

First edition  
2009-09-01

---

---

## **Cosmetics — Sun protection test methods — Review and evaluation of methods to assess the photoprotection of sun protection products**

*Cosmétiques — Méthodes d'essai de protection solaire — Revue  
systématique et évaluation des méthodes usuelles de mesure de la  
protection solaire fournie par les produits de protection solaire*



Reference number  
ISO/TR 26369:2009(E)

© ISO 2009

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Contents

Page

Foreword .....	iv
1 Scope .....	1
2 Terms and definitions .....	1
3 Principle .....	1
4 Sun protection test methods .....	2
4.1 SPF <i>in vivo</i> .....	2
4.2 SPF <i>in vitro</i> .....	2
4.3 UVA <i>in vivo</i> .....	2
Bibliography .....	38

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 26369 was prepared by Technical Committee ISO/TC 217, *Cosmetics*.

# Cosmetics — Sun protection test methods — Review and evaluation of methods to assess the photoprotection of sun protection products

## 1 Scope

This Technical Report reviews and evaluates the methods which are currently used to assess, for regulatory or self-regulatory purposes, the photoprotection of sun protection products applied on the human body.

It is applicable to SPF and UVA protection, and both *in vivo* and *in vitro* methods.

This Technical Report does not include the aspects of labelling in a wide sense.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1

#### ultraviolet UV

electromagnetic radiation with a wavelength shorter than that of visible light, but longer than soft X-rays and so named because the spectrum consists of electromagnetic waves with frequencies higher than those that humans identify as the color violet (purple)

NOTE In this Technical Report the following wavelengths are considered: UVA: 320 nm to 400 nm; UVB: 290 nm to 320 nm.

### 2.2

#### sun protection factor SPF

(of a sunscreen) laboratory measurement to assess the effectiveness of sunscreens against UV erythema

NOTE 1 The higher the SPF, the more protection a sunscreen offers.

NOTE 2 The SPF is a ratio between the ultraviolet dose required to produce minimal erythema reaction (redness) in protected skin (skin with sunscreen) compared to unprotected skin (skin without any sunscreen).

## 3 Principle

This systematic review and evaluation of the methods are conducted for development of those ISO Standards which assess the photoprotection provided by sun protection products applied on the human body. It will serve as a technical/scientific framework to identify the most suitable methods for standardization.

The key parameters and elements are listed in Tables 1 to 6 in order to enable an easy comparison of the methods.