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Washing machines for household use — Method for measuring the microbiological performance

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and symbols 8
3.1 Terms and definitions 8
3.2 Symbols 9
4 Requirements 9
5 Test conditions, materials, equipment and instrumentation 10
5.1 Test conditions 10
5.2 Materials and reagents 10
5.2.1 Microorganisms for test purposes 10
5.2.2 Culture media and solutions 11
5.2.3 Detergent 13
5.3 Equipment 14
5.3.1 General 14
5.3.2 Incubator 14
5.3.3 Autoclave 14
5.3.4 Cotton carrier 14
5.3.5 Biomonitor cloth 14
5.3.6 Pipettes 15
5.3.7 Electromechanical agitator 15
5.3.8 Base load 15
5.3.9 Measuring equipment for assessing temperature profile 16
5.3.10 Measuring equipment for water consumption 16
6 Tests 16
6.1 Test method principles 16
6.2 Preparation of washing machine 16
6.3 Preparation of test microorganisms and biomonitors 17
6.3.1 Cultures 17
6.3.2 Biomonitors 18
6.4 Main test 19
6.4.1 General 19
6.4.2 Evidence of test microorganisms 19
6.5 Validation 20
6.5.1 Enumeration of microorganisms before washing N_0 (reference biomonitor) 20
6.5.2 Negative control (cross contamination) 21
6.5.3 Determination of water quality 21
6.5.4 Determination of water quantity in the main wash 21
7 Evaluation 21
7.1 Log reduction 21
7.2 Cross contamination 21
8 Test report 22
Annex A (normative) Suitable methods to prepare the washing machine prior to test 24
A.1 General 24

AVA Documents
Document Sharing Hub

A.2 Methods to prepare the washing machines before test 24
A.2.1 Hot washing with the detergent 24
A.2.2 Hot washing without detergent 24
A.2.3 Treatment with sodium hypochlorite solution 24
A.2.4 Treatment with peracetic acid solution (PAA) 25
Annex B (informative) Sources of materials and supplies 26
B.1 General 26
B.2 Suppliers for test materials 26
Bibliography 27

Figure 1 – Biomonitor cloth 15

Table 1 – Composition of TSA 11
Table 2 – Composition of Sabouraud dextrose agar with chloramphenicol 11
Table 3 – Composition of Tryptic Soy Broth (TSB) 12
Table 4 – Composition of Baird-Parker agar 12
Table 5 – Composition of cetrimide agar 12
Table 6 – Composition of diluting agent 13
Table 7 – Composition of neutralisation solution 13
Table 8 – Temperature logger specification 16

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

WASHING MACHINES FOR HOUSEHOLD USE – METHOD FOR MEASURING THE MICROBIOLOGICAL PERFORMANCE

FOREWORD

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IEC TS 63429 has been prepared by subcommittee 59D: Performance of household and similar electrical laundry appliances, of IEC Technical Committee 59: Performance of household and similar electrical appliances. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
59D/498/DTS	59D/503A/RVDTS

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Specification is English.

In this document, the following print type is used:

– terms defined in Clause 3: **bold type**.

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

This Technical Specification describes a method to measure the microbial contamination reduction performance of household **washing machines**. Microbial reduction due to any potential or claimed antimicrobial action of detergents other than the base powder of the required detergent, as well as of bleach systems or any other additives, is not addressed.

This first edition has been developed to provide a globally applicable and agreed method to measure the reduction of the microbial contamination of household **washing machines** and their **programmes**, to be measured with textile pieces contaminated with test microorganisms under standardized conditions.

The reduction of the microbial contamination is just one of the performance parameters measurable for a **washing machine**. Therefore, it is not used as the only parameter to describe the performance of a washing **programme,** but it is measured along with the other performance parameters considered for that **programme**.

NOTE The use of the reference **washing machine** as defined in IEC 60456 as a reference process for the reduction of microbial contamination is under consideration.

The test microorganisms requested for this Technical Specification require BSL-1 and 2 laboratories. BSL-1 laboratories are restricted to the use of *Staphylococcus arlettae* and *Saccharomyces cerevisiae*, whereas BSL-2 laboratories shall use *Pseudomonas aeruginosa, Staphylococcus aureus, Candida albicans*, or all five test microorganisms.

Classification of test microorganisms can change and can differ on national levels. It is the responsibility of the user to ensure compliance with applicable national classification.

Different type strains of the same microbial species described in this Technical Specification can be used if the achievement of comparable results is proven.

Additional test microorganisms can be used besides the test strains described in this Technical Specification, but their result cannot be used to claim compliance with the Technical Specification and shall not be reported in the same test report.

The ATCC numbers are the collection numbers of strains supplied by the American Type Culture Collections (ATCC). This information is given for the convenience of users of this Technical Specification and does not constitute an endorsement by IEC of the product named.

This document does not purport to address all the safety aspects, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national, regional or international regulatory conditions.

A warning about the use of this document is included in Clause 4.

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WASHING MACHINES FOR HOUSEHOLD USE – METHOD FOR MEASURING THE MICROBIOLOGICAL PERFORMANCE

1 Scope

This Technical Specification provides a test method for measuring the microbial contamination reduction performance of household **washing machines** with textile pieces contaminated with test microorganisms under standardized conditions. The microbial numbers on the contaminated textile pieces are measured before and after the washing **programme** and the reduction is calculated. Furthermore, a potential **cross contamination** from contaminated to uncontaminated textile pieces within the washing **programme** is measured.

This document does not address the microbial contamination reduction due to any potential or claimed antimicrobial action of detergents as well as of bleach systems or any additives.

This document applies to **washing machines** for household use, within the meaning that the scope of TC 59 indicates for household use, including the washing related functions of **washer-dryers.**

This document does not apply to professional **washing machines** nor to commercial laundry **operations** associated with food service, hospital linens or other non-residential applications.

This document deals with measurement procedures regarding the reduction of microbial contamination resulting from the use of electrical appliances for household and similar use. This document specifies methods that enable reproducible measurements. These derived measurement results can only be used for a relative statement. Absolute statements, i.e., health-related claims or conclusions about prevention or treatment of a disease or health improvement, are reserved for explicit regulatory action after a medical assessment.

This document does not apply to appliances intended to be used in medical, veterinary, or pharmaceutical applications.

This document does not address sanitization, disinfection, or sterilization measures.

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.

IEC 60456:2010, *Clothes washing machines for household use – Methods for measuring the performance*
IEC 60456:2010/AMD1:2022

ISO 2267, *Surface active agents – Evaluation of certain effects of laundering – Methods of preparation and use of unsoiled cotton control cloth*

ISO 19458:2006, *Water quality – sampling for microbiological analysis*

EN 12353, *Chemical disinfectants and antiseptics. Preservation of test organisms used for the determination of bactericidal (including Legionella), mycobactericidal, sporicidal, fungicidal and virucidal (including bacteriophages) activity*

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