



**SLOVENSKI STANDARD**  
**SIST EN 1772:1997**  
**01-december-1997**

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Surface active agents - Determination of wetting power by immersion (ISO 8022:1990 modified)

Grenzflächenaktive Stoffe - Bestimmung des Tauchnetzvermögens (ISO 8022:1990 modifiziert)

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Agents de surface - Détermination du pouvoir mouillant par immersion (ISO 8022:1990 modifié)

[SIST EN 1772:1997](https://standards.iteh.ai/catalog/standards/sist/96bedec6-7c47-4e2d-a51e-4b9f7511d7b6/sist-en-1772-1997)

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**Ta slovenski standard je istoveten z: EN 1772:1995**

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**ICS:**

71.100.40 Površinsko aktivna sredstva Surface active agents

**SIST EN 1772:1997**

**en**

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EUROPEAN STANDARD

EN 1772

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ICS 71.100.40

Descriptors: surfactants, tests, determination, wettability, immersion

English version

Surface active agents - Determination of wetting  
power by immersion (ISO 8022:1990 modified)

Agents de surface - Détermination du pouvoir  
mouillant par immersion (ISO 8022:1990 modifié)

Grenzflächenaktive Stoffe - Bestimmung des  
Tauchnetzvermögens (ISO 8022:1990 modifiziert)

STANDARD PREVIEW  
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REPUBLIKA SLOVENIJA  
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO  
Urad RS za standardizacijo in meroslovje  
LJUBLJANA

SIST..... EN 1772 .....

PREVZET PO METODI RAZGLASITVE

-12- 1997

This European Standard was approved by CEN on 1995-03-14. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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## Foreword

The text of the International Standard from ISO/TC 91 "Surface active agents" of the International Organization for Standardization (ISO) has been taken over as a European Standard by the Technical Committee CEN/TC 276 "Surface active agents".

This European Standard shall be given the status of a National Standard, either by publication of an identical text or by endorsement, at the latest by February 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

According to CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Annex A and B are informative.

## Endorsement notice

The text of the international standard ISO 8022:1990 was approved by CEN/TC 276 as a European Standard with the following modifications as given below.

Punch of diameter 30 mm, carefully degreased using a volatile solvent.

[SIST EN 1772:1997](#)

NOTE : The following solvents may be used; [sist/96bedec6-7c47-4e2d-a51e-4b9f7511d7b6/sist-en-1772-1997](#)

- acetone ;
- hexane ;
- hexane/acetone mixture, 50 %/50 % (VIV) ;
- ethanol ;
- acetone/ethanol mixture, 50 %/50 % (VIV) ;
- distilled water (in some cases).

## Introduction

In many textile operations, for example softening or washing textiles, as well as in the rinsing or the cleaning of hard surfaces - in short in all processes in which a phase (air, oil or soil) has to be replaced by a liquid phase (aqueous or organic) - it is useful to know the wetting agents used. It is also important to know after how long complete wetting is obtained.

## 1 Scope

This European standard specifies a method for determining the wetting power of a surface active agent in solution by immersion of a disc of raw cotton cloth in the solution. The method is applicable to all surface active agents, whatever their ionic character, used as wetting agents in neutral, slightly acid or slightly basic baths for textile applications. The method is not applicable to mercerizing assistants (baths highly basic) or to carbonising assistants (baths highly acid).

## 2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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- EN 20139:1992      Textiles - Standard atmospheres for conditioning and testing.
- ISO 607 : 1980      Surface active agents and detergents - Methods for sample division.
- ISO 2456 : 1986      Surface active agents - Water used as a solvent for tests - Specification and test methods.
- ISO 3819 : 1985      Laboratory glassware - Beakers.

## 3 Definition

For the purposes of this European standard, the following definition applies :

**wetting power (by immersion)** : Degree of ability of a solution of surface active agent to displace the air trapped in a cloth when the cloth is steeped in the solution.

The wetting power of a surface active agent can be evaluated by examination of plots of wetting time of discs of raw cotton cloth immersed in solutions of surface active agents or solutions of standard wetting agents of known concentration, against concentration.

#### 4 Principle

Immersion, while held in a gripper, of a cotton disc of known nature and characteristics, in a solution of surface active agent of known concentration ; maintenance of complete submersion in the solution, by means of the specially designed gripper, of the cotton disc, which tends to float to the surface due to air trapped in the cloth. After displacement of air and penetration of the solution into the cloth, the cotton disc starts to sink. Determination of the wetting time by measuring the interval between the moment of immersion of the cotton disc and the moment when it begins to sink.

Determination of the wetting time using two standard solutions, at five concentrations for each, and then using the surface active agent solution under test, also at five different concentrations.

After plotting the three "wetting time/concentration" curves, determination of the wetting power of the surface active agent under test by comparison of the position of its curve with the two standard curves.

#### 5 Reagents and products

5.1 Distilled water, or water of equivalent purity, complying with the specifications of ISO 2456.

Other grades of water may be used provided details are noted in the test report.

5.2 Sodium di-*n*-hexylsulfosuccinate, of recognised analytical grade.

5.3 Sodium di-*n*-heptylsulfosuccinate, of recognised analytical grade.

5.4 Raw cotton control cloth, of known nature and characteristics, conditioned in the standard temperate atmosphere specified in EN 20139 i.e. a relative humidity of 65 % and a temperature of 20 °C. (Various types of commercially available control cloths are described in annex A).

#### 6 Apparatus

Ordinary laboratory apparatus and, in particular :

6.1 Beaker, low form, of capacity 1 000 ml, complying with the specifications of ISO 3819.

6.2 Cloth-immersion gripper, made of stainless-steel wire of about 2 mm diameter and whose dimensions are given in figure 1 (see also the photo, figure 2, which shows an example of a gripper constructed in accordance with figure 1, with three support arms projecting at right angles from the gripper body). These arms may be mounted on a sliding collar as shown in figure 1. It is important that the design of the gripper is such that, when a raw cotton disc held in the gripper is immersed in 700 ml of test solution in the 1 000 ml beaker (6.1), the cotton disc is held about 40 mm below the surface of the solution. It is also important that the gripper tips only open about 6 mm so that the cotton disc remains nearly vertical in the solution.

6.3 Punch, of diameter 30 mm, carefully degreased using a volatile solvent.

NOTE : The following solvents may be used :

- acetone ;
- hexane ;
- hexane/acetone mixture, 50 %/50 % (V/V) ;
- ethanol ;
- acetone/ethanol mixture, 50 %/50 % (V/V) ;
- distilled water (in some cases).

#### 6.4 Stopwatch, accurate to 0,1 s.

Dimensions in millimetres

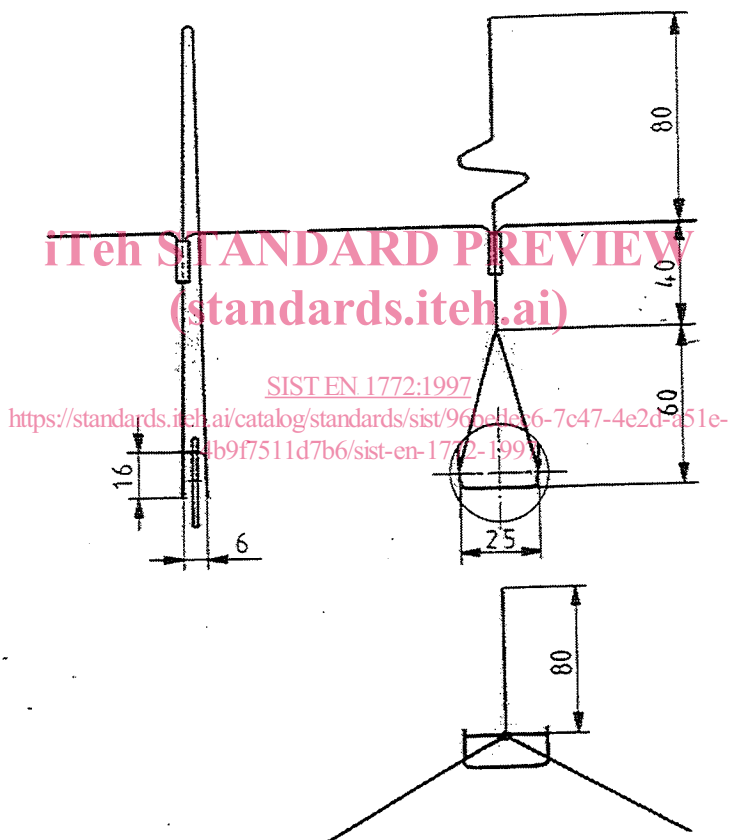
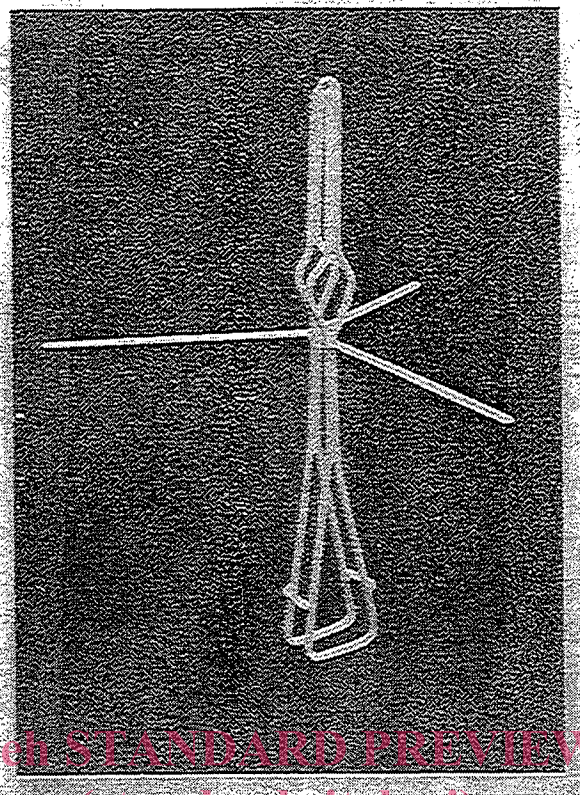


Figure 1 : Cloth-immersion gripper





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Figure 2 : Photo showing example of gripper constructed in accordance with the requirements specified in 6.2

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