

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 2001.3.6—2005

Methods of test for textiles

**Method 3.6: Chemical tests—Determination of cuprammonium fluidity of cotton
and cellulosic man-made fibres**

RECONFIRMATION NOTICE

Technical Committee TX-020 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 6 July 2016.

The following are represented on Technical Committee TX-020:

Ag Research
Australian Wool Processors Council
AWTA Textile Testing
Council of Textile and Fashion Industries of Australia
Drycleaning Institute of Australia
National Association of Testing Authorities Australia
RMIT University
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NOTES

Australian Standard™

AS 2001.3.6—2005

Methods of test for textiles

Method 3.6: Chemical tests—Determination of cuprammonium fluidity of cotton and cellulosic man-made fibres

PREFACE

This Standard was prepared by Standards Australia Committee TX-020, Testing of Textiles to supersede AS 2001.3.6—1980.

The objective of this Standard is to provide manufacturers and testing bodies with a suitable test method for determining the cuprammonium fluidity of cellulosic fibres.

In the interest of safer laboratory practice, the use of mercury in the previous edition has been replaced with a stainless steel spring to agitate the cuprammonium hydroxide and cellulose solution during testing.

In preparation of this Standard cognisance was taken of BS 2610:1978, *Method of test for the determination of the cuprammonium fluidity of cotton and certain cellulosic man-made fibres*.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

METHOD

1 SCOPE

This Standard sets out a method for determining the cuprammonium fluidity of cotton, cupro*, modal*, viscose* or deacetylated acetate* fibre in a standard solution of cuprammonium hydroxide using an outflow viscometer.

This method applies to cotton and all cellulosic man-made fibres in all forms.

2 REFERENCED DOCUMENT

The following Standard is referred to in this Standard:

AS/NZS
2450 Textiles—Natural and man-made fibres—Generic names

3 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

* See AS/NZS 2450.

3.1 Cuprammonium fluidity (of a specimen of cellulosic man-made fibre cupro, viscose, modal or deacetylated acetate)

The kinematic fluidity of a solution consisting of the specified cuprammonium solution containing 2.0 g of man-made cellulose fibre in 100 mL of solution.

3.2 Cuprammonium fluidity (of a specimen of cotton)

The kinematic fluidity of a solution consisting of the specified cuprammonium solvent containing 0.5 g of cotton cellulose fibre in 100 mL of solution.

NOTE: For the purpose of this Standard, the specific gravity of the solvent is taken as 0.940 kg/m³.

3.3 Kinematic fluidity of a solution

The quotient resulting from the division of 100 by the kinematic viscosity when the kinematic viscosity is expressed in square millimetres per second.

4 PRINCIPLE

The rate of flow of a standard solution of the fibre in cuprammonium hydroxide solvent from a standard capillary viscometer is measured. The cuprammonium fluidity is calculated by means of a formula containing two constants which have been determined by calibrating the viscometer with a liquid of known kinematic viscosity.

5 REAGENTS

The following reagent is required:

Standard cuprammonium hydroxide solution having the following composition per litre of solution:

Copper	15.0 ±0.1 g
Ammonium hydroxide	200 ±5 g
Nitrous acid.....	Not more than 0.5 g

The standard solution shall be stored under refrigeration in a dark bottle firmly capped.

6 APPARATUS

The following apparatus is required:

- Viscometer as specified in Appendix A (see Figure A1(a)).
- Waterbath controlled at a temperature of 20 ±0.2°C.
- Glass jacket in which the viscometer can be supported in a vertical position (see Figure A1(b)).
- Stainless steel or glass rod approximately 2 mm in diameter and 300 mm in length. The rod shall have smooth ends.
- Device for rotating the filled viscometer end-over-end at a speed of approximately 4 r/min.
- Weighing scoop with external dimensions of the neck such that it fits inside the top of the viscometer but is supported on the rim, or alternative means of weighing and transferring the fibre to the viscometer tube (see Figure A1(c)).
- Timing device(s) capable of being read to 0.2 s.
- Balance capable of weighing to 0.1 mg.