PD IEC/PAS 62958:2015

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# Clothes washing machines for household use — Method for measuring the microbial contamination reduction

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

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# PUBLICLY AVAILABLE SPECIFICATION

## PRE-STANDARD

**Clothes washing machines for household use – Method for measuring the microbial contamination reduction**

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CONTENTS

FOREWORD ..... 5
INTRODUCTION ..... 7
1 Scope ..... 8
2 Normative references ..... 8
3 Terms, definitions and symbols ..... 9
3.1 Terms and definitions ..... 9
3.2 Symbols ..... 9
4 Requirements ..... 10
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 ..... 10
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 Microorganism carrier ..... 14
5.3.5 Pipettes ..... 14
5.3.6 Electromechanical agitator ..... 14
5.3.7 Centrifuge, centrifuge tubes ..... 14
5.3.8 Base load ..... 14
5.3.9 Measuring equipment for assessing temperature profile ..... 15
5.3.10 Measuring equipment for water consumption ..... 15
6 Tests ..... 15
6.1 Test method principles ..... 15
6.2 Preparation of test washing machine ..... 15
6.3 Preparation of test microorganisms and bio monitors ..... 15
6.3.1 Cultures ..... 15
6.3.2 Bio monitors ..... 17
6.4 Main test ..... 18
6.4.1 General ..... 18
6.4.2 Evidence of test microorganisms ..... 18
6.5 Validation ..... 18
6.5.1 Enumeration of microorganisms before exposition $N_0$ (bio monitor reference) ..... 18
6.5.2 Negative control (cross contamination) ..... 18
6.5.3 Determination of water quality ..... 19
6.5.4 Determination of water quantity in the main wash ..... 19
7 Evaluation ..... 19
7.1 Log reduction ..... 19
7.2 Cross contamination ..... 19
8 Test report ..... 19
Annex A (informative) Microorganism reduction in household washing machines with risk class 1 test microorganisms for internal development purpose ..... 21

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Document Sharing Hub
Full document details: PD IEC/PAS 62958:2015

A.1 Scope ... 21
A.2 General recommendation ... 21
A.3 Material and reagents ... 21
A.3.1 Microorganisms on bio monitors ... 21
A.3.2 Water for culture media and solutions ... 21
A.3.3 Culture media and solutions ... 21
A.3.4 Detergent ... 23
A.4 Equipment ... 23
A.4.1 Incubator ... 23
A.4.2 Autoclave ... 23
A.4.3 Microorganism carrier ... 23
A.4.4 Pipettes ... 23
A.4.5 Electromechanical agitator ... 23
A.4.6 Centrifuge ... 23
A.4.7 Base load ... 23
A.4.8 Measuring equipment for assessing temperature profile ... 23
A.4.9 Measuring equipment for water consumption ... 23
A.5 Tests ... 23
A.5.1 Test method principles ... 23
A.5.2 Preparation of washing machine ... 24
A.5.3 Preparation of test organisms and bio monitors ... 24
A.5.4 Main test ... 25
A.5.5 Validation ... 26
A.6 Evaluation ... 26
A.6.1 Plate counts per bio monitor ... 26
A.6.2 Log reductions ... 27
A.6.3 Cross contamination ... 27
A.7 Test report ... 27
Annex B (informative) Sources of materials and supplies ... 28
B.1 Disclaimer ... 28
B.2 Microorganism carriers ... 28
B.3 Electromechanical agitator ... 28
B.4 Ready-to-use bio monitors ... 28
B.5 Nonionic surfactant and emulsifier ... 28
Bibliography ... 29

Figure A.1 – Scheme for preparing a dilution series ... 25

Table 1 – Composition of Tryptone Soy Agar (TSA) ... 11
Table 2 – Composition of Sabouraud Dextrose Agar with Chloramphenicol ... 11
Table 3 – Composition of Cetrimide Agar ... 11
Table 4 – Composition of Baird-Parker Agar ... 12
Table 5 – Composition of Malt Extract Agar (MEA) ... 12
Table 6 – Composition of Tryptone Soy Broth (TSB) ... 12
Table 7 – Composition of diluting agent ... 13
Table 8 – Composition of recommended neutralisation solution ... 13
Table 9 – Specifications for temperature logger ... 15

AVA Documents
Document Sharing Hub
Full document details: PD IEC/PAS 62958:2015

Table A.1 – Composition of Sabouraud Dextrose Agar ..... 22
Table A.2 – Composition of Columbia CNA Agar ..... 22

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

# CLOTHES WASHING MACHINES FOR HOUSEHOLD USE – METHOD FOR MEASURING THE MICROBIAL CONTAMINATION REDUCTION

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IEC PAS 62958 has been processed by subcommittee 59D: Performance of household and similar electrical laundry appliances, of IEC technical committee 59:

| The text of this PAS is based on the following document: | This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document |
|---|---|
| **Draft PAS** | **Report on voting** |
| 59D/423/PAS | 59D/427/RVD |

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# INTRODUCTION

SC 59D decided to address the measurement of the microbial contamination reduction in washing machines by developing a globally acceptable Publicly Available Specification to respond to the increase in consumer complaints regarding odour from washing machines and washed laundry caused by presence of microorganisms.

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# CLOTHES WASHING MACHINES FOR HOUSEHOLD USE – METHOD FOR MEASURING THE MICROBIAL CONTAMINATION REDUCTION

## 1 Scope

This Publicly Available Specification (PAS) specifies a test method for measuring the reduction of microbial contamination in clothes washing machines and of the possible cross contamination to uncontaminated load.

NOTE A significant differentiation in microorganism contamination reduction capability of washing machines can be expected at wash temperature not higher than 40 °C.

This PAS applies to clothes washing machines for household use, with or without heating devices utilising cold and/or hot water supply. It also covers washing machines which specify the use of no detergent for normal use. This PAS applies also to washing machines for communal use in blocks of flats or in launderettes.

This PAS does not deal with professional washing machines nor with commercial laundry operations associated with food service, hospital linens or other non-residential applications. It also does not address the needs of persons with specific health conditions requiring special sanitization and/or disinfection techniques.

This PAS does not specify safety requirements and does not deal with performance of washing machines measured under IEC 60456 nor with effects on fabrics.

## 2 Normative references

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

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

EN 1276, *Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas. Test method and requirements (phase 2, step 1)*

EN 1650, *Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas. Test method and requirements (phase 2, step 1)*

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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# 3 Terms, definitions and symbols

## 3.1 Terms and definitions

**3.1.1**
**washing machine**
appliance for cleaning and rinsing of textiles using water which may also have a means of extracting excess water from the textiles

**3.1.2**
**test washing machine**
**washing machine** that is subjected to part or all of the requirements in this PAS in order to determine its performance

**3.1.3**
**test run**
single performance assessment

**3.1.4**
**programme**
series of **operations** which are pre-defined within the **washing machine** and which are declared by the manufacturer as suitable for washing certain textile types

**3.1.5**
**base load**
textile load used for testing not including the **bio monitors**

**3.1.6**
**cross contamination**
transfer of microorganisms from fabrics to fabrics during one **test run**

**3.1.7**
**inoculum**
quantity of cells to be inoculated in culture medium

**3.1.8**
**bio monitor**
microorganism carrier inoculated with microorganisms to be used to monitor the reduction of microbial contamination

**3.1.9**
**temperature profile**
time–temperature data representing the water temperature in the **washing machine** during the **test run**

## 3.2 Symbols

| | |
|---|---|
| $N_0$ | average value of microorganism amount of the two positive controls, before exposition to the test **programme** (cfu/bio monitor) |
| $N$ | average value of microorganism amount per 5 **bio monitors**, after exposition to the test **programme** (cfu/bio monitor) |
| $\log(N_0/N)$ | reduction factor per microorganism type |
| $v^{-1}$ | microorganism amount in a 10 times diluted solution |
| $v^{-2}$ | microorganism amount in a 100 times diluted solution |
| $SD_{initial}$ | standard deviation of $N_0$ |
| $SD_{washed}$ | standard deviation of $N$ |

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