STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**
**METHODS OF TEST FOR TEXTILES**

**PART 7—QUANTITATIVE ANALYSIS OF FIBRE MIXTURES**

# AS 2001.7.6
# BINARY MIXTURES OF VISCOSE, CUPRO OR CERTAIN TYPES OF POLYNOSIC (MODAL) AND COTTON FIBRES (METHOD USING FORMIC ACID AND ZINC CHLORIDE)

## 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 viscose, cupro or certain types of polynosic (modal) and cotton fibres using a solution of formic acid and zinc chloride as the solvent for the viscose, cupro or polynosic (modal).

**2 APPLICATION.** This method is applicable, after removal of non-fibrous matter, to binary mixtures of viscose, cupro or certain types of polynosic (modal) with cotton. If polynosic (modal) is found to be present, a preliminary test should be carried out to see whether it is soluble in the reagent under the conditions of test. For certain types of polynosic (modal) fibre which are difficult to dissolve, the procedure, modified as described in Clause 7(d), may be used.

This method is not applicable to mixtures in which the cotton has suffered extensive chemical degradation, nor when the viscose, cupro or polynosic (modal) is rendered incompletely soluble by the presence of certain dyes or finishes that cannot be removed completely by pretreatment.

**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 viscose, cupro or polynosic (modal) is dissolved from a known dry mass of the mixture, using a reagent containing formic acid and zinc chloride. The residue is collected, washed, dried and weighed. Its corrected mass is expressed as a percentage of the dry mass of the mixture. The percentage of dry viscose, cupro or polynosic (modal) is found by difference.

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

(a) *Solution*. A freshly prepared solution containing 20 g of anhydrous zinc chloride and 68 g of formic acid made up to 100 g with water (namely 20 parts by mass of zinc chloride to 76 parts by mass of 90 percent *m*/*m* formic acid).

(b) *Dilute ammonia solution*. Dilute 20 mL of concentrated ammonia solution ($\rho_{20}$ 880 kg/m$^3$) to 1 L with water.

NOTE: The use of chemically pure reagents is critical in this method.

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

(a) *Conical flask*, 250 mL, glass-stoppered.

(b) *Apparatus*, for maintaining the flask and contents at 40 ± 2°C (or 70 ± 2°C if the high temperature technique is used).

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

(a) Place 100 mL of the formic acid and zinc chloride solution per gram of specimen in the conical flask, heat it to a temperature of 40°C and add the specimen.

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