

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 2001.3.4—1995

Methods of test for textiles

Method 3.4: Chemical tests—Determination of solvent extractable matter

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
The Textile Institute

NOTES

Methods of test for textiles

Method 3.4: Chemical tests— Determination of solvent extractable matter

PREFACE

This Standard was prepared by the Standards Australia Committee on Testing of Textiles. The method may be used to determine the amount of oils, fats and waxes present in a textile sample at any stage of processing. However, care must be taken in selecting suitable solvents for this test to ensure meaningful results are obtained.

In evaluating extraction test results, data is more likely to have some relevance to processing history where internal quality control testing has been conducted with knowledge of nominal treatment levels. In circumstances where processing details are possibly unknown, e.g. an independent laboratory, this test may not provide information that is easily interpreted.

During the preparation of this Standard, reference was made to the following Standards:

ISO 3074	Wool—Determination of dichloromethane soluble matter in combed sliver
IWTO-10-66(E)	Method for the determination of the dichloromethane soluble matter in combed wool sliver
BS 3582	Method for the determination of oils, fats and waxes in wool
ASTM D 1574	Test for extractable matter in wool
ASTM D 2257	Test for extractable matter in yarns

METHOD

1 SCOPE This test method describes a procedure for determining the solvent-extractable matter in fibre, yarn and fabric samples using an organic solvent.

2 OBJECTIVE This Standard is intended to provide manufacturers and others seeking to determine the percentage of extractable matter from textiles using an appropriate organic solvent, with a suitable method for obtaining that information.

3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1199	Sampling procedures and tables for inspection by attributes
2001	Method of test for textiles
2001.1	Method of test for textiles—Conditioning procedures

DEFINITION For the purpose of this Standard, the definition below applies.

1 **Soxhlet residue** Non-fibrous material in or on yarn or fibre, usually of an oily or waxy nature, removable by organic solvents.

PRINCIPLE The conditioned specimen is extracted in either a Soxhlet siphoning (Test A), or Soxtec reflux (Test B), extraction equipment with the selected organic solvent. The solvent is evaporated, the residue and test specimen are oven-dried and weighed separately after cooling. The percentage residue is calculated, based on the oven-dry mass of the extracted specimen.

REQUIREMENT Care shall be taken in selecting a suitable solvent for use in this test. In selecting the solvent the following factors shall be considered:

- (a) If the lubricant type is unknown, the solvent recommended is ethanol.
- (b) If the lubricant type is known, ensure that the solvent extracts the lubricant.
- (c) Whether the fibre composition of the sample is resistant to chemical damage by the extracting solvent.

If the extracting solvent causes fibre swelling, results from this test are likely to be higher than expected.

The solvent selected for use shall comply with the following requirements:

- (i) *Ethanol*—containing at least 940 g of anhydrous ethanol with a boiling point of 78.3°C. The purity of the ethanol shall be such that a blank test using 100 mL of the solvent does not leave a residue of more than 0.001 g, on evaporation.

CAUTION: Ethanol is flammable and must be kept away from sources of ignition and all extraction testing must be conducted in a ventilated fume cupboard.

NOTE: Ethanol will cause higher results with protein fibres due to the extraction of fibrous components (e.g. cell lipid material).

- (ii) *Dichloromethane (methylene chloride)*—boiling range 39 to 41°C, analytical grade. The purity of dichloromethane shall be such that a blank test using 100 mL of the solvent on evaporation does not leave a residue of more than 0.001 g.

CAUTION: Dichloromethane is toxic. All extraction testing must be conducted in a ventilated fume cupboard.

NOTE: Dichloromethane is known to chemically damage the following fibre types:

Cellulose triacetate
Chlorinated polyvinyl
Polyvinyl chloride
Polyethylene
Polypropylene and
Polyester

- (iii) *Acetone*—boiling point 56.4°C. The purity of the acetone shall be such that a blank test using 100 mL of the solvent on evaporation does not leave a residue of more than 0.001 g.

CAUTION: Acetone is highly flammable and must be kept away from sources of ignition and all extraction testing must be conducted in a ventilated fume cupboard.

NOTE: Acetone is known to chemically damage the following fibre types:

Cellulose acetate
Cellulose triacetate
Chlorinated polyvinyl and
Vinyl chloride-acrylonitrile copolymer

NOTE: Soxtec is the trademark of Tecator AB, Sweden