

SLOVENSKI STANDARD
SIST EN 60734:1998**01-januar-1998**

Hard water to be used for testing the performance of some household electrical appliances (IEC 734:1993)

Hard water to be used for testing the performance of some household electrical appliances

Hartes Wasser zur Verwendung bei Prüfungen der Gebrauchseigenschaften einiger elektrischer Haushaltsgeräte

Eau dure à utiliser pour les essais d'aptitude à la fonction de certains appareils électrodomestiques

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13.060.99	Drugi standardi v zvezi s kakovostjo vode	Other standards related to water quality
97.030	Električni aparati za dom na splošno	Domestic electrical appliances in general

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EUROPEAN STANDARD

EN 60734

NORME EUROPEENNE

EUROPÄISCHE NORM

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Descriptors: Household electrical appliances, performance,
characteristics, water hardness

ENGLISH VERSION

Hard water to be used for testing the performance
of some household electrical appliances
(IEC 734:1993)

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(CEI 734:1993)

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Gebrauchseigenschaften einiger
elektrischer Haushaltgeräte
(IEC 734:1993)

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This European Standard was approved by CENELEC on 1992-12-09.
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CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

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EN 60734:1993

FOREWORD

The text of document 59(CO)22, as prepared by IEC technical committee 59: Performance of household electrical appliances, was submitted to the IEC-CENELEC parallel vote in March 1992.

The reference document was approved by CENELEC as EN 60734 on 9 December 1992.

The following dates were fixed:

- latest date of publication of
an identical national standard (dop) 1994-02-15
- latest date of withdrawal of
conflicting national standards (dow) 1994-02-15

ENDORSEMENT NOTICE

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The text of the International Standard IEC 734:1993 was approved by CENELEC as a European Standard without any modification.

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
734

Deuxième édition
Second edition
1993-02

**Eau dure à utiliser
pour les essais d'aptitude à la fonction
de certains appareils électrodomestiques**

iTeh STANDARD PREVIEW

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HARD WATER TO BE USED FOR TESTING
THE PERFORMANCE OF SOME HOUSEHOLD
ELECTRICAL APPLIANCES**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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SIST EN 60734:1998

International Standard IEC 734 has been prepared by IEC technical committee 59: Performance of household electrical appliances.

This second edition of IEC 734 replaces the first edition published in 1982.

The text of this standard is based on the following documents:

DIS	Report on Voting
59(CO)22	59(CO)32

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

Annex A is for information only.

INTRODUCTION

It is necessary to use a standardized hard water for interlaboratory tests when complete correlation of results is required.

It may not be necessary to use a standardized hard water:

- for routine laboratory testing within one laboratory when comparisons are being made using one source of water;
- for interlaboratory tests when a standard reference machine is used for comparison testing if it can be shown that sufficient correlation is obtained over a stated range of hardness;
- for interlaboratory testing of machines with a built-in ion exchange water softener (as in some dishwashers) if it can be shown that correlation is obtained over a stated range of hardness.

These factors should be considered in assessing the capacity of equipment required for producing the standardized hard water.

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HARD WATER TO BE USED FOR TESTING THE PERFORMANCE OF SOME HOUSEHOLD ELECTRICAL APPLIANCES

1 Scope

This International Standard applies to hard water to be used for testing the performance of some household electrical appliances such as washing machines, steam irons, etc.

It defines the characteristics of this hard water and establishes the method to be used for obtaining it.

2 General

2.1 Principle

Since natural waters are so variable in character and hardness, the only hard water that can give standardized results between laboratories is a completely demineralized water that is subsequently hardened to an agreed standard.

Two methods of producing standardized hard water are given. Method A gives exactly the required composition. Method B results in an excess of sodium, chlorine and sulfate ions compared to method A. Method B is less time-consuming and should be satisfactory if the excess of ions is acceptable.

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2.2 Units

Hardness is expressed in mmol/l (Ca + Mg)

NOTE - A table for conversion into other hardness units is given in annex A.

2.3 Standardization of water hardness

Three hardnesses are standardized:

3,00 mmol/l	}	total hardness (Ca + Mg)
1,50 mmol/l		
0,50 mmol/l		

NOTE - With these three hardnesses any individual country can select one or more standardized hard waters which would approximate to the natural waters available in that country.

2.4 Composition of standardized hard water

2.4.1 Composition of water prepared by method A

The temporary hardness component of the standardized hard water consists of calcium hydrogen carbonate ($\text{Ca}(\text{HCO}_3)_2$) and the permanent hardness component is equally divided between calcium chloride (CaCl_2) and magnesium sulfate (MgSO_4).