

INTERNATIONAL STANDARD

**ISO
8022**

Second edition
1990-07-15

ANSI Internat Doc Sec1

Surface active agents — Determination of wetting power by immersion

Agents de surface — Détermination du pouvoir mouillant par immersion



Reference number
ISO 8022 : 1990 (E)



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8022 was prepared by Technical Committee ISO/TC 91, *Surface active agents*.

This second edition cancels and replaces the first edition (ISO 8022 : 1984), of which it constitutes a minor revision.

Annexes A and B of this International Standard are for information only.

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Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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.

Surface active agents — Determination of wetting power by immersion

1 Scope

This International 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 carbonizing assistants (baths highly acid).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 139: 1973, *Textiles — Standard atmospheres for conditioning and testing*.

ISO 607: 1980, *Surface active agents and detergents — Methods of 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 International 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.