

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TEST FOR TEXTILES

PART 7—QUANTITATIVE ANALYSIS OF FIBRE MIXTURES

AS 2001.7.14
BINARY MIXTURES OF SILK AND WOOL OR HAIR
FIBRES (METHOD USING SULPHURIC ACID
75 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 describes a method for the quantitative analysis of binary mixtures of silk and wool or hair fibres using 75 percent sulphuric acid as a solvent for the silk.

2 APPLICATION. This method is applicable, after removal of non-fibrous matter, to binary mixtures of silk with wool or animal hair. It is not applicable to mixtures containing wild silk, e.g. tussah.

3 REFERENCED DOCUMENT. The following standard is referred to in this standard:

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

4 PRINCIPLE. The silk fibre is dissolved from a known mass of the mixture, using 75 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 silk 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, 75 ±2 percent (m/m).* Prepare by adding carefully, while cooling, 700 mL sulphuric acid (ρ_{20} 1840 kg/m³) slowly to 350 mL distilled water. After cooling to 20°C, the mixture should have ρ_{20} 1670 kg/m³.
- (b) *Sulphuric acid, dilute solution.* Add 100 mL sulphuric acid (ρ_{20} 1840 kg/m³) slowly to 1900 mL distilled water.

- (c) *Dilute ammonia solution.* Dilute 200 mL concentrated ammonia (ρ_{20} 880 kg/m³) to 1 L with water.

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

Conical flask, 250 mL, glass-stoppered.

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

- (a) To the specimen contained in the glass-stoppered conical flask, add 100 mL of 75 percent (*m/m*) sulphuric acid per gram of specimen and insert the stopper.
- (b) Shake the flask vigorously and stand it for 30 min at room temperature. Shake the flask again and stand it for 30 min. Shake it a last time and filter the contents of the flask through the weighed filter crucible.
- (c) Wash any remaining fibres from the flask with more 75 percent sulphuric acid reagent.
- (d) Wash the residue in the crucible successively with 50 mL of the dilute sulphuric acid solution, 50 mL water and 50 mL of the dilute ammonia solution. Each time ensure the fibres remain in contact with the liquid for at least 10 min before applying suction.
- (e) Finally, rinse with water, leaving the fibres in contact with the water for about 30 min.
- (f) Drain the crucible with suction, dry the crucible and residue, and cool and weigh them (see AS 2001.7.2, Clauses 8.2.4, 8.2.5 and 8.2.6).