Sensory analysis - Methodology - General guidance for establishing a sensory profile (ISO 13299:2016)



# EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 13299:2016 sisaldab Euroopa standardi EN ISO 13299:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 13299:2016 consists of the English text of the European standard EN ISO 13299:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.04.2016.	Date of Availability of the European standard is 06.04.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile <u>standardiosakond@evs.ee</u>.

#### ICS 67.240

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega: Aru 10, 10317 Tallinn, Eesti; koduleht <u>www.evs.ee</u>; telefon 605 5050; e-post <u>info@evs.ee</u>

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

# EUROPEAN STANDARD

# **EN ISO 13299**

# NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

April 2016

ICS 67.240

Supersedes EN ISO 13299:2010

## **English Version**

# Sensory analysis - Methodology - General guidance for establishing a sensory profile (ISO 13299:2016)

Analyse sensorielle - Méthodologie - Directives générales pour l'établissement d'un profil sensoriel (ISO 13299:2016) Sensorische Analyse - Prüfverfahren - Allgemeiner Leitfaden zur Erstellung eines sensorischen Profils (ISO 13299:2016)

This European Standard was approved by CEN on 2 January 2016.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

# **European foreword**

This document (EN ISO 13299:2016) has been prepared by Technical Committee ISO/TC 34 "Food products"

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 October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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

This document supersedes EN ISO 13299:2010.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

#### **Endorsement notice**

The text of ISO 13299:2016 has been approved by CEN as EN ISO 13299:2016 without any modification.

Cor	itent	S	Page
Fore	word		iv
Intro	ductio	n	v
1	Scop	e	1
2		native references	
3		ns and definitions	
4		eral test conditions	
4	4.1	Equipment and test room	
	4.2	Assessors	3
	4.3	Products	
	4.4 4.5	Samples Preliminary discussion	
5		riptive methods: principle and main characteristics	
	5.1	Consensus profile	5
	5.2	Deviation from reference profile (relative-to-reference scaling)	5
	5.3 5.4	Free-choice profileFlash profile	
	5.5	Quantitative descriptive profile	
	5.6	Qualitative sensory profile	
	5.7	Temporal Dominance of Sensations (TDS)	
6		edure for establishing a sensory profile	
	6.1 6.2	General Prepare the test	
	0.2	6.2.1 Select products for training	
		6.2.2 Select assessors	6
		6.2.3 Choose the optimal attributes	
		<ul><li>6.2.4 Determine the order of evaluation</li><li>6.2.5 Select an appropriate response scale</li></ul>	
		6.2.6 Train the assessors	
	6.3	Conduct the test	
		6.3.1 Scoresheets	
	6.4	Statistical interpretation	
	6.5	Study report	9
Anne	ex A (in	formative) <b>Consensus profile</b>	10
Anne	ex B (in	formative) Deviation from reference method (or relative-to-reference rating)	12
Anne	ex C (in	formative) Free-choice profile	14
Anne	ex <b>D</b> (in	formative) Flash profile	16
Anne	ex E (inf	formative) Qualitative sensory profile	18
Anne	ex F (inf	formative) Quantitative descriptive profile	20
Anne	ex G (in	formative) Temporal Dominance of Sensation (TDS)	26
Anne		formative) Univariate analysis when one attribute is quantified by all the	20
D.:		-	
Bibli	ograph	ıy	40

# **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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="www.iso.org/directives">www.iso.org/directives</a>).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: <u>Foreword - Supplementary information</u>.

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 12, *Sensory analysis*.

This second edition cancels and replaces the first edition (ISO 13299:2003), which has been technically revised by presenting the principles and methods in general, including some new ones, which are developed in the annexes.

# Introduction

The purpose of this International Standard is to serve as guidance for establishing sensory profiles performed by trained assessors.

A sensory profile is the result of a descriptive analysis of a sample by a panel of assessors. The sample may be for example food, beverage, tobacco product, cosmetic, textile, paper, packaging, sample of air or water, etc. Profiling can be carried out in a number of ways. Over the years, a few of these have been formalized and codified as descriptive procedures by professional societies or by groups of producers and users for the aim of improving communication between themselves.

The purpose of this International Standard is to provide agreed guidelines for descriptive sensory procedures.

Sensory profiling is the description of sensory properties of a sample, usually consisting in the evaluation of sensory attributes with assignment of an intensity value for each attribute. The attributes are generally evaluated in the order of perception. Some sensory profiles take a view across all of the senses; others (partial profiles) concentrate in detail on particular senses.

Ouality of results depends on the number of assessors and their ability to describe their perceptions. Training and development of a common language help to improve these abilities. Some methods have At is freplic been used with untrained assessors, but it is out of the scope of this International Standard. Quality of results can also depend on the number of replications by an assessor.

# Sensory analysis — Methodology — General guidance for establishing a sensory profile

# 1 Scope

This International Standard gives guidelines for the overall process for establishing a sensory profile. Sensory profiles can be established for all products or samples which can be evaluated by the senses of sight, odour, taste, touch, or hearing (e.g. food, beverage, tobacco product, cosmetic, textile, paper, packaging, sample of air or water). This International Standard can also be useful in studies of human cognition and behaviour.

Some applications of sensory profiling are as follows:

- to develop or change a product;
- to define a product, production standard, or trading standard in terms of its sensory attributes;
- to define a reference "fresh" product for shelf-life testing;
- to study and improve shelf-life of a product;
- to compare a product with a reference product or with other similar products on the market or under development;
- to map a product's perceived attributes for the purpose of relating them to factors such as instrumental, chemical or physical properties, and/or to consumer acceptability;
- to characterize by type and intensity the off-odours or off-tastes in a sample (e.g. in pollution studies).

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5492, Sensory analysis — Vocabulary

ISO 5496, Sensory analysis — Methodology — Initiation and training of assessors in the detection and recognition of odours

ISO 6658, Sensory analysis — Methodology — General guidance

ISO 8586, Sensory analysis — General guidelines for the selection, training and monitoring of selected assessors and expert sensory assessors

ISO 8589, Sensory analysis — General guidance for the design of test rooms

ISO 11035, Sensory analysis — Identification and selection of descriptors for establishing a sensory profile by a multidimensional approach

ISO 11136, Sensory analysis — Methodology — General guidance for conducting hedonic tests with consumers in a controlled area

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5492 and the following apply.