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BSI Standards Publication

Clothes washing machines and washer-dryers for household and similar use - Method for the determination of rinsing effectiveness by measurement of the surfactant content at textile materials

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National foreword

This Published Document is the UK implementation of CLC/TS 50677:2019.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Clothes washing machines and washer-dryers for household and similar use - Method for the determination of rinsing effectiveness by measurement of the surfactant content at textile materials

Machines à laver le linge et machines à laver et à sécher pour usages domestiques et analogues - Méthode pour la détermination de l'efficacité de rinçage par la mesure de la teneur en tensioactifs des matières textiles

Waschmaschinen und Waschtrockner für den Hausgebrauch und ähnliche Zwecke - Verfahren zur Bestimmung der Spülwirkung durch Messung des Tensidgehalts an Textilien

This Technical Specification was approved by CENELEC on 2018-12-31.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (CLC/TS 50677:2019) has been prepared by CLC/TC 59X "Performance of household and similar electrical appliances".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

1 Scope

This Technical Specification provides a method for the evaluation of the rinsing effectiveness of household clothes washing machines, washer dryers and commercial washing machines. The amount of residual linear alkylbenzene sulfonate surfactant (LAS) extracted from the unstained test swatches of the strips used in the washing performance test is determined. This is accomplished by measuring the ultraviolet (UV) light absorbance at the wavelength particular to LAS, a key ingredient of the detergent.

Assuming a fixed linear relationship between LAS amount and quantity of detergent mixture and using a concentration versus absorbance curve developed as part of this procedure, the absorbance values are then converted into detergent concentrations, which together with the test solution mass data, yields detergent quantities. This assumption is done, because in the frame of this test it is not possible to determine the exact amount of LAS involved, even in the concentration curves, but only the amount of detergent used.

On the textiles, this linear relationship is not given, but it is nevertheless used to express the amount of LAS as determined by UV light absorbance measurements in terms of a detergent amount.

Using a concentration versus absorbance curve developed as part of this procedure, the absorbance values can then be converted into detergent concentrations, which together with the test solution mass data, yields detergent quantities.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60456:2016, *Clothes washing machines for household use — Methods for measuring the performance (IEC 60456)*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Symbols and abbreviated terms

4.1 The variables for Rinse Effectiveness calculations are defined as:

Asp_a average absorbance

$Asp_{avg,j}$ average net absorbance of the sample j [1)]

Asp_i net absorbance for specimen i [1)]

$Asp_{i,223}$ absorbance reading at 223 nm for specimen i [1)]

$Asp_{i,330}$ absorbance reading at 330 nm for specimen i [1)]

Asp_m peak absorbance at wavelength m [1)]

[1)] Care shall be taken in the calculations of Clause 6, as these variables are depending on additional parameters, e.g. index of the sample, swatch or test run.