

## STANDARDS ASSOCIATION OF AUSTRALIA

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


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**PART 3—CHEMICAL TESTS**


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**AS 2001.3.6**  
**DETERMINATION OF CUPRAMMONIUM FLUIDITY**  
**OF COTTON AND CELLULOSIC MAN-MADE FIBRES**


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## PREFACE

This standard method for determining the fluidity of cotton or man-made cellulosic fibre in a solution of cuprammonium hydroxide supersedes AS L51—1969.

In the preparation of this standard, reference was made to BS 2610, Method of Test for the Determination of the Cuprammonium Fluidity of Cotton and Certain Cellulosic Man-made Fibres.

Solutions of fibre commonly exhibit non-newtonian flow behaviour; thus their fluidity does not have absolute physical significance. For this reason 'cuprammonium fluidity', as defined in this standard, is regarded as an empirical quantity and results are given in arbitrary units of cuprammonium fluidity. The change in this edition from the outmoded CGS unit 'rhes' to 'units of cuprammonium fluidity' in the SI system constitutes the only major technical change to the 1969 edition (of AS L51). The numerical value is unaffected.

This standard requires reference to the following standards:

AS 1152      Test Sieves

ISO 2076      Textiles—Generic Names for Man-made Fibres

## 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.

Details of the viscometer to be used and its calibration, and the preparation of the standard solvent, are described in appendices.

**2 DEFINITIONS.** For the purpose of this standard, the following definitions apply:

*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.

*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, divided by the density of the solvent expressed as  $\text{kg/m}^3 \times 10^{-3}$ .

*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 solvent containing 2.0 g of man-made cellulose fibre in 100 mL of solution divided by the density of the solvent expressed in  $\text{kg/m}^3 \times 10^{-3}$ .

NOTE: For the purpose of this standard, the density of the solvent is taken as 940  $\text{kg/m}^3$ .

**3 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 determined by calibrating the viscometer with a liquid of known kinematic viscosity.

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\*See ISO 2076.