Quantitative Analysis of Fibre Mixtures—General Requirements

AS K121 Ethanol.

4 PRINCIPLE. The cellulose fibre is dissolved from a known mass of the mixture using 70 percent sulphuric acid. The residue is collected, washed, dried and weighed. Its mass, corrected if necessary, is expressed as a percentage of the dry mass of the mixture. The percentage of dry cellulose fibre is found by difference.

5 REAGENTS. The following reagents, together with those specified in AS 2001.7.2, Clause 4, are required:

(a) *Sulphuric acid*, 70 ± 2 percent (*m*/*m*). Prepare by adding carefully, while cooling, 500 mL sulphuric acid (ρ_{20} 1840 kg/m^3) to 380 mL distilled water. After cooling to 20°C, the mixture should have ρ_{20} 1620 kg/m^3.

(b) *Sulphuric acid*, 1 percent (*m*/*m*). Prepare by adding carefully 6 mL of sulphuric acid (ρ_{20} 1840 kg/m^3) to 1 L of water.

(c) *Sodium bicarbonate solution*, containing 20 g of sodium bicarbonate per litre.

(d) *Ethanol*, complying with AS K121.

6 APPARATUS. The following items of apparatus, together with those specified in AS 2001.7.2, Clause 5, are required:

(a) *Beaker*, 500 mL.

(b) *Conical flask*, 250 ml, glass-stoppered.

(c) *Apparatus* for maintaining the flask at 38 ± 1°C.

7 PROCEDURE. Follow the procedure described in AS 2001.7.2, Clause 8.3, and proceed as follows:

(a) On the specimen contained in the beaker, pour 100 mL boiling 1 percent sulphuric acid per gram of specimen. Maintain at boiling point for 10 min, stirring with a glass rod.

(b) Filter the contents of the beaker through a weighed filter crucible by means of suction.

(c) Transfer any residual fibres by washing out the beaker with water, then drain the crucible with suction.

(d) Transfer the fibres into the conical flask.

(e) Add 200 mL of 70 percent sulphuric acid, heated to a temperature of 38 ± 1°C, per gram of specimen.

(f) Insert the stopper and shake the flask. Maintain the flask at a temperature of 38 ± 1°C for 15 min, shaking it at regular intervals of approximately 5 min.

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