

Determination of extractable matter in textiles — Method

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee TCI/80, Chemical testing of textiles, upon which the following bodies were represented:

- Association of Consulting Scientists
- British Apparel and Textile Confederation
- British Measurement and Testing Association
- British Retail Consortium
- British Textile Technology Group
- Carpet Foundation
- Co-operative Union
- Defence Procurement Agency
- Home Laundering Consultative Council
- Laboratory of the Government Chemist
- SATRA Technology Centre
- Society of Dyers and Colourists
- Textiles Institute
- UK Cleaning Products Industry Association
- UKTLF — UK Textile Laboratory Forum
- Woolmark Company
- Co-opted members

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Foreword

This British Standard was prepared by TCI/80.

Textiles can contain solvent extractable substances that do not constitute an integral part of their component fibres. These can originate from the raw materials themselves, or be lubricants added to assist processing, detergents or surfactants applied in scouring, and special finishing agents.

The total amount of these substances will depend on the type and stage of manufacture of the material, and its estimation is important for determining the clean fibre content of a sample.

In general, different substances cannot be extracted individually, unless there are known specific solubilities and selective solvents available. It is possible, however, to extract types of material from textiles, e.g. fatty/oil based substances and water-soluble salts, and to use particular solvents to provide a degree of separation of the different components present.

This standard describes a general procedure for the extraction of certain soluble materials from textiles using organic solvents by conventional Soxhlet extraction. Suitable solvents for the estimation of particular types of substance from individual fibre types or blends are given in Annex A.

This standard is drafted from the following standards that have been withdrawn:

BS 3477:1962, *Method for the determination of oils, fats and waxes in cotton*;

BS 3582:1981, *Method for determination of oils, fats and waxes in wool*;

BS 3845:1990, *Method for determination of added oil content of jute yarn, rove and fabric*.

Future revisions of this standard will reflect other developments in extraction techniques such as micro-extraction, accelerated solvent extraction and supercritical fluid extraction. Use of chlorinated solvents such as dichloromethane might well become unacceptable in the future and alternative extractants will need to be developed.

At present other types of extractable matter in other fibre types and blends are routinely determined, in some instances using solvents other than those mentioned in Annex A. When sufficient data is available to validate such procedures, these could also be incorporated.

CAUTION In addition to removing extractable substances, some solvents in use can also dissolve material from within the structure of the textile itself. The selection of the most appropriate solvent for any particular textile fibre/extractable matter combination is therefore of the utmost importance and should be based on sound knowledge of the materials concerned.

While the solvents given in Annex A are believed to be suitable for the fibre-extract examples shown, no responsibility can be accepted for any undesired effects that can occur.

Light mineral oil, as an oil-in-water emulsion, is added to jute fibres during conversion to yarn, and some or all of this oil is present in jute at later stages of manufacture. This standard describes a method for the determination of added oil in jute, based on the extraction of the oil by an organic solvent. All organic solvents, however, extract some of the natural constituents of jute and an allowance has to be made in quantitative determinations of the added oil. The solvent used in this method has been found to extract less of the natural constituents than any other common solvent, and hence the necessary allowance is at a minimum. Depending on the type used, the procedure extracts between 0.1 % and 0.2 % of the natural constituents of the jute.

WARNING This British Standard calls for the use of substances that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage. It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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